

The Strategy for The Elimination of Mother-To-Child Transmission of HIV in Taiwan, 2005–2019

Hsin-Jou Su *, Hsun-Ying Huang, Hsiu-Yun Lo, Pei-Chun Chan, Chia- Chi Li

Abstract

Since 2005, to prevent mother-to-child transmission of Human Immunodeficiency Virus (HIV), Taiwan has provided free HIV testing at antenatal care for pregnant women, and medical care services for pregnant women and suspect HIV-infected infants. By the end of 2019, the total number of HIV reported cases through HIV testing at antenatal care was 452 cases, with 497 infants provided with medical care services, and 12 mother-to-child transmission cases were reported after follow-up. In further investigation on the causes of these HIV infected infants, we discovered that the pregnant women did not receive HIV screening during pregnancy, the test for HIV was not executed until the second or third antenatal care, and the HIV-infected pregnant women did not receive medical treatment during pregnancy. In addition, some pregnant women whose initial HIV testing result (e.g., EIA/PA tests) was positive, however, the health care workers did not follow to confirm their HIV status, and the children born to the HIV-infected women were not retrospectively traced back before the policy of pregnancy screening was initiated, which might also miss the chance to prevent mother-to-child transmission, or the early detection and prevention of disease. In summary, to achieve the goal of eliminating mother-to-child transmission of HIV, testing at antenatal care for pregnant women is an important policy. However, more comprehensive measures are needed, including HIV/AIDS education about HIV screening, follow-up of the pregnant woman with suspected of infection with HIV, and strengthening the HIV-infected maternal medical care management.

Keywords: HIV infection, mother-to-child transmission, female HIV infection

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The Past, Current Situation, and Future Development of HIV Rapid Testing Policy and Tools in Taiwan

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Abstract

In response to the trends and strategies for international HIV prevention and control and advances in rapid HIV testing techniques, Taiwan Centers for Diseases Control has formulated policies and strategies for the prevention and testing of HIV in Taiwan in accordance with the guidelines of both World Health Organization (WHO) and relevant international literature and the resolutions of both "Committee of HIV Infection Control and Patient Rights Protection, Ministry of Health and Welfare" and the "First Program Review Conference on the Elimination of AIDS in 2030".

In this article we elaborate on the history and status of rapid HIV testing policy in Taiwan and the trends in international HIV testing policy and testing process, and also provide an in-depth analysis of HIV testing methods and tools. The government has actively promoted and implemented various plans for HIV prevention and control in recent years, and expanded the use of rapid HIV testing to shorten the window period and to speed up the HIV diagnosis. Various strategies and measures for HIV prevention and control implemented effectively improved the effectiveness of HIV testing and diagnosis, including promoting policy of HIV testing and counseling services, strengthening cross-ministerial collaboration to promote and broaden the implementation of rapid HIV testing, cooperating with professional medical associations closely to enhance the professional knowledge of medical personnel in HIV testing, expediting rapid HIV testing of health care system and public health system, and incorporating rapid HIV testing into health insurance system.

Keywords: HIV prevention policies and strategies, HIV Ag/Ab combo test, immunochromatographic assays, nucleic acid testing, diagnosis efficacy

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Weekly Data of Notifiable Inases (by week of diagnosis)

Case diagnosis year		Week 44★		Week 1-44			
Classification	Disease Diagnosed	2022	2021	2022		2021	
				Total cases★	Imported cases	Total cases★	Imported cases
Category I	Plague	0	0	0	0	0	0
	Rabies	0	0	0	0	0	0
	SARS	0	0	0	0	0	0
	Smallpox	0	0	0	0	0	0
Category II	Acute Flaccid Paralysis	2	0	25	0	26	0
	Acute Viral Hepatitis type A	0	1	114	1	61	0
	Amoebiasis	5	1	178	48	167	61
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	1	1
	Cholera	1	0	1	0	0	0
	Dengue Fever	1	0	71	51	9	9
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	2	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Hantavirus syndrome	0	0	3	0	1	0
	Malaria	0	0	2	2	1	1
	Measles	0	0	1	0	0	0
	Meningococcal Meningitis	0	0	1	0	3	0
	Paratyphoid Fever	1	0	4	0	2	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	8	3	68	5	110	0
	Typhoid fever	0	0	3	1	2	0
	West Nile Fever	0	0	0	0	0	0
Zika virus infection	0	0	0	0	0	0	
Monkeypox	0	-	4	4	-	-	
Category III	Acute Viral Hepatitis type B	2	1	87	0	119	2
	Acute Viral Hepatitis type C	17	11	410	1	472	0
	Acute Viral Hepatitis type D	0	0	0	0	1	0
	Acute Viral Hepatitis type E	1	0	11	0	5	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	0	0	0	1	0
	Haemophilus Influenza type b Infection	0	0	2	0	1	0
	Japanese Encephalitis	0	0	19	0	27	0
	Legionnaires' Disease	13	8	285	1	306	0
	Mumps	17	11	229	0	361	1
	Neonatal Tetanus	0	0	0	0	0	0
Pertussis	0	0	1	0	0	0	
Tetanus	0	0	7	0	3	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	0	29	0	46	0
	Endemic Typhus Fever	0	0	11	0	30	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	1	0	2	0	1	0
	Invasive Pneumococcal Disease	3	2	151	0	177	0
	Leptospirosis	0	1	54	0	76	0
	Listeriosis	4	4	124	0	145	0
	Lyme Disease	0	0	1	1	1	1
	Melioidosis	0	0	20	1	18	0
	Q Fever	0	0	3	0	8	0
	Scrub Typhus	2	11	242	0	263	0
Toxoplasmosis	1	1	22	0	12	0	
Tularemia	0	0	0	0	1	0	
Category V	Ebola Virus Disease	0	0	0	0	0	0
	Lassa Fever	0	0	0	0	0	0
	Marburg Hemorrhagic Fever	0	0	0	0	0	0
	Middle East Respiratory Syndrome	0	0	0	0	0	0
	Coronavirus Infections	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	0	0	1	0
	Rift Valley Fever	0	0	0	0	0	0
	Severe Pneumonia with Novel Pathogens	197470	30	7870450	34247	15634	1100
Yellow Fever	0	0	0	0	0	0	

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
 2. MDR-TB, Tuberculosis, Syphilis, Gonorrhoea, HIV Infection, AIDS, Hansen's Disease and Creutzfeldt-Jakob Disease are excluded from the table.
 3. Numbers of mumps and tetanus cases are summed up by the week of report.
 4. Since 2022/6/23, " Monkeypox " was listed as a Notifiable Infectious Disease.
 5. Hantavirus Syndrome was applied since September 6, 2021.

Suspected Clusters

- Nine clusters related to diarrhea (5), tuberculosis (4) were reported during week 44.

Imported Infectious Diseases

- There were 313 imported cases from 18 countries during week 44.
Severe Pneumonia with Novel Pathogens: 311 cases from Japan (15), USA (10), Singapore (10), Vietnam (9), Korea (8), Indonesia (5) and the remaining 12 countries have less than 5 cases, 233 unknowns.
Dengue Fever: 1 case from Vietnam.
Shigellosis: 1 case from Indonesia.
- During week 1-44, there were 34364 imported cases from 128 countries. The top three countries are Vietnam (4067), USA (2448), Indonesia (1313).
- During week 1-44, the notifiable diseases with the highest number of imported cases is Severe Pneumonia with Novel Pathogens (34247).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The number of new COVID-19 cases is declining in Taiwan.

Weekly Data of Notifiable Inases (by week of diagnosis)

Case diagnosis year		Week 45★		Week 1-45			
Classification	Disease Diagnosed	2022	2021	2022		2021	
				Total cases★	Imported cases	Total cases★	Imported cases
Category I	Plague	0	0	0	0	0	0
	Rabies	0	0	0	0	0	0
	SARS	0	0	0	0	0	0
	Smallpox	0	0	0	0	0	0
Category II	Acute Flaccid Paralysis	2	1	27	0	27	0
	Acute Viral Hepatitis type A	1	1	115	1	62	0
	Amoebiasis	2	5	180	51	172	62
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	1	1
	Cholera	0	0	1	0	0	0
	Dengue Fever	3	2	74	54	11	11
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	2	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Hantavirus syndrome	1	0	4	0	1	0
	Malaria	0	0	2	2	1	1
	Measles	0	0	1	0	0	0
	Meningococcal Meningitis	0	0	1	0	3	0
	Paratyphoid Fever	0	0	4	0	2	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	1	3	69	5	113	0
	Typhoid fever	0	0	3	1	2	0
	West Nile Fever	0	0	0	0	0	0
Zika virus infection	0	0	0	0	0	0	
Monkeypox	0	-	4	4	-	-	
Category III	Acute Viral Hepatitis type B	1	2	88	0	121	2
	Acute Viral Hepatitis type C	13	11	423	1	483	0
	Acute Viral Hepatitis type D	0	0	0	0	1	0
	Acute Viral Hepatitis type E	0	0	11	0	5	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	0	0	0	1	0
	Haemophilus Influenza type b Infection	0	0	2	0	1	0
	Japanese Encephalitis	0	0	19	0	27	0
	Legionnaires' Disease	6	3	291	1	309	1
	Mumps	16	7	245	0	368	1
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	1	0	0	0
	Tetanus	0	0	7	0	3	0
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	1	30	0	47	0
	Endemic Typhus Fever	0	0	11	0	30	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	1	0	3	0	1	0
	Invasive Pneumococcal Disease	5	1	156	0	178	0
	Leptospirosis	2	1	56	0	77	0
	Listeriosis	3	6	127	0	151	0
	Lyme Disease	0	0	1	1	1	1
	Melioidosis	1	1	21	1	19	0
	Q Fever	0	0	3	0	8	0
	Scrub Typhus	7	7	249	0	270	0
	Toxoplasmosis	0	0	22	0	12	0
Tularemia	0	0	0	0	1	0	
Category V	Ebola Virus Disease	0	0	0	0	0	0
	Lassa Fever	0	0	0	0	0	0
	Marburg Hemorrhagic Fever	0	0	0	0	0	0
	Middle East Respiratory Syndrome	0	0	0	0	0	0
	Coronavirus Infections	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	0	0	1	0
	Rift Valley Fever	0	0	0	0	0	0
	Severe Pneumonia with Novel Pathogens	146767	45	8017202	34524	15679	1145
Yellow Fever	0	0	0	0	0	0	

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
2. MDR-TB, Tuberculosis, Syphilis, Gonorrhea, HIV Infection, AIDS, Hansen's Disease and Creutzfeldt-Jakob Disease are excluded from the table.
3. Numbers of mumps and tetanus cases are summed up by the week of report.
4. Since 2022/6/23, " Monkeypox " was listed as a Notifiable Infectious Disease.
5. Hantavirus Syndrome was applied since September 6, 2021.

Suspected Clusters

- Six clusters related to diarrhea (3), tuberculosis (3) were reported during week 45.

Imported Infectious Diseases

- There were 281 imported cases from 20 countries during week 45.
Severe Pneumonia with Novel Pathogens: 277 cases from Japan (11), USA (9), Thailand (6), and the remaining 17 countries have less than 5 cases, 210 unknowns.
Dengue Fever: 3 cases from Vietnam (2), The Philippines (1).
Amoebiasis: 1 case from unknown.
- During week 1-45, there were 34647 imported cases from 128 countries. The top three countries are Vietnam (4073), USA (2457), Indonesia (1321).
- During week 1-45, the notifiable diseases with the highest number of imported cases is Severe Pneumonia with Novel Pathogens (34524).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The number of new COVID-19 cases is declining in Taiwan.

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