

Prevention and Control of Tuberculosis in Rural Aboriginal Towns, Hsinchu County, 2018

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Abstract

Taiwan Centers for Disease Control (Taiwan CDC) has promoted the active case finding of tuberculosis strategy for rural aboriginal towns since 1997. When the local public health centers provided routine mobile health screening services in rural aboriginal towns, residents were encouraged to receive chest X-ray examination. For residents with mobility difficulties or whose residences were unreachable by the mobile X-ray vehicles, the public health personnel would home visit, check the tuberculosis symptoms screening questionnaires and collect sputum samples for test if necessary. However, some of the residents had never or irregularly participated the mobile health screening services. To strengthen the prevention of tuberculosis in rural aboriginal towns, Taiwan CDC implemented the “Plan for eliminating health inequality in rural aboriginal towns” in eight rural aboriginal towns of five counties in 2018. The plan involved medical and educational systems into the proactive screening of tuberculosis. This article is to share the experience of implementation of the specified plan in Hsinchu County in 2018.

We analyzed the data of participants in the proactive screening from 2016 to 2018 provided by Hsinchu County to evaluate the performance of the plan in Wufeng and Jianshi Townships. In Wufeng and Jianshi Townships, the screening rates in 2018 were 23% and 13% respectively. The three-year cumulative screening rates of residents aged 35–64 years were 54% and 41%, and of residents older than 65 years were 48% and 29%, respectively.

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During implementation of the plan, some residents were unwilling to receive the proactive screening. Some residents answered the symptoms screening questionnaire with symptoms compatible with tuberculosis, but still refused to receive tuberculosis test. The findings showed that the major challenges of tuberculosis prevention in rural aboriginal towns were how to enhance the understanding of disease and screening willingness. We recommend incorporating awareness of tuberculosis into residents' daily life with education resources, and finding out the reasons for screening refusal, in order to improve the effectiveness of proactive screening plan in early case finding and to further decrease the incidence of tuberculosis in rural aboriginal towns.

Keywords: Eliminating health inequality in rural aborigine towns plan, rural aborigine towns, TB prevention, active case finding

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

Case diagnosis year		Week 42★		Week 1-42			
Classification	Disease Diagnosed	2021	2020	2021		2020	
				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	0	1	26	0	25	0
	Acute Viral Hepatitis type A	0	0	55	0	68	8
	Amoebiasis	4	4	162	55	201	110
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	3	3
	Cholera	0	0	0	0	1	0
	Dengue Fever	0	6	9	9	131	65
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	0	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Hantavirus Pulmonary Syndrome	0	0	0	0	0	0
	Hemorrhagic Fever with Renal Syndrome	0	1	9	0	10	0
	Malaria	0	0	1	1	1	1
	Measles	0	0	0	0	2	2
	Meningococcal Meningitis	0	1	3	0	6	0
	Paratyphoid Fever	0	0	2	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
Shigellosis	2	3	102	0	126	21	
Typhoid fever	0	0	1	0	7	3	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	0	0	2	2	
Category III	Acute Viral Hepatitis type B	2	0	102	2	86	2
	Acute Viral Hepatitis type C	9	14	434	0	487	4
	Acute Viral Hepatitis type D	0	0	1	0	0	0
	Acute Viral Hepatitis type E	0	0	5	0	8	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	1	0	7	0
	Haemophilus Influenza type b Infection	0	0	1	0	3	0
	Japanese Encephalitis	0	0	26	0	21	0
	Legionnaires' Disease	2	6	292	0	233	8
	Mumps	5	11	346	1	406	6
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	8	0
Tetanus	0	0	3	0	7	0	
Category IV	Botulism	0	0	0	0	1	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	0	44	0	40	0
	Endemic Typhus Fever	1	2	29	0	18	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	1	0	548	6
	Invasive Pneumococcal Disease	3	5	173	0	201	0
	Leptospirosis	8	2	75	0	71	0
	Listeriosis	0	7	137	0	114	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	2	0	18	0	16	1
	Q Fever	0	0	8	0	12	0
	Scrub Typhus	12	16	241	0	334	1
Toxoplasmosis	0	1	11	0	11	0	
Tularemia	0	0	1	0	0	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	1	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
Severe Pneumonia with Novel Pathogens	31	7	15560	1029	534	479	
Yellow Fever	0	0	0	0	0	0	

- ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
- MDR-TB, Tuberculosis, Syphilis, Gonorrhoea, HIV Infection, AIDS, Hansen's Disease and Creutzfeldt-Jakob Disease are excluded from the table.
- Numbers of mumps and tetanus cases are summed up by the week of report.
- Since 2020/1/15, "Severe Pneumonia with Novel Pathogens" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Eleven clusters related to diarrhea (6) and tuberculosis (5) were reported during week 42.

Imported Infectious Diseases

- There were 28 imported cases from 13 countries during week 42.
Severe Pneumonia with Novel Pathogens : 28 (USA 6, Malaysia 5, the Philippines 3, Indonesia 3, UAE 2, Myanmar 2, Thailand 1, Mongolia 1, Hungary 1, South Africa 1, Cyprus 1, UK 1, Cambodia 1)
- During week 1-42, there were 1099 imported cases from 81 countries. The top three countries are Indonesia (207), the Philippines (193), and USA (168).
- During week 1-42, the three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (1029), Amoebiasis (55), and Dengue Fever (9).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The domestic epidemic of COVID-19 is in the low level. Due to the COVID-19 pandemic remains serious globally, imported cases continue to be confirmed. The risk of locally-acquired of SARS-CoV-2 infection in Taiwan is persistence.

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

Case diagnosis year		Week 43★		Week 1-43			
Classification	Disease Diagnosed	2021	2020	2021		2020	
				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	0	0	26	0	25	0
	Acute Viral Hepatitis type A	6	2	61	0	70	8
	Amoebiasis	4	6	166	55	207	113
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	1	1	3	3
	Cholera	0	0	0	0	1	0
	Dengue Fever	0	1	9	9	132	65
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	0	0	0	0
	Epidemic Typhus Fever	0	0	0	0	0	0
	Hantavirus Pulmonary Syndrome	0	0	0	0	0	0
	Hemorrhagic Fever with Renal Syndrome	0	0	9	0	10	0
	Malaria	0	0	1	1	1	1
	Measles	0	0	0	0	2	2
	Meningococcal Meningitis	0	0	3	0	6	0
	Paratyphoid Fever	0	0	2	0	0	0
	Poliomyelitis	0	0	0	0	0	0
Rubella	0	0	0	0	0	0	
Shigellosis	5	2	107	0	128	21	
Typhoid fever	1	0	2	0	7	3	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	0	0	2	2	
Category III	Acute Viral Hepatitis type B	17	2	119	2	88	2
	Acute Viral Hepatitis type C	34	13	468	0	500	4
	Acute Viral Hepatitis type D	0	0	1	0	0	0
	Acute Viral Hepatitis type E	0	0	5	0	8	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	1	0	7	0
	Haemophilus Influenza type b Infection	0	0	1	0	3	0
	Japanese Encephalitis	1	0	27	0	21	0
	Legionnaires' Disease	6	8	298	0	241	8
	Mumps	4	6	350	1	412	6
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	8	0
Tetanus	0	0	3	0	7	0	
Category IV	Botulism	0	0	0	0	1	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	2	0	46	0	40	0
	Endemic Typhus Fever	1	0	30	0	18	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	1	0	548	6
	Invasive Pneumococcal Disease	2	4	175	0	205	0
	Leptospirosis	0	2	75	0	73	0
	Listeriosis	4	0	141	0	114	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	0	18	0	16	1
	Q Fever	0	0	8	0	12	0
	Scrub Typhus	11	7	252	0	341	1
Toxoplasmosis	0	0	11	0	11	0	
Tularemia	0	0	1	0	0	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	1	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
	Severe Pneumonia with Novel Pathogens	44	15	15604	1071	549	494
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 2020/1/15, "Severe Pneumonia with Novel Pathogens" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Eighteen clusters related to tuberculosis (9), diarrhea (5), upper respiratory tract infection (2) and varicella (2) were reported during week 43.

Imported Infectious Diseases

- There were 42 imported cases from 13 countries during week 43.
Severe Pneumonia with Novel Pathogens : 42 (Indonesia 11, USA 7, Philippines 6, UK 5, Russia 2, Malaysia 2, Thailand 2, Myanmar 1, Spain 1, Kyrgyz 1, Japan 1, Mongolia 1, Vietnam 1, undetermined 1)
- During week 1-43, there were 1141 imported cases from 81 countries. The top three countries are Indonesia (218), the Philippines (199), and USA (175).
- During week 1-43, the three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (1071), Amoebiasis (55), and Dengue Fever (9).

Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The domestic epidemic of COVID-19 is in the low level. Due to the COVID-19 pandemic remains serious globally, imported cases continue to be confirmed. The risk of locally-acquired of SARS-CoV-2 infection in Taiwan is persistence.

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