

A comparison of causal relationship and payment standards in Different Vaccine Injury Compensation Programs

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Abstract

The establishment of Vaccine Injury Compensation Program(VICP) clarifies the causal relationship between vaccine and its probable adverse reactions. Since Germany first established VICP in 1961, other countries also set up the compensation scheme by the government or private institutions subsequently. Each country has its own review regulation according to different policies of vaccination. The process from application to approval of compensation can be divided into three parts: the eligibility of application regarding vaccine types and other relevant conditions of applicants, the causal relationship between vaccination and suspected adverse reaction, and approval of compensation and its contents. Based on similar structure, every country develops its own criteria. We have reviewed the site visit reports regarding VICP from Taiwan Centers for Disease Control from 2007 to 2016, and summarized the issues such as application of vaccinated adverse events, standards of establishing causal relationship, and the payment criteria and contents, and compared programs from other countries with ours. We recommend that the principles and criteria of causality assessment could be explicitly established, and the contents of compensation should be more clarified. In doing so shall we set up an integrated VICP scheme to maintain the balance between individual rights and public benefit.

Keywords: immunization, vaccine injury compensation, causal relationship, payment standard

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

Case diagnosis year		Week 44★		Week 1–44			
Classification	Disease Diagnosed	2018	2017	2018		2017	
				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	1	1	60	0	29	0
	Acute Viral Hepatitis type A	1	1	75	27	347	46
	Amoebiasis	7	5	274	121	300	168
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	6	6	11	11
	Cholera	0	1	7	0	2	1
	Dengue Fever	14	12	433	260	303	293
	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	1	0	1	0
	Malaria	1	0	6	6	7	7
	Measles	0	0	36	9	5	5
	Meningococcal Meningitis	0	0	5	1	11	0
	Paratyphoid Fever	0	0	7	6	5	4
	Poliomyelitis	0	0	0	0	0	0
Rubella	0	0	9	8	3	2	
Shigellosis	5	2	146	48	140	50	
Typhoid fever	0	0	13	10	17	14	
West Nile Fever	0	0	0	0	0	0	
Category III	Acute Viral Hepatitis type B	4	2	125	9	131	7
	Acute Viral Hepatitis type C	20	3	396	3	259	2
	Acute Viral Hepatitis type D	0	0	0	0	1	0
	Acute Viral Hepatitis type E	0	0	6	0	14	3
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	1	1
	Enteroviruses Infection with Severe Complications	0	0	36	0	10	0
	Haemophilus Influenza type b Infection	0	0	5	0	5	0
	Japanese Encephalitis	0	0	36	0	25	0
	Legionellosis	7	7	173	7	143	12
	Mumps	13	12	519	9	559	9
	Neonatal Tetanus	0	0	0	0	0	0
Pertussis	0	2	27	2	33	0	
Tetanus	0	0	5	0	9	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	2	51	0	26	1
	Endemic Typhus Fever	1	0	23	1	33	1
	Herpesvirus B Infection	0	0	0	0	0	0
	Invasive Pneumococcal Disease	4	10	395	0	390	3
	Leptospirosis	4	5	84	1	82	1
	Listeriosis	7	...	146	1
	Lyme Disease	0	0	2	2	1	1
	Melioidosis	0	0	23	1	22	0
	Q Fever	1	0	16	1	16	0
	Scrub Typhus	19	9	318	1	381	0
	Severe Complicated Influenza	6	8	1067	5	1279	7
Toxoplasmosis	0	0	14	1	17	0	
Tularemia	0	0	0	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 Coronavirus	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	0	0	1	1
	Rift Valley Fever	0	0	0	0	0	0
	Yellow Fever	0	0	0	0	0	0
Zika virus infection	0	0	2	2	4	4	

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 Disease and Creutzfeldt-Jakob Disease are excluded from the table.
3. Numbers of mumps, neonatal tetanus and tetanus cases are summed up by the week of report.
4. Since 2016/1/22, "Zika Virus Infection" was listed as a Notifiable Infectious Disease.
5. Since 2018/1/1, "Listeriosis" was listed as a Notifiable Infectious Disease. Symbols "..." means not under surveillance.

Suspected Clusters

- Twenty-two clusters were reported, including 7 tuberculosis clusters, 5 diarrhea clusters, 3 upper respiratory tract infection clusters, 2 influenza-like illness clusters, and 5 varicella clusters.

Imported Infectious Diseases

- There were 22 confirmed imported cases from 11 countries during week 44 of 2018.

Disease \ Country	Indonesia	Vietnam	China	Malaysia	Uganda	Cambodia	Korea	Sri Lanka	Cuba	India	Singapore	Total
DF	2	3		1		1			1	1	1	10
Amoebiasis	5	1					1					7
Legionellosis			1									1
Acute Hepatitis B			1									1
Leptospirosis								1				1
Malaria					1							1
Shigellosis	1											1
Total	8	4	2	1	1	1	1	1	1	1	1	22

Note: The table summarized the number of imported cases that were either **confirmed** or **updated** in the given week.

- There are 539 confirmed imported cases from 30 different countries in 2018. The top 3 countries are Indonesia (166), Philippines (69), and Cambodia (55).
- Top 3 imported diseases are Dengue Fever (260), Amoebiasis (121), and Shigellosis (48).

Summary of Epidemic

- **Dengue Fever:** The risk of indigenous dengue epidemics continues in Taichung; the dengue epidemics are still at its peak or in the midst in some of the nearby Asian countries, the potential risks of imported cases remain in Taiwan.
- **Influenza:** Influenza activity is expected to fluctuate due to large temperature differences between night and day.

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

Case diagnosis year		Week 45★		Week 1–45			
Classification	Disease Diagnosed	2018	2017	2018		2017	
				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	62	0	30	0
	Acute Viral Hepatitis type A	1	2	76	28	349	46
	Amoebiasis	6	4	279	125	304	170
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	6	6	11	11
	Cholera	0	0	7	0	2	1
	Dengue Fever	16	6	449	274	309	299
	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	1	0	1	0
	Malaria	0	0	6	6	7	7
	Measles	0	0	36	9	5	5
	Meningococcal Meningitis	0	0	5	1	11	0
	Paratyphoid Fever	1	0	8	7	5	4
	Poliomyelitis	0	0	0	0	0	0
Rubella	1	0	10	9	3	2	
Shigellosis	1	4	147	48	144	50	
Typhoid fever	0	0	13	10	17	14	
West Nile Fever	0	0	0	0	0	0	
Category III	Acute Viral Hepatitis type B	2	3	127	9	134	8
	Acute Viral Hepatitis type C	9	8	405	3	267	2
	Acute Viral Hepatitis type D	0	0	0	0	1	0
	Acute Viral Hepatitis type E	0	0	6	0	14	3
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	1	1
	Enteroviruses Infection with Severe Complications	0	1	36	0	11	0
	Haemophilus Influenza type b Infection	0	0	5	0	5	0
	Japanese Encephalitis	0	0	36	0	25	0
	Legionellosis	7	5	180	9	148	12
	Mumps	13	7	532	9	566	9
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	1	1	28	2	34	0
Tetanus	0	0	5	0	9	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	0	51	0	26	1
	Endemic Typhus Fever	0	1	23	1	34	1
	Herpesvirus B Infection	0	0	0	0	0	0
	Invasive Pneumococcal Disease	7	9	402	0	399	3
	Leptospirosis	2	3	86	1	85	1
	Listeriosis	0	...	146	1
	Lyme Disease	0	0	2	2	1	1
	Melioidosis	0	1	23	1	23	0
	Q Fever	3	1	19	2	17	0
	Scrub Typhus	3	6	321	1	387	0
	Severe Complicated Influenza	8	8	1075	5	1287	7
Toxoplasmosis	0	0	14	1	17	0	
Tularemia	0	0	0	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 Coronavirus	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	0	0	1	1
	Rift Valley Fever	0	0	0	0	0	0
	Yellow Fever	0	0	0	0	0	0
Zika virus infection	0	0	2	2	4	4	

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 Disease and Creutzfeldt-Jakob Disease are excluded from the table.
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4. Since 2016/1/22, "Zika Virus Infection" was listed as a Notifiable Infectious Disease.
5. Since 2018/1/1, "Listeriosis" was listed as a Notifiable Infectious Disease. Symbols "..." means not under surveillance.

Suspected Clusters

- Twenty-five clusters were reported, including 6 tuberculosis clusters, 8 diarrhea clusters, 2 upper respiratory tract infection clusters, 2 influenza-like illness clusters, 6 varicella clusters, and 1 enterovirus cluster.

Imported Infectious Diseases

- There were 24 confirmed imported cases from 8 countries during week 45 of 2018.

Country \ Disease	Cambodia	Philippines	China	Malaysia	Uganda	Indonesia	Vietnam	Total
DF	2	1		1			1	5
Scrub Typhus		1						1
Legionellosis			1					1
Malaria					1			1
Amoebiasis						1		1
Total	2	2	1	1	1	1	1	9

Note: The table summarized the number of imported cases that were either **confirmed** or **updated** in the given week.

- There are 563 confirmed imported cases from 30 different countries in 2018. The top 3 countries are Indonesia (169), Philippines (69), and Vietnam (60).
- Top 3 imported diseases are Dengue Fever (274), Amoebiasis (125), and Shigellosis (48).

Summary of Epidemic

- **Dengue Fever:** The risk of dengue epidemics has been slowed down in Taichung; however, new cases are expected to occur. The dengue epidemics are still at its peak or in the midst in some of the nearby Asian countries, the potential risks of imported cases remain in Taiwan.
- **Influenza:** Influenza activity is expected to fluctuate due to large temperature differences between night and day.

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