

### Comparison of COVID-19 Vaccine Mandates in OECD Member Countries And Taiwan

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#### Abstract

Vaccination is one of the most effective countermeasures against the COVID-19 pandemic. Nevertheless, a proportion of the people in each society continue to refuse vaccination for reasons other than medical exemption. When the vaccine supply is sufficient enough, the primary ethical concern is then switched from the priority order of vaccinations to what extent the government should implement vaccine mandates to incentivize, urge, or even require these people to be vaccinated. We adopted the intervention ladder framework to compare the practices of mandatory vaccinations in the member countries of Organisation for Economic Co-operation and Development (OECD) by the end of year 2021. We found that the most frequently adopted measurement was the soft disincentive, prominently the requirement of an universally certified vaccination pass at the designated sites. The second frequently adopted one was the strong disincentive, focusing on specific subpopulations according to the risk of transmission or severity if infected. Only a few countries adopted strict punishments, in which refusals might lead to fines, imprisonment, or dismissal from work. No country has adopted coercive vaccination. The mandatory vaccination policy is still evolving along with the dynamic of the COVID-19 pandemic and constantly being challenged by the public and with judicial approaches. The experiences of vaccine mandates in the OECD member countries are summarized in the article and might be informative for policymaking for the health authority in Taiwan.

**Keywords:** Vaccine refusal, vaccine hesitancy, vaccine mandates, intervention ladder, comparative health policy

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Weekly Data of Notifiable Inases (by week of diagnosis)

Case diagnosis year		Week 22★		Week 1–22			
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	0	0	10	0	12	0
	Acute Viral Hepatitis type A	1	3	93	0	34	0
	Amoebiasis	0	3	0	21	94	40
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	0	0	1	1
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	0	2	2	5	5
	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 syndrome	0	0	0	0	6	0
	Malaria	0	0	2	2	1	1
	Measles	0	0	0	0	0	0
	Meningococcal Meningitis	0	0	0	0	2	0
	Paratyphoid Fever	0	0	0	0	2	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
Shigellosis	2	1	37	0	74	0	
Typhoid fever	0	0	1	0	1	0	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	0	0	0	0	
Category III	Acute Viral Hepatitis type B	1	0	45	0	65	2
	Acute Viral Hepatitis type C	4	9	193	1	250	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	6	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	1	0	1	0
	Japanese Encephalitis	0	0	0	0	2	0
	Legionnaires' Disease	10	3	140	1	135	0
	Mumps	3	6	86	0	196	1
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0
Tetanus	0	0	1	0	2	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	0	12	0	25	0
	Endemic Typhus Fever	0	2	5	0	13	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	0	0	1	0
	Invasive Pneumococcal Disease	6	3	77	0	133	0
	Leptospirosis	0	0	15	0	14	0
	Listeriosis	3	8	55	0	86	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	0	0	0	0	0
	Q Fever	0	0	0	0	0	0
	Scrub Typhus	4	14	62	0	96	0
Toxoplasmosis	0	0	12	0	7	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	0	0	0	0	0	0
	Coronavirus Infections	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	0	0	0	0	0
	Rift Valley Fever	0	0	0	0	0	0
Severe Pneumonia with Novel Pathogens	512736	3128	2387761	10749	10111	446	
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.

## Suspected Clusters

- Three clusters related to diarrhea (3) were reported during week 22.

## Imported Infectious Diseases

- There were 310 imported cases from 16 countries during week 22.  
**Severe Pneumonia with Novel Pathogens:** 308 cases from USA 22, Vietnam 15 and the remaining 14 countries have less than 10 cases, 233 unknowns.  
**Amoebiasis:** 2 case, 1 Indonesia, 1 unknown.
- During week 1–22, there were 10777 imported cases from 114 countries. The top three countries are Vietnam (2295), USA (1223), Indonesia (1050).
- During week 1–22, the notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (10749).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens :** Taiwan is in the stage of widespread transmission of COVID-19. The flow of people and gatherings increased during the national holiday, the epidemic is expected to raise. Global COVID-19 cases are similar to previous week, maybe underestimate it. The risk of COVID-19 transmission remains high, and we need to focus on Omicron subvariants activity and impact.

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

Case diagnosis year		Week 23★		Week 1-23			
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	0	1	10	0	13	0
	Acute Viral Hepatitis type A	0	2	93	0	36	0
	Amoebiasis	0	0	0	21	73	40
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	0	0	1	1
	Cholera	0	0	0	0	0	0
	Dengue Fever	0	0	2	2	5	5
	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 syndrome	0	1	0	0	7	0
	Malaria	0	0	2	2	1	1
	Measles	0	0	0	0	0	0
	Meningococcal Meningitis	0	0	0	0	2	0
	Paratyphoid Fever	0	0	0	0	2	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
Shigellosis	1	1	38	0	75	0	
Typhoid fever	0	0	1	0	1	0	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	0	0	0	0	
Category III	Acute Viral Hepatitis type B	1	1	46	0	66	2
	Acute Viral Hepatitis type C	6	6	199	1	256	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	6	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	1	0	1	0
	Japanese Encephalitis	0	2	0	0	4	0
	Legionnaires' Disease	17	5	157	1	140	0
	Mumps	2	6	88	0	202	1
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0
Tetanus	0	0	1	0	2	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	1	2	13	0	27	0
	Endemic Typhus Fever	0	2	5	0	15	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	0	0	0	1	0
	Invasive Pneumococcal Disease	5	2	82	0	135	0
	Leptospirosis	0	0	15	0	14	0
	Listeriosis	5	0	60	0	86	0
	Lyme Disease	0	0	1	1	0	0
	Melioidosis	0	0	0	0	0	0
	Q Fever	0	0	0	0	0	0
	Scrub Typhus	4	9	66	0	105	0
Toxoplasmosis	0	0	12	0	7	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	0	0	0	0	0	0
	Coronavirus Infections	0	0	0	0	0	0
	Novel Influenza A Virus Infections	0	1	0	0	1	0
	Rift Valley Fever	0	0	0	0	0	0
Severe Pneumonia with Novel Pathogens	487626	1818	2875142	11024	11929	455	
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.

## Suspected Clusters

- Six clusters related to diarrhea (3), tuberculosis (3) were reported during week 23.

## Imported Infectious Diseases

- There were 275 imported cases from 20 countries during week 23.  
**Severe Pneumonia with Novel Pathogens:** 275 cases from USA 37, Vietnam 11 and the remaining 18 countries have less than 10 cases, 187 unknowns.
- During week 1–23, there were 11052 imported cases from 115 countries. The top three countries are Vietnam (2307), USA (1263), Indonesia (1052).
- During week 1–23, the notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (11024).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : Taiwan is in the stage of widespread transmission of COVID-19. The growth of the epidemic slowed down slightly at central and southern counties. Global COVID-19 cases are similar to the previous week but maybe underestimated. The risk of COVID-19 transmission remains high, and we need to closely monitor Omicron subvariants activity and impact.

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