

### The Border Controls for COVID-19 Prevention in Macau, 2020

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#### Abstract

Macau is a tiny city with a highly dense population and a high volume of cross-border human flows. Furthermore, Macau borders on mainland China and has a large number of migrant workers. It is essential for Macau to control imported COVID-19 cases. This article described the preventive strategies taken by Macau government in border control. Travelling by air, land and sea between Macau and the outside world was substantially reduced after the controlling measures were complemented quickly and extensively. Although the reported cases of COVID-19 in Macau were mostly imported, the overall infection rate in Macau has remained very low and no community transmissions were detected, showing the effectiveness of the border controls. By comparing with border control measures in Hong Kong and Taiwan, the article further identified the strengths and weaknesses of preventive strategies in Macau to contain imported COVID-19 cases.

**Keywords:** COVID-19, border, imported cases, prevention, Macau

week 45–46(Nov. 1–Nov. 14, 2020)

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

Case diagnosis year		Week 45★		Week 1-45			
Classification	Disease Diagnosed	2020	2019	2020		2019	
				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	27	0	56	1
	Acute Viral Hepatitis type A	1	4	72	8	86	23
	Amoebiasis	3	4	212	114	296	166
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	1	3	3	107	86
	Cholera	0	0	1	0	0	0
	Dengue Fever	3	12	136	66	577	477
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	0	0	1	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	11	0	1	0
	Malaria	0	1	1	1	7	7
	Measles	0	0	2	2	134	54
	Meningococcal Meningitis	0	0	6	0	6	0
	Paratyphoid Fever	0	0	0	0	7	6
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	21	17
Shigellosis	6	2	135	23	121	40	
Typhoid fever	0	0	7	3	23	19	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	2	2	4	4	
Category III	Acute Viral Hepatitis type B	1	3	93	2	96	4
	Acute Viral Hepatitis type C	6	9	520	4	527	3
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	1	8	0	9	4
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	2	7	0	57	1
	Haemophilus Influenza type b Infection	0	0	3	0	1	0
	Japanese Encephalitis	0	0	21	0	21	2
	Legionnaires' Disease	5	4	251	8	231	15
	Mumps	8	4	428	6	521	8
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	8	0	25	0
Tetanus	0	0	7	0	3	0	
Category IV	Botulism	0	0	1	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	1	40	0	55	1
	Endemic Typhus Fever	1	2	19	0	28	3
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	16	548	6	1973	8
	Invasive Pneumococcal Disease	3	9	210	0	374	2
	Leptospirosis	1	1	76	0	108	1
	Listeriosis	6	2	121	0	158	1
	Lyme Disease	0	0	0	0	1	1
	Melioidosis	0	0	16	1	43	1
	Q Fever	1	0	13	0	22	5
	Scrub Typhus	10	11	359	1	415	5
Toxoplasmosis	1	0	13	0	13	2	
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	18	-	573	518	-	-	
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

- Thirty-nine clusters related to diarrhea (23), tuberculosis (10), upper respiratory tract infection (4), and varicella (2) were reported during week 45.

## Imported Infectious Diseases

- There were 21 imported cases from 11 countries during week 45.

Diseases	Countries											
	Indonesia	Philippines	Mexico	UK	Germany	USA	Poland	Czech	France	India	Vietnam	Total
Severe Pneumonia with Novel Pathogens	8	2	1	1	1	1	1	1	1	1		18
Shigellosis	2											2
Dengue Fever											1	1
Total	10	2	1	1	1	1	1	1	1	1	1	21

- As of week 45, there were 762 imported cases from 53 countries. The top three countries are Indonesia (176), USA (101), and Philippines (92).
- The three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (518), Amoebiasis (114), and Dengue Fever (66).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The COVID-19 pandemic is still critical, and risks of importation and local transmission persist.
- **Dengue Fever** : The new cases might continue to occur. The risk of infection in the community continue.
- **Influenza-like illness** : The epidemic status increase gradually because the temperature is fluctuating.
- **Enterovirus** : The epidemic status increase, but still below the national baseline.

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

Case diagnosis year		Week 46★		Week 1-46			
Classification	Disease Diagnosed	2020	2019	2020		2019	
				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	2	27	0	58	1
	Acute Viral Hepatitis type A	0	1	72	8	87	23
	Amoebiasis	7	8	219	115	304	172
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	2	3	3	109	88
	Cholera	0	0	1	0	0	0
	Dengue Fever	1	13	137	67	590	490
	Diphtheria	0	0	0	0	0	0
	Enterohemorrhagic E. coli Infection	0	0	0	0	1	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	11	0	1	0
	Malaria	0	0	1	1	7	7
	Measles	0	0	2	2	134	54
	Meningococcal Meningitis	0	0	6	0	6	0
	Paratyphoid Fever	0	0	0	0	7	6
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	1	0	0	22	17
Shigellosis	3	0	138	24	121	40	
Typhoid fever	0	0	7	3	23	19	
West Nile Fever	0	0	0	0	0	0	
Zika virus infection	0	0	2	2	4	4	
Category III	Acute Viral Hepatitis type B	5	3	98	2	99	4
	Acute Viral Hepatitis type C	13	11	533	4	538	3
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	8	0	9	4
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	0	7	0	57	1
	Haemophilus Influenza type b Infection	1	0	4	0	1	0
	Japanese Encephalitis	0	0	21	0	21	2
	Legionnaires' Disease	6	5	257	8	236	15
	Mumps	13	17	441	6	538	8
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	8	0	25	0
Tetanus	0	1	7	0	4	1	
Category IV	Botulism	0	0	1	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	8	2	48	0	57	1
	Endemic Typhus Fever	0	0	19	0	28	3
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complications	0	17	548	6	1990	8
	Invasive Pneumococcal Disease	2	6	212	0	380	2
	Leptospirosis	2	3	78	0	111	1
	Listeriosis	0	1	121	0	159	1
	Lyme Disease	0	0	0	0	1	1
	Melioidosis	0	0	16	1	43	1
	Q Fever	0	0	13	0	22	5
	Scrub Typhus	11	7	370	1	422	5
Toxoplasmosis	1	0	14	0	13	2	
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	27	-	600	545	-	-	
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

- Thirty-four clusters related to diarrhea (19), tuberculosis (7), upper respiratory tract infection (5), and varicella (3) were reported during week 46.

## Imported Infectious Diseases

- There were 30 imported cases from 6 countries during week 46.

Diseases \ Countries	Indonesia	Philippines	Poland	Ukraine	Croatia	Belgium	Total
Severe Pneumonia with Novel Pathogens	15	8	1	1	1	1	27
Shigellosis	1						1
Dengue Fever	1						1
Amoebiasis	1						1
Total	18	8	1	1	1	1	30

- As of week 46, there were 792 imported cases from 54 countries. The top three countries are Indonesia (194), USA (101), and Philippines (100).
- The three notifiable diseases with the highest number of imported cases are Severe Pneumonia with Novel Pathogens (545), Amoebiasis (115), and Dengue Fever (67).

## Summary of Epidemic

- **Severe Pneumonia with Novel Pathogens** : The COVID-19 pandemic is still critical, and risks of importation and local transmission persist.
- **Dengue Fever** : The new cases might continue to occur. The risk of infection in the community continue.
- **Influenza-like illness** : The epidemic status increase gradually because the temperature is fluctuating.
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