

The Analysis of Online Polls And Telephone Polls on Policies in Infectious Diseases Control by Taiwan Centers for Disease Control, 2015–2017

Jhih-Hong Liou*, Mei-Chen Peng

Abstract

To catch up the latest opinion from the public, each governmental unit has implemented various channels to obtain information such as Director's emailing address, opinion poll and so on. Since the result of the opinion poll has better systemic and scientific evidence in comparison with other survey methods, it has been widely used in recent years. The Taiwan Centers for Disease Control (TCDC) has contracted with survey firms to conduct telephone polls for many years. Nevertheless, in consideration of high rate of internet users, the TCDC has set up a polling place on the website to obtain real time public opinion.

We analyzed the difference between online polls and telephone polls from August 2015 to June 2017. In this period, we conducted 24 online polls and 10 telephone polls. The sample sizes (person-times) of various topics from the online polls were between 1,229 and 3,559 in 2015, 308 and 4,019 in 2016, and 170 and 2,186 in 2017, respectively. With 95% confidence interval and the sampling error less than 3%, and the effective sample size for telephone poll was at least 1,068. In addition, we found significant differences between online polls and telephone polls with the same topic.

Online polls are not random sampling, and have limitations on self-selection as well as limited sample size and representativeness. Accordingly, conducting statistical inferences based on online polls needs to be careful. We recommend that conducting traditional telephone polls is preferable if precise results are needed. If the budget is enough, the government should combine various survey methods for raising coverage and accuracy in polling results.

Keywords: Infectious diseases control, online poll, telephone poll

Public Relations Office, Centers for Disease Control,
Ministry of Health and Welfare, Taiwan
Corresponding author: Jhih-Hong Liou*
E-mail: asso9514@cdc.gov.tw

Received: Aug. 16, 2018
Accepted: Aug. 26, 2019
DOI: 10.6525/TEB.202002_36(3).0001

Knowledge, Attitudes And Practices of Tour Operators Toward Travel-Related Infectious Diseases, Taiwan, 2017

Yung-Ching Lin*, Yu-Wei Chang, Li-Gin Wu,
Ji-Jia Huang, Li-Li Ho, Yi-Chun Wu

Abstract

As the number of international travelers increases, prevention of travel-related infectious diseases becomes more important. Because tour operators play a critical role in arranging itineraries of Taiwanese travelers, we investigated their knowledge, attitudes and practices regarding travel-related infectious diseases, and analyzed affecting factors, in order to provide references for formulating relevant strategies.

We interviewed tour operators participating in conferences held by the Association of Tour Managers using questionnaires, collecting their basic information, knowledge, attitudes and practices regarding travel-related infectious diseases.

Based on 179 valid questionnaires, we found that those aged 40–49 years had better knowledge compared with those aged above 60 years, and full-time tour managers had better knowledge than non-tour guides or managers. Those aged 50–59 years had more positive attitudes towards travel health issues compared with those aged 20–39 years, and those having 2–5 years of working experience had more positive attitudes than those with more than 5 years of working experience. Respondents' information on international epidemics were mainly from official website of Taiwan Centers for Disease Control and travel medicine clinics, but those aged above 60 years obtained such information mainly from the Tourism Bureau. Only about 80% respondents had suggested travelers to consult travel medicine clinics before travel. Those aged 40–49 and 50–59 years were less likely to do so.

Age groups, being tour guides, managers or not, and working experience significantly affected knowledge, attitudes and practices regarding travel-related infectious diseases. Different information sources could lead to gaps in knowledge, attitudes and practices among different sub-groups. We recommended that appropriate health education strategies should be adopted according to different sub-groups, so that the knowledge, attitudes and practices regarding travel-related infectious diseases among tour operators could be promoted effectively.

Keywords: Travel medicine, tour operators, infectious diseases., knowledge, attitude and practice

Division of Quarantine, Centers for Disease Control,
Ministry of Health and Welfare, Taiwan
Corresponding author: Yung-Ching Lin*
E-mail: yclin@cdc.gov.tw

Received: Oct. 24, 2018
Accepted: Sep. 23, 2019
DOI: 10.6525/TEB.202002_36(3).0002

week 3–5(Jan.12–Feb.1, 2020)

DOI: 10.6525/TEB.202002_36(3).0003

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

Case diagnosis year		Week 3★		Week 1–3			
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
	Acute Flaccid Paralysis	0	2	1	0	3	0
Category II	Acute Viral Hepatitis type A	1	3	6	0	3	1
	Amoebiasis	2	9	15	5	15	8
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	0	0	0	0
	Cholera	0	0	0	0	0	0
	Dengue Fever	4	10	20	20	29	29
	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	2	0	2	0	0	0
	Malaria	0	0	0	0	1	1
	Measles	0	4	2	2	5	5
	Meningococcal Meningitis	1	0	2	0	1	0
	Paratyphoid Fever	0	0	0	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	1	1	11	3	3	0
	Typhoid fever	0	0	0	0	3	3
	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	2	6	1	8	0
	Acute Viral Hepatitis type C	14	7	42	0	37	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	1	0	3	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	2	0	2	0	0	0
	Haemophilus Influenza type b Infection	0	0	0	0	0	0
	Japanese Encephalitis	0	0	0	0	0	0
	Legionnaires' Disease	7	5	22	2	19	1
	Mumps	7	15	28	1	35	0
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	0	4	0	0	0
	Tetanus	0	0	0	0	0	0
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	2	4	6	0	5	0
	Endemic Typhus Fever	0	0	0	0	0	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complication	92	54	289	4	128	0
	Invasive Pneumococcal Disease	14	10	48	0	38	0
	Leptospirosis	2	1	2	0	4	0
	Listeriosis	1	0	2	0	5	0
	Lyme Disease	0	0	0	0	0	0
	Melioidosis	0	0	0	0	0	0
	Q Fever	0	0	0	0	0	0
	Scrub Typhus	9	7	22	1	29	0
Toxoplasmosis	0	0	0	0	0	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	
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 2018/1/1, "Listeriosis" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Thirty-four clusters were reported during week 3, including 4 tuberculosis clusters, 12 diarrhea clusters, 3 upper respiratory tract infection clusters, 12 influenza-like illness clusters, 3 varicella clusters.

Imported Infectious Diseases

- There were 10 imported cases from 6 countries during week 3 of 2020.

Diseases \ Countries	Indonesia	Vietnam	Philippines	Thailand	Hong Kong	Cambodia	Total
Dengue Fever		1	1	1		1	4
Amoebiasis	3						3
Acute Hepatitis B					1		1
Measles			1				1
Influenza Case with Severe Complications		1					1
Total	3	2	2	1	1	1	10

- There are 38 imported cases from 10 different countries in 2020. The top 3 countries are Indonesia (9), Vietnam (7), Philippines (7).
- Top 3 imported diseases are Dengue Fever (20), Amoebiasis (5), Influenza Case with Severe Complications (4).

Summary of Epidemic

- **Influenza** : Influenza activity remains elevated. Because some of the outpatient services will be closed for Lunar New Year holiday, the number of medical visits in emergency room is expected to increase.

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

Case diagnosis year		Week 4★		Week 1-4			
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	3	2	0	6	0
	Acute Viral Hepatitis type A	4	2	10	0	5	2
	Amoebiasis	4	8	19	8	23	13
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	0	0	0	0	0	0
	Cholera	0	0	0	0	0	0
	Dengue Fever	6	5	26	26	34	34
	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	2	0	0	0
	Malaria	1	0	1	1	1	1
	Measles	0	2	2	2	7	6
	Meningococcal Meningitis	0	1	2	0	2	0
	Paratyphoid Fever	0	0	0	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	2	3	13	3	6	1
	Typhoid fever	0	0	0	0	3	3
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	2	7	8	1	15	0
	Acute Viral Hepatitis type C	10	9	52	0	46	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	0	0	1	0	3	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	0	1	2	0	1	1
	Haemophilus Influenza type b Infection	0	0	0	0	0	0
	Japanese Encephalitis	0	0	0	0	0	0
	Legionnaires' Disease	2	2	24	2	21	2
	Mumps	11	10	39	1	45	0
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	2	4	0	2	0
Tetanus	0	0	0	0	0	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	3	6	0	8	0
	Endemic Typhus Fever	0	0	0	0	0	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complication	63	57	352	6	185	0
	Invasive Pneumococcal Disease	13	17	61	0	55	0
	Leptospirosis	0	3	2	0	7	0
	Listeriosis	4	6	6	0	11	0
	Lyme Disease	0	0	0	0	0	0
	Melioidosis	1	0	1	1	0	0
	Q Fever	0	1	0	0	1	0
	Scrub Typhus	1	15	23	1	44	0
	Toxoplasmosis	0	0	0	0	0	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	
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 2018/1/1, "Listeriosis" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Twenty-four clusters were reported during week 4, including 5 tuberculosis clusters, 13 diarrhea clusters, 2 upper respiratory tract infection clusters, 2 influenza-like illness clusters, 2 varicella clusters.

Imported Infectious Diseases

- There were 13 imported cases from 6 countries during week 4 of 2020.

Diseases	Countries						Total
	Vietnam	Indonesia	Philippines	Canada	China	Malaysia	
Dengue Fever	3	1	2				6
Amoebiasis		3					3
Influenza Case with Severe Complications				1	1		2
Melioidosis	1						1
Malaria						1	1
Total	4	4	2	1	1	1	13

- There are 51 imported cases from 12 different countries in 2020. The top 3 countries are Indonesia (13), Vietnam (11), Philippines (9).
- Top 3 imported diseases are Dengue Fever (26), Amoebiasis (8), Influenza Case with Severe Complications (6).

Summary of Epidemic

- **Influenza** : Influenza activity remains elevated. Because the temperature drops, the epidemic is expected to increase.

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

Case diagnosis year		Week 5★		Week 1-5			
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
	Acute Flaccid Paralysis	0	2	2	0	8	0
Category II	Acute Viral Hepatitis type A	2	1	12	1	6	2
	Amoebiasis	3	5	22	10	28	16
	Anthrax	0	0	0	0	0	0
	Chikungunya Fever	1	0	1	1	0	0
	Cholera	0	0	0	0	0	0
	Dengue Fever	2	8	28	28	42	42
	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	2	0	0	0
	Malaria	0	0	1	1	1	1
	Measles	0	3	2	2	10	7
	Meningococcal Meningitis	1	0	3	0	2	0
	Paratyphoid Fever	0	0	0	0	0	0
	Poliomyelitis	0	0	0	0	0	0
	Rubella	0	0	0	0	0	0
	Shigellosis	1	5	14	3	11	5
	Typhoid fever	0	0	0	0	3	3
	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	9	1	15	0
	Acute Viral Hepatitis type C	8	13	60	0	59	0
	Acute Viral Hepatitis type D	0	0	0	0	0	0
	Acute Viral Hepatitis type E	2	1	3	0	4	0
	Congenital Syphilis	0	0	0	0	0	0
	Congenital Rubella Syndrome	0	0	0	0	0	0
	Enteroviruses Infection with Severe Complications	1	2	3	0	3	1
	Haemophilus Influenza type b Infection	0	0	0	0	0	0
	Japanese Encephalitis	0	0	0	0	0	0
	Legionnaires' Disease	5	9	29	2	30	3
	Mumps	7	8	46	1	53	0
	Neonatal Tetanus	0	0	0	0	0	0
	Pertussis	0	1	4	0	3	0
Tetanus	0	0	0	0	0	0	
Category IV	Botulism	0	0	0	0	0	0
	Brucellosis	0	0	0	0	0	0
	Complicated Varicella	0	1	6	0	9	0
	Endemic Typhus Fever	0	0	0	0	0	0
	Herpesvirus B Infection	0	0	0	0	0	0
	Influenza Case with Severe Complication	81	65	432	6	250	0
	Invasive Pneumococcal Disease	15	16	76	0	71	0
	Leptospirosis	3	3	5	0	10	0
	Listeriosis	0	6	6	0	17	0
	Lyme Disease	0	0	0	0	0	0
	Melioidosis	0	0	1	1	0	0
	Q Fever	0	0	0	0	1	0
	Scrub Typhus	0	5	23	1	49	0
Toxoplasmosis	0	0	0	0	0	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
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 2018/1/1, "Listeriosis" was listed as a Notifiable Infectious Disease.

Suspected Clusters

- Twenty clusters were reported during week 5, including 16 diarrhea clusters, 2 upper respiratory tract infection clusters, 2 influenza-like illness clusters.

Imported Infectious Diseases

- There were 7 imported cases from 4 countries during week 5 of 2020.

Diseases	Countries				Total
	Indonesia	Philippines	Morocco	Malaysia	
Amoebiasis	2	1			3
Dengue Fever	1	1			2
Acute Hepatitis A			1		1
Chikungunya Fever				1	1
Total	3	2	1	1	7

- There are 57 imported cases from 13 different countries in 2020. The top 3 countries are Indonesia (15), Vietnam (11), Philippines (11).
- Top 3 imported diseases are Dengue Fever (28), Amoebiasis (10), Influenza Case with Severe Complications (6).

Summary of Epidemic

- **Influenza** : Influenza activity remains elevated.

The Taiwan Epidemiology Bulletin series of publications is published by Centers for Disease Control, Ministry of Health and Welfare, Taiwan (R.O.C.) since Dec. 15, 1984.

Publisher: Jih-Haw Chou

Editor-in-Chief: Yung-Ching Lin

Executive Editor: Hsueh-Ju Chen, Hsin-Lun Lee

Address: No.6, Linsen S. Rd, Jhongjheng District, Taipei City 10050, Taiwan (R.O.C.)

Telephone No: +886-2-2395-9825

Website: <https://www.cdc.gov.tw/En>

Suggested Citation:

[Author].[Article title].Taiwan Epidemiol Bull 2020;36:[inclusive page numbers]. [DOI]