

HIGHLIGHTS

Assessment of population immunity gap to poliovirus type 2

Viet Nam is one of the countries that were unable to introduce IPV into their vaccination schedule due to global shortage of vaccine supply. To assess population immunity gap to poliovirus type 2 following withdrawal of type 2 containing vaccine the Ministry of Health requested support from the WHO in organization and implementation of the seroprevalence survey. The first phase of the survey started on 24 January in Phu Tho province and will finish on 2 February 2018 in Binh Phuoc.

The findings of this study will provide additional guidance to the countries affected by current IPV shortage in planning potential IPV catch-up campaigns and will facilitate evaluation of the risk of poliovirus type 2 outbreak in case of VDPV 2 emergence or accidental laboratory release of type 2 wild poliovirus.

The country should consider using fIPV in routine immunization or at least for catch up campaign. This may significantly increase country's capacity to fill population immunity gaps to type 2 poliovirus.



WHO/M. Iijima

CONTACT US

Expanded Programme on Immunization
Regional Office for the Western Pacific
World Health Organization
P.O. Box 2932, 1000 Manila, Philippines
Phone: +63 2 5288001
Fax: +63 2 5211036, 5260279
Email: wproepidata@who.int
Web: www.wpro.who.int/immunization

Chart 1. Non-polio AFP rate (per 100 000 persons < 15 years of age), 2015–2017

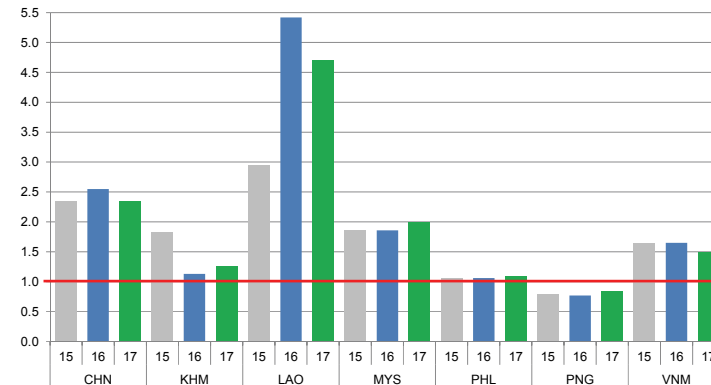


Chart 2. Adequate specimen collection rate, 2015–2017

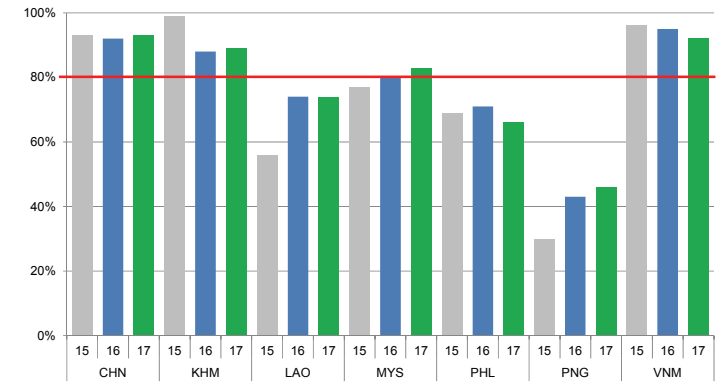


Chart 3. Percentage of reported AFP cases by number of polio vaccination doses, 2017

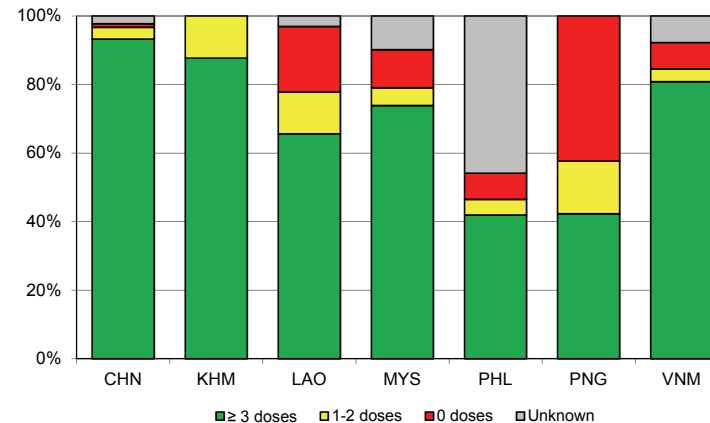
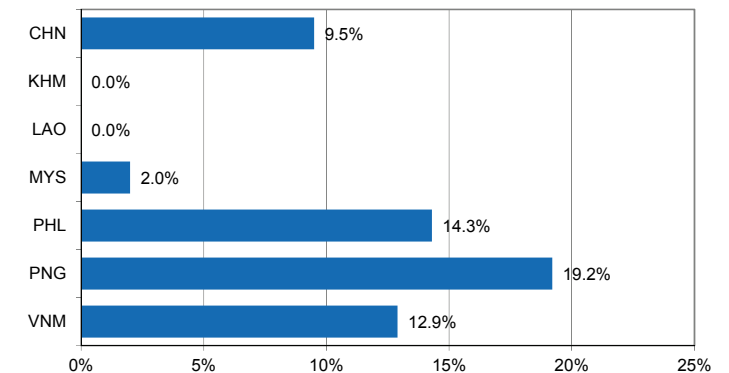


Chart 4. Percentage of reported AFP cases with pending classification > 90 days after onset, 2017



Note: Priority countries were selected for the charts. Official WHO acronyms have been used for abbreviation: CHN (China), KHM (Cambodia), LAO (Lao People's Democratic Republic), MYS (Malaysia), PHL (Philippines), PNG (Papua New Guinea), and VNM (Viet Nam).

Table 1A. Classification of AFP cases with onset in 2017 and key surveillance indicators

Country/area	2016		2017											
	Total reported cases	Annual expected cases <15 years of age	Total reported cases	Classification						Indicators			Latest report date	Days since last report ⁴
				Confirmed wild poliovirus	Vaccine-derived poliovirus (VDPV)	Polio-compatible	Discarded (Non-polio)	Pending		Non-polio AFP rate	% with adequate specimens ²	% investigated ≤ 2 days of notification ³		
								Total	> 90 days ¹ # (%)					
≥ 1	≥ 80%	≥ 80%	≤ 30											
Australia	62	45	55	0	0	1	41	13	2 (3.6%)	1.22	42%	96%	12-Jan-18	17
Brunei Darussalam	1	1	1	0	0	0	1	0	0 (0.0%)	1.00	0%	100%	09-Jan-18	20
Cambodia	51	45	57	0	0	0	56	1	0 (0.0%)	1.27	89%	95%	16-Jan-18	13
China	5691	2256	5312	0	2	0	3970	1340	504 (9.5%)	2.35	93%	100%	24-Jan-18	5
China, Hong Kong SAR	10	8	15	0	0	0	14	1	0 (0.0%)	1.88	80%	100%	09-Jan-18	20
China, Macao SAR	1	1	2	0	0	0	2	0	0 (0.0%)	2.00	50%	100%	18-Jan-18	11
Japan	-	161	-	-	-	-	-	-	-	-	-	-	-	-
Lao People's Democratic Republic	133	21	99	0	0	0	82	17	0 (0.0%)	4.71	74%	74%	04-Jan-18	25
Malaysia	143	77	153	0	0	0	136	17	3 (2.0%)	1.99	83%	80%	22-Jan-18	7
Mongolia	7	9	6	0	0	0	6	0	0 (0.0%)	0.67	83%	100%	11-Jan-18	18
New Zealand	12	9	13	0	0	0	6	7	6 (46.2%)	1.44	38%	100%	08-Jan-18	21
Papua New Guinea	23	31	26	0	0	0	20	6	5 (19.2%)	0.84	46%	100%	08-Jan-18	21
Philippines	417	400	434	0	0	0	364	70	62 (14.3%)	1.09	66%	97%	19-Jan-18	10
Republic of Korea	70	68	59	0	0	0	51	8	0 (0.0%)	0.87	93%	100%	11-Jan-18	18
Singapore	7	6	6	0	0	0	6	0	0 (0.0%)	1.00	100%	100%	10-Jan-18	19
Viet Nam	382	234	350	0	0	0	226	124	45 (12.9%)	1.50	92%	89%	21-Dec-17	39
Pacific island countries and areas	20	11	16	0	0	0	13	3	1 (6.3%)	1.45	63%	100%	12-Jan-18	17
Total	7030	3383	6604	0	2	1	4994	1607	628 (9.5%)	1.95	90%	98%		

1. Number (%) of reported cases pending classification more than 90 days from date of onset of paralysis to date of last report
2. Percentage of reported cases with two stool specimens collected 24 hours apart and within 14 days of onset of paralysis
3. Percentage of reported cases investigated within two days of notification
4. Countries are expected to submit data at least once per month to WPRO

	Reached or surpass target
	Nearly reached target 0.5-0.99 for non-polio AFP rate; 60-79% for other indicators
	Substantially below target

Table 1B. Classification of AFP cases with onset in 2018 and key surveillance indicators

Country/area	2017	2018												
	Total reported cases	Annual expected cases <15 years of age	Total reported cases	Classification						Indicators			Latest report date	Days since last report ⁴
				Confirmed wild poliovirus	Vaccine-derived poliovirus (VDPV)	Polio-compatible	Discarded (Non-polio)	Pending		Non-polio AFP rate	% with adequate specimens ²	% investigated ≤ 2 days of notification ³		
								Total	> 90 days ¹ # (%)					≥ 1
Australia	55	46	2	0	0	0	0	2	1 (50.0%)	0.45	50%	100%	12-Jan-18	17
Brunei Darrusalam	1	1	0	-	-	-	-	-	-	-	-	-	09-Jan-18	20
Cambodia	57	45	2	0	0	0	0	2	0 (0.0%)	0.46	100%	50%	22-Jan-18	7
China	5312	2256	0	-	-	-	-	-	-	-	-	-	24-Jan-18	5
China, Hong Kong SAR	15	8	0	-	-	-	-	-	-	-	-	-	09-Jan-18	20
China, Macao SAR	2	1	0	-	-	-	-	-	-	-	-	-	18-Jan-18	11
Japan	-	161	-	-	-	-	-	-	-	-	-	-	-	-
Lao People's Democratic Republic	99	21	0	-	-	-	-	-	-	-	-	-	04-Jan-18	25
Malaysia	153	77	1	0	0	0	0	1	0 (0.0%)	0.14	0%	0%	22-Jan-18	7
Mongolia	6	9	0	-	-	-	-	-	-	-	-	-	11-Jan-18	18
New Zealand	13	9	0	-	-	-	-	-	-	-	-	-	08-Jan-18	21
Papua New Guinea	26	31	0	-	-	-	-	-	-	-	-	-	08-Jan-18	21
Philippines	434	400	0	-	-	-	-	-	-	-	-	-	19-Jan-18	10
Republic of Korea	59	68	0	-	-	-	-	-	-	-	-	-	11-Jan-18	18
Singapore	6	6	0	-	-	-	-	-	-	-	-	-	10-Jan-18	19
Viet Nam	350	234	0	-	-	-	-	-	-	-	-	-	21-Dec-17	39
Pacific island countries and areas	16	11	0	-	-	-	-	-	-	-	-	-	12-Jan-18	17
Total	6604	3384	5	0	0	0	0	5	1 (20.0%)	0.02	60%	60%		

1. Number (%) of reported cases pending classification more than 90 days from date of onset of paralysis to date of last report
2. Percentage of reported cases with two stool specimens collected 24 hours apart and within 14 days of onset of paralysis
3. Percentage of reported cases investigated within two days of notification
4. Countries are expected to submit data at least once per month to WPRO

	Reached or surpass target
	Nearly reached target 0.5-0.99 for non-polio AFP rate; 60-79% for other indicators
	Substantially below target

Table 2A. Laboratory investigation of stool samples from AFP cases with onset in 2017 and key laboratory indicators

Country/area	Polo laboratory	Total no. of AFP cases with specimens	Results of virus isolation for AFP cases										Intratyptic differentiation/ Sequencing laboratory ¹	No. of isolates received	Results of intratyptic differentiation (ITD)/sequencing for virus isolates												
			L20B positive	L20B positive + NPEV	NPEV only	Negative	Pending ≤ 14 days	Pending > 14 days	% results reported ≤ 14 days	% specimens positive for NPEV	Latest report date	Type 1			Type 2			Type 3			NPEV ²	Pending ITD	Discordant pending sequencing	% ITD results reported ≤ 7 days of receipt			
												Wild			Sabin	VDPV	Wild	Sabin	VDPV	Wild					Sabin	VDPV	
Australia	VIDRL	44	0	0	4	38	1	1	95%	11%	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brunei Darussalam	VIDRL	0	-	-	-	-	-	-	-	-	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	NIID	57	0	0	6	51	0	0	96%	9%	26-Jan-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China (total)		5243	45	0	342	4761	1	94	96%	6%	24-Jan-18		117	0	38	0	0	0	0	61	10	8	0	0	0	100%	
China, Anhui	Prov. Lab	318	3	0	14	300	0	1	100%	3%		Prov. Lab/CCDC	8	0	6	0	0	0	0	2	0	0	0	0	0	100%	
China, Beijing	Prov. Lab	35	1	0	0	32	0	2	97%	0%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	0	100%	
China, Chongqing	Prov. Lab	78	0	0	2	74	0	2	92%	2%		Prov. Lab/CCDC	4	0	0	0	0	0	0	2	0	2	0	0	0	100%	
China, Fujian	Prov. Lab	175	1	0	10	164	0	0	95%	5%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	0	100%	
China, Gansu	Prov. Lab	104	0	0	4	99	0	1	99%	3%		Prov. Lab/CCDC	2	0	0	0	0	0	0	0	0	2	0	0	0	100%	
China, Guangdong	Prov. Lab	390	4	0	33	351	0	2	95%	7%		Prov. Lab/CCDC	12	0	6	0	0	0	0	6	0	0	0	0	0	100%	
China, Guangxi	Prov. Lab	264	5	0	33	226	0	0	97%	11%		Prov. Lab/CCDC	10	0	4	0	0	0	0	6	0	0	0	0	0	100%	
China, Guizhou	Prov. Lab	194	0	0	14	180	0	0	97%	7%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hebei	Prov. Lab	278	4	0	27	247	0	0	99%	7%		Prov. Lab/CCDC	7	0	4	0	0	0	0	3	0	0	0	0	0	0	100%
China, Heilongjiang	Prov. Lab	104	0	0	5	98	0	1	100%	5%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Henan	Prov. Lab	505	8	0	57	437	0	3	91%	9%		Prov. Lab/CCDC	21	0	2	0	0	0	0	14	1	4	0	0	0	100%	
China, Hubei	Prov. Lab	192	0	0	21	167	0	4	97%	10%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hunan	Prov. Lab	262	1	0	18	241	0	2	99%	6%		Prov. Lab/CCDC	4	0	3	0	0	0	0	1	0	0	0	0	0	100%	
China, Jiangsu	Prov. Lab	226	4	0	3	214	0	5	100%	1%		Prov. Lab/CCDC	8	0	2	0	0	0	0	6	0	0	0	0	0	100%	
China, Jiangxi	Prov. Lab	160	1	0	15	143	0	1	95%	8%		Prov. Lab/CCDC	3	0	0	0	0	0	0	3	0	0	0	0	0	100%	
China, Jilin	Prov. Lab	56	0	0	6	50	0	0	100%	9%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Neimongol	Prov. Lab	101	2	0	1	98	0	0	99%	0%		Prov. Lab/CCDC	5	0	3	0	0	0	0	2	0	0	0	0	0	100%	
China, Ningxia	Prov. Lab	23	0	0	2	21	0	0	96%	9%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shaanxi	Prov. Lab	107	1	0	2	93	0	11	91%	2%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	0	100%	
China, Shandong	Prov. Lab	359	5	0	9	343	1	1	95%	2%		Prov. Lab/CCDC	17	0	1	0	0	0	0	7	9	0	0	0	0	100%	
China, Shanghai	Prov. Lab	37	0	0	0	37	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanxi	Prov. Lab	171	0	0	6	165	0	0	94%	3%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Sichuan	Prov. Lab	362	0	0	19	302	0	41	96%	5%		Prov. Lab/CCDC	2	0	2	0	0	0	0	0	0	0	0	0	0	100%	
China, Tianjin	Prov. Lab	30	0	0	0	30	0	0	98%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Xinjiang	Prov. Lab	145	3	0	10	130	0	2	93%	7%		Prov. Lab/CCDC	8	0	5	0	0	0	0	3	0	0	0	0	0	100%	
China, Yunnan	Prov. Lab	244	1	0	17	222	0	4	94%	6%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	0	100%	
China, Zhejiang	Prov. Lab	170	1	0	7	162	0	0	99%	4%		Prov. Lab/CCDC	2	0	0	0	0	0	0	2	0	0	0	0	0	100%	
China, Hainan	Prov. Lab	29	0	0	3	26	0	0	93%	9%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Liaoning	Prov. Lab	95	0	0	3	84	0	8	99%	2%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Qinghai	Prov. Lab	21	0	0	1	20	0	0	100%	5%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tibet	Prov. Lab	8	0	0	0	5	0	3	40%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hong Kong SAR	PHLC	15	0	0	0	15	0	0	98%	0%	22-Jan-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Macao SAR	PHLC	2	0	0	0	2	0	0	100%	0%	22-Jan-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	NIID	-	-	-	-	-	-	-	-	-	-	NIID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lao People's Democratic Republic	NIID	144	1	1	15	127	0	0	96%	10%	29-Jan-18	NIID	4	0	0	0	0	0	0	2	0	2	0	0	0	100%	
Malaysia	IMR	176	0	0	9	167	0	0	98%	5%	08-Jan-18	IMR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mongolia	PHI	6	0	0	0	6	0	0	100%	0%	26-Jan-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand	IESR	9	0	0	0	9	0	0	100%	0%	23-Jan-18	IESR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Papua New Guinea	VIDRL	26	0	0	8	18	0	0	100%	22%	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Philippines	RITM	463	6	0	26	425	6	0	98%	4%	10-Jan-18	RITM	15	0	4	0	0	0	0	11	0	0	0	0	0	100%	
Republic of Korea	NIH	59	0	0	4	54	1	0	98%	4%	11-Jan-18	NIH	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Singapore	SGH	7	0	0	0	6	0	1	100%	0%	26-Jan-18	SGH	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Viet Nam (North)	NIHE	177	1	0	29	147	0	0	100%	14%	25-Jan-18	NIHE	2	0	0	0	0	0	0	2	0	0	0	0	0	100%	
Viet Nam (South)	PI	191	0	0	33	156	0	2	100%	17%	23-Jan-18	PI	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pacific island countries and areas	VIDRL	16	0	0	5	11	0	0	100%	26%	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total		6635	53	1	481	5993	9	98	95%	6%			138	0	42	0	0	0	0	76	10	10	0	0	0	100%	

1. CCDC (Chinese Center for Disease Control and Prevention, China); IESR (Institute of Environmental Science and Research, New Zealand); IMR (Institute of Medical Research, Malaysia); NIH (National Institute of Health, Republic of Korea); NIHE (National Institute of Hygiene and Epidemiology, Ha Noi, Viet Nam); NIID (National Institute of Infectious Diseases, Japan); PHI (Public Health Institute, Mongolia); PHLC (Public Health Laboratory Center, China, Hong Kong SAR); PI (Pasteur Institute, Ho Chi Minh, Viet Nam); RITM (Research Institute for Tropical Medicine, Philippines); SGH (Singapore General Hospital); VIDRL (Victorian Infectious Diseases Reference Laboratory, Australia)

2. NPEV growing in L20B cells

Table 2B. Laboratory investigation of stool samples from AFP cases with onset in 2018 and key laboratory indicators

Country/area	Polio laboratory	Total no. of AFP cases with specimens	Results of virus isolation for AFP cases										Intratyphic differentiation/ Sequencing laboratory ¹	No. of isolates received	Results of intratyphic differentiation (ITD)/sequencing for virus isolates															
			L20B positive	L20B positive + NPEV	NPEV only	Negative	Pending ≤ 14 days	Pending > 14 days	% results reported ≤ 14 days ≥ 80%	% specimens positive for NPEV	Latest report date	Type 1			Type 2			Type 3			NPEV ²	Pending ITD	Discordant pending sequencing	% ITD results reported ≤ 7 days of receipt ≥ 80%						
												Wild			Sabin	VDPV	Wild	Sabin	VDPV	Wild					Sabin	VDPV				
Australia	VIDRL	3	0	0	0	3	0	0	100%	0%	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Brunei Darussalam	VIDRL	0	-	-	-	-	-	-	-	-	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cambodia	NIID	0	-	-	-	-	-	-	-	-	22-Jan-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China (total)		0	-	-	-	-	-	-	-	-	24-Jan-18		0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Anhui	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Beijing	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Chongqing	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Fujian	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Gansu	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guangdong	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guangxi	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guizhou	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hebei	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Heilongjiang	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Henan	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hubei	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hunan	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jiangsu	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jiangxi	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jilin	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Neimongol	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Ningxia	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shaanxi	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shandong	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanghai	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanxi	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Sichuan	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tianjin	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Xinjiang	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Yunnan	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Zhejiang	Prov. Lab	0	-	-	-	-	-	-	-	-	-	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hainan	Prov. Lab	0	-	-	-	-	-	-	-	-	-	CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Liaoning	Prov. Lab	0	-	-	-	-	-	-	-	-	-	CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Qinghai	Prov. Lab	0	-	-	-	-	-	-	-	-	-	CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tibet	Prov. Lab	0	-	-	-	-	-	-	-	-	-	CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hong Kong SAR	PHLC	0	-	-	-	-	-	-	-	-	22-Jan-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Macao SAR	PHLC	0	-	-	-	-	-	-	-	-	22-Jan-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	NIID	0	-	-	-	-	-	-	-	-	-	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lao People's Democratic Republic	NIID	1	0	0	1	0	0	0	100%	50%	29-Jan-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Malaysia	IMR	0	-	-	-	-	-	-	-	-	08-Jan-18	IMR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mongolia	PHI	0	-	-	-	-	-	-	-	-	26-Jan-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand	IESR	0	-	-	-	-	-	-	-	-	23-Jan-18	IESR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Papua New Guinea	VIDRL	0	-	-	-	-	-	-	-	-	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Philippines	RITM	6	0	0	0	1	5	0	100%	0%	23-Jan-18	RITM	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Republic of Korea	NIH	0	-	-	-	-	-	-	-	-	11-Jan-18	NIH	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Singapore	SGH	0	-	-	-	-	-	-	-	-	26-Jan-18	SGH	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Viet Nam (North)	NIHE	0	-	-	-	-	-	-	-	-	25-Jan-18	NIHE	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Viet Nam (South)	PI	2	0	0	0	1	1	0	100%	0%	23-Jan-18	PI	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific island countries and areas	VIDRL	0	-	-	-	-	-	-	-	-	25-Jan-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		12	0	0	1	5	6	0	100%	17%			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	

1. CCDC (Chinese Center for Disease Control and Prevention, China); IESR (Institute of Environmental Science and Research, New Zealand); IMR (Institute of Medical Research, Malaysia); NIH (National Institute of Health, Republic of Korea); NIHE (National Institute of Hygiene and Epidemiology, Ha Noi, Viet Nam); NIID (National Institute of Infectious Diseases, Japan); PHI (Public Health Institute, Mongolia); PHLC (Public Health Laboratory Center, China, Hong Kong SAR); PI (Pasteur Institute, Ho Chi Minh, Viet Nam); RITM (Research Institute for Tropical Medicine, Philippines); SGH (Singapore General Hospital); VIDRL (Victorian Infectious Diseases Reference Laboratory, Australia)

2. NPEV growing in L20B cells

Table 3. Laboratory confirmation of polio isolates from environmental samples in 2016–2017¹

Country/area	Intratyptic differentiation lab ²	2016													2017														
		Total number of samples processed	Total number of samples with polio isolates	Polio isolates									NPEV	Pending ITD	Discordant pending sequencing	Total number of samples processed	Total number of samples with polio isolates	Polio isolates									NPEV	Pending ITD	Discordant pending sequencing
				Type 1			Type 2			Type 3								Type 1			Type 2			Type 3					
				Wild	Sabin	VDPV	Wild	Sabin	VDPV	Wild	Sabin	VDPV						Wild	Sabin	VDPV	Wild	Sabin	VDPV	Wild	Sabin	VDPV			
Australia	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	6	2	0	0	0	0	0	1	0	1	0	4	0	0	
China (total)		345	171	0	179	0	0	174	0	0	507	0	229	0	0	282	160	0	191	0	0	0	0	559	0	982	0	0	
China, Fujian	Prov. Lab/CCDC	60	12	0	3	0	0	1	0	0	11	0	42	0	0	45	15	0	4	0	0	0	0	25	0	278	0	0	
China, Gansu	Prov. Lab/CCDC	13	8	0	5	0	0	5	0	0	13	0	2	0	0	10	8	0	10	0	0	0	0	27	0	12	0	0	
China, Guangdong	Prov. Lab/CCDC	48	35	0	19	0	0	4	0	0	62	0	39	0	0	44	36	0	17	0	0	0	0	83	0	100	0	0	
China, Guangxi	Prov. Lab/CCDC	36	13	0	1	0	0	4	0	0	52	0	23	0	0	30	16	0	11	0	0	0	0	32	0	62	0	0	
China, Heilongjiang	Prov. Lab/CCDC	45	21	0	0	0	0	5	0	0	46	0	32	0	0	42	16	0	12	0	0	0	0	32	0	110	0	0	
China, Shandong	Prov. Lab/CCDC	45	28	0	25	0	0	15	0	0	42	0	40	0	0	43	26	0	18	0	0	0	0	87	0	253	0	0	
China, Shanghai	Prov. Lab/CCDC	24	18	0	17	0	0	4	0	0	34	0	18	0	0	14	12	0	13	0	0	0	0	28	0	26	0	0	
China, Xinjiang	Prov. Lab/CCDC	36	36	0	109	0	0	136	0	0	247	0	25	0	0	33	31	0	106	0	0	0	0	245	0	106	0	0	
China, Yunnan	Prov. Lab/CCDC	38	0	-	-	-	-	-	-	-	-	-	8	0	0	21	0	-	-	-	-	-	-	-	-	35	0	0	
Malaysia	IMR	10	0	-	-	-	-	-	-	-	-	-	6	0	0	24	0	-	-	-	-	-	-	-	-	22	0	0	
Philippines	RITM	0	-	-	-	-	-	-	-	-	-	-	-	-	40	8	0	1	0	0	0	0	0	7	0	21	0	0	
Total		355	171	0	179	0	0	174	0	0	507	0	235	0	0	352	170	0	192	0	0	0	1	0	567	0	1029	0	0

1. Based on year of collection of sample, if available. Otherwise, based on year of receipt at reference laboratory.

2. CCDC (Chinese Center for Disease Control and Prevention, China); IMR (Institute of Medical Research, Malaysia); RITM (Research Institute for Tropical Medicine, Philippines); VIDRL (Victorian Infectious Diseases Reference Laboratory, Australia)

Table 4. Vaccine-derived poliovirus¹ identified from laboratory testing², 2000–2017

Country/area	2000–2009 ³	2010	2011	2012	2013	2014	2015	2016	2017
Australia									aVDPV2 (1 env)
Cambodia	2006 - 1 Total - 2								
China	2009 - 1 Total - 27	aVDPV2 (3 AFP + 1 contact + 1 non-AFP) aVDPV3 (1 AFP + 1 non-AFP)	aVDPV1 (1 AFP) aVDPV2 (2 AFP + 1 contact) cVDPV2 (2 AFP) iVDPV2 (1 AFP + 1 non-AFP) iVDPV3 (1 AFP)	aVDPV1 (1 AFP) aVDPV2 (2 AFP) cVDPV2 (2 AFP + 1 contact) iVDPV2 + iVDPV3 (1 AFP)	aVDPV2 (1 non-AFP) iVDPV2 + iVDPV3 (1 AFP)	aVDPV1 (1 non-AFP) aVDPV2 (2 AFP) iVDPV3 (1 AFP)	aVDPV1 (1 AFP) aVDPV2 (1 AFP) iVDPV2 (1 AFP) aVDPV2 (1 env)	aVDPV3 (1 AFP)	aVDPV3 (1 AFP) ?VDPV3 (1 AFP)
China, Hong Kong SAR	2005 - 3								
Japan	2005 - 1 Total - 2								
Lao People's Democratic Republic	2004 - 3						cVDPV1 (8 AFP + 21 contacts)	cVDPV1 (3 AFP + 4 contacts)	
Mongolia	2003 - 1								
Philippines	2001 - 3					aVDPV2 (1 AFP)			
Viet Nam				aVDPV2 (2 AFP)					

1. Prefix letter refers to the VDPV category: "cVDPV" = circulating VDPV, "iVDPV" = immunodeficiency-associated VDPV, "aVDPV" = ambiguous VDPV, "?VDPV" = pending. Suffix number refers to the poliovirus serotype (types 1, 2 or 3).

2. Source of specimens could be AFP cases, contacts, non-AFP cases or environmental

3. Refers to year of last VDPV case, and aggregate total of VDPV cases for 2000-2009