

HIGHLIGHTS

First polio outbreak simulation exercise in the Western Pacific Region

On 12-14 March 2019, WHO WPRO with support from WHO EURO conducted the first polio outbreak simulation exercise (POSE) in the Western Pacific Region for Cambodia, China, Lao People's Democratic Republic, and Viet Nam. The participants critically reviewed their national action plans and noted areas for improvement. The main issues identified during the POSE and to be followed up were to:

- revise the national plan of action, in line with the current GPEI SOPs;
- perform a current assessment to understand who and where the high-risk/marginalized population groups (including travellers, nomads) are;
- identify strategies to reach these high-risk groups with polio eradication interventions;
- sustain high routine vaccination coverage and increase vaccination coverage in high-risk populations;
- sustain quality of acute flaccid paralysis and environmental surveillance.

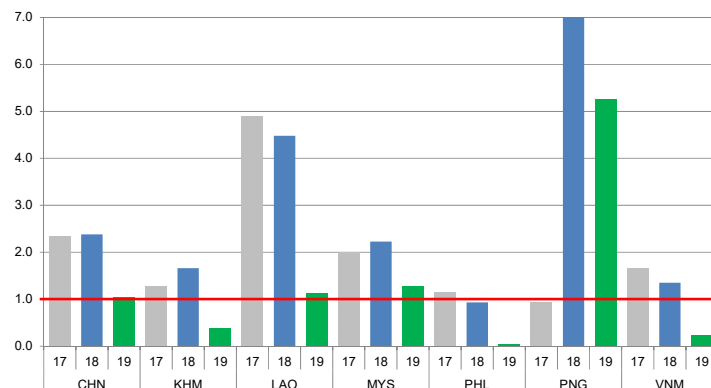
The full report of the WPRO POSE I, including the countries' plans of action and next steps, will be published soon. Based on the lessons learned, WPRO intends to continue inter-country and national POSEs.



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Chart 1. Non-polio AFP rate (per 100 000 persons < 15 years of age), 2017–2019*



* AFP rate annualized as of week 12

Chart 2. Adequate specimen collection rate, 2017–2019

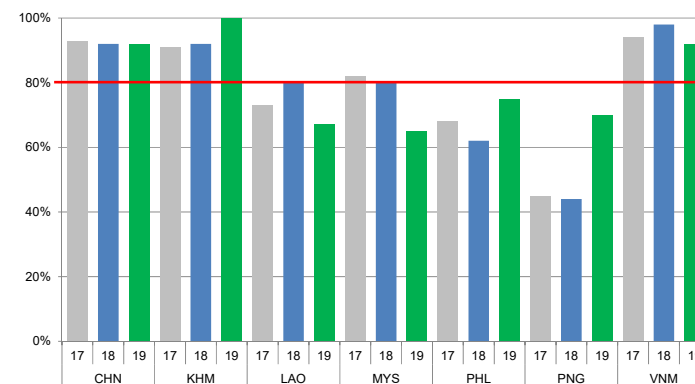


Chart 3. Percentage of reported AFP cases by number of polio vaccination doses, 2019

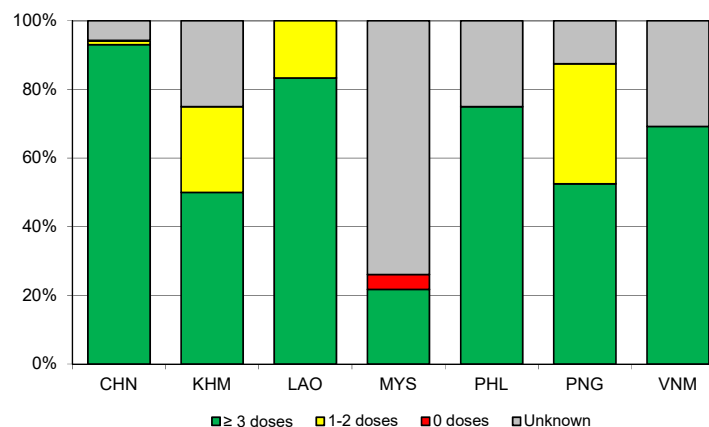
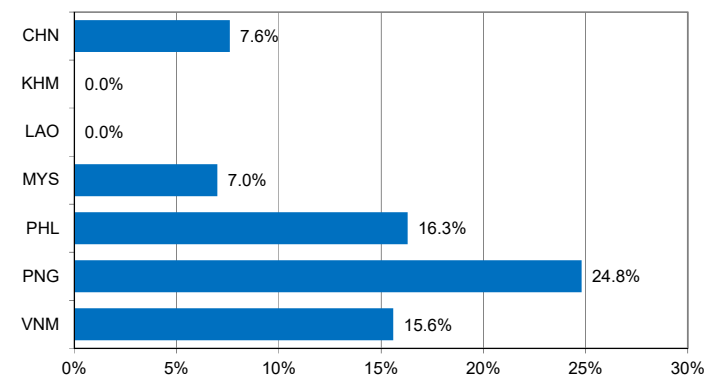


Chart 4. Percentage of reported AFP cases with pending classification > 90 days after onset, 2018



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 2018 and key surveillance indicators

Country/area	2017		2018							Indicators			Latest report date ⁴	Days since last report ⁵
	Total reported cases	Annual expected cases <15 years of age	Total reported cases	Classification				Pending		Non-polio AFP rate	% with adequate specimens ²	% investigated ≤ 2 days of notification ³		
				Confirmed wild poliovirus	Vaccine-derived poliovirus (VDPV)	Polio-compatible	Discarded (Non-polio)	Total	> 90 days ¹ # (%)					
														≤ 30
Australia	60	46	57	0	0	3	54	0	0 (0.0%)	1.24	44%	89%	14-Feb-19	-
Brunei Darussalam	1	1	2	0	0	0	2	0	0 (0.0%)	2.00	100%	100%	24-Jan-19	-
Cambodia	57	44	73	0	0	0	73	0	0 (0.0%)	1.66	92%	85%	15-Mar-19	-
China	5278	2256	5361	0	1	0	4893	467	409 (7.6%)	2.38	92%	100%	20-Mar-19	6
China, Hong Kong SAR	15	9	11	0	0	0	10	1	0 (0.0%)	1.22	82%	100%	15-Mar-19	11
China, Macao SAR	2	1	3	0	0	0	3	0	0 (0.0%)	3.00	100%	100%	19-Feb-19	-
Japan	-	161	-	-	-	-	-	-	-	-	-	-	-	-
Lao People's Democratic Republic	103	21	94	0	0	0	84	10	0 (0.0%)	4.48	80%	79%	13-Feb-19	41
Malaysia	154	77	172	0	0	0	160	12	12 (7.0%)	2.23	80%	87%	13-Mar-19	13
Mongolia	6	9	6	0	0	0	6	0	0 (0.0%)	0.67	100%	83%	04-Feb-19	-
New Zealand	13	9	10	0	0	0	10	0	0 (0.0%)	1.11	60%	100%	28-Feb-19	-
Papua New Guinea	29	37	286	0	26	12	168	80	71 (24.8%)	7.03	44%	74%	23-Feb-19	31
Philippines	462	338	313	0	0	0	261	52	51 (16.3%)	0.93	62%	94%	25-Mar-19	1
Republic of Korea	68	67	70	0	0	0	70	0	0 (0.0%)	1.04	90%	100%	11-Mar-19	-
Singapore	7	6	13	0	0	0	13	0	0 (0.0%)	2.17	77%	100%	08-Mar-19	-
Viet Nam	385	234	315	0	0	0	235	80	49 (15.6%)	1.35	98%	86%	11-Jan-19	74
Pacific island countries and areas	16	11	13	0	0	0	1	12	9 (69.2%)	1.18	31%	100%	18-Feb-19	36
Total	6656	3327	6799	0	27	15	6043	714	601 (8.8%)	2.04	88%	97%		

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. Report date is fixed as soon as all cases for the year have been classified
5. 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 2019 and key surveillance indicators

Country/area	2018	2019												
	Total reported cases	Annual expected cases <15 years of age	Total reported cases	Classification						Indicators			Latest report date	Days since last report ⁵
				Confirmed wild poliovirus	Vaccine-derived poliovirus (VDPV)	Polio-compatible	Discarded (Non-polio)	Pending		Non-polio AFP rate ²	% with adequate specimens ³	% investigated ≤ 2 days of notification ⁴		
								Total	> 90 days ¹ # (%)					
≥ 1	≥ 80%	≥ 80%	≤ 30											
Australia	57	47	6	0	0	0	4	2	0 (0.0%)	0.55	50%	100%	14-Feb-19	40
Brunei Darussalam	2	1	1	0	0	0	1	0	0 (0.0%)	4.33	100%	100%	21-Mar-19	5
Cambodia	73	46	4	0	0	0	0	4	0 (0.0%)	0.38	100%	75%	12-Feb-19	42
China	5361	2256	548	0	0	0	26	522	0 (0.0%)	1.05	92%	100%	20-Mar-19	6
China, Hong Kong SAR	11	9	5	0	0	0	2	3	0 (0.0%)	2.41	100%	80%	22-Mar-19	4
China, Macao SAR	3	1	0	-	-	-	-	-	-	-	-	-	13-Mar-19	13
Japan	-	161	-	-	-	-	-	-	-	-	-	-	-	-
Lao People's Democratic Republic	94	23	6	0	0	0	0	6	0 (0.0%)	1.13	67%	83%	13-Feb-19	41
Malaysia	172	78	23	0	0	0	1	22	0 (0.0%)	1.28	65%	17%	13-Mar-19	13
Mongolia	6	9	2	0	0	0	0	2	0 (0.0%)	0.96	100%	100%	09-Mar-19	17
New Zealand	10	9	1	0	0	0	1	0	0 (0.0%)	0.48	100%	100%	28-Feb-19	26
Papua New Guinea	286	33	40	0	0	0	0	40	0 (0.0%)	5.25	70%	88%	25-Mar-19	1
Philippines	313	344	4	0	0	0	0	4	0 (0.0%)	0.05	75%	100%	11-Mar-19	15
Republic of Korea	70	66	4	0	0	0	0	4	0 (0.0%)	0.26	75%	100%	11-Mar-19	15
Singapore	13	6	1	0	0	0	1	0	0 (0.0%)	0.72	100%	100%	08-Mar-19	18
Viet Nam	315	234	13	0	0	0	0	13	1 (7.7%)	0.24	92%	85%	14-Mar-19	12
Pacific island countries and areas	13	11	1	0	0	0	0	1	0 (0.0%)	0.39	100%	100%	07-Feb-19	47
Total	6799	3334	659	0	0	0	36	623	1 (0.2%)	0.86	89%	95%		

1. Number (%) of reported cases pending classification more than 90 days from date of onset of paralysis to date of last report
2. Annualized non-polio AFP rate per 100 000 population under 15 years of age
3. Percentage of reported cases with two stool specimens collected 24 hours apart and within 14 days of onset of paralysis
4. Percentage of reported cases investigated within two days of notification
5. 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 2018 and key laboratory indicators

Country/area	Polio 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 ≥ 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	44	1	0	1	42	0	0	91%	3%	05-Feb-19	VIDRL	1	0	0	0	0	0	0	0	0	0	1	0	0	100%
Brunei Darussalam	VIDRL	2	0	0	0	2	0	0	50%	0%	04-Feb-19	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	NIID	74	0	0	13	61	0	0	93%	15%	18-Jan-19	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-
China (total)		5293	37	0	377	4877	0	2	97%	6%	20-Mar-19		88	0	24	0	0	0	0	63	1	0	0	0	99%	
China, Anhui	Prov. Lab	339	3	0	18	318	0	0	100%	5%		Prov. Lab/CCDC	8	0	3	0	0	0	0	5	0	0	0	0	100%	
China, Beijing	Prov. Lab	31	0	0	0	31	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Chongqing	Prov. Lab	69	0	0	2	67	0	0	93%	2%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Fujian	Prov. Lab	176	1	0	12	163	0	0	97%	6%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	100%	
China, Gansu	Prov. Lab	101	1	0	5	94	0	1	99%	4%		Prov. Lab/CCDC	2	0	0	0	0	0	0	2	0	0	0	0	100%	
China, Guangdong	Prov. Lab	431	2	0	21	407	0	1	91%	4%		Prov. Lab/CCDC	4	0	0	0	0	0	0	4	0	0	0	0	100%	
China, Guangxi	Prov. Lab	221	2	0	18	201	0	0	99%	7%		Prov. Lab/CCDC	4	0	3	0	0	0	0	1	0	0	0	0	100%	
China, Guizhou	Prov. Lab	188	0	0	14	174	0	0	97%	7%		Prov. Lab/CCDC	2	0	2	0	0	0	0	0	0	0	0	0	100%	
China, Hebei	Prov. Lab	299	1	0	38	260	0	0	100%	10%		Prov. Lab/CCDC	2	0	0	0	0	0	0	2	0	0	0	0	100%	
China, Heilongjiang	Prov. Lab	91	0	0	4	87	0	0	100%	4%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Henan	Prov. Lab	557	5	0	57	495	0	0	99%	9%		Prov. Lab/CCDC	13	0	5	0	0	0	0	8	0	0	0	0	100%	
China, Hubei	Prov. Lab	177	1	0	13	163	0	0	99%	7%		Prov. Lab/CCDC	4	0	2	0	0	0	0	2	0	0	0	0	100%	
China, Hunan	Prov. Lab	245	0	0	25	220	0	0	99%	9%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jiangsu	Prov. Lab	252	8	0	11	233	0	0	100%	4%		Prov. Lab/CCDC	16	0	2	0	0	0	0	13	1	0	0	0	100%	
China, Jiangxi	Prov. Lab	176	1	0	12	163	0	0	97%	5%		Prov. Lab/CCDC	3	0	2	0	0	0	0	1	0	0	0	0	100%	
China, Jilin	Prov. Lab	58	2	0	9	47	0	0	98%	11%		Prov. Lab/CCDC	8	0	4	0	0	0	0	4	0	0	0	0	100%	
China, Neimongol	Prov. Lab	101	2	0	4	95	0	0	98%	3%		Prov. Lab/CCDC	4	0	1	0	0	0	0	3	0	0	0	0	100%	
China, Ningxia	Prov. Lab	26	0	0	2	24	0	0	96%	6%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shaanxi	Prov. Lab	99	1	0	2	96	0	0	84%	2%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	0%	
China, Shandong	Prov. Lab	415	2	0	27	386	0	0	100%	5%		Prov. Lab/CCDC	3	0	0	0	0	0	0	3	0	0	0	0	100%	
China, Shanghai	Prov. Lab	42	0	0	0	42	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanxi	Prov. Lab	129	1	0	7	121	0	0	98%	4%		Prov. Lab/CCDC	2	0	0	0	0	0	0	2	0	0	0	0	100%	
China, Sichuan	Prov. Lab	298	1	0	21	276	0	0	97%	6%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	100%	
China, Tianjin	Prov. Lab	22	0	0	0	22	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Xinjiang	Prov. Lab	147	1	0	7	139	0	0	91%	4%		Prov. Lab/CCDC	2	0	0	0	0	0	0	2	0	0	0	0	100%	
China, Yunnan	Prov. Lab	250	0	0	31	219	0	0	93%	10%		Prov. Lab/CCDC	1	0	0	0	0	0	0	1	0	0	0	0	100%	
China, Zhejiang	Prov. Lab	188	2	0	7	179	0	0	99%	3%		Prov. Lab/CCDC	7	0	0	0	0	0	0	7	0	0	0	0	100%	
China, Hainan	Prov. Lab	36	0	0	6	30	0	0	100%	14%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Liaoning	Prov. Lab	89	0	0	3	86	0	0	98%	2%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Qinghai	Prov. Lab	32	0	0	0	32	0	0	100%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tibet	Prov. Lab	8	0	0	1	7	0	0	73%	7%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hong Kong SAR	PHLC	11	0	0	0	11	0	0	100%	0%	28-Jan-19	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	
China, Macao SAR	PHLC	3	0	0	0	3	0	0	100%	0%	24-Dec-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	NIID	-	-	-	-	-	-	-	-	-	-	NIID	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lao People's Democratic Republic	NIID	115	1	0	8	106	0	0	96%	4%	12-Mar-19	NIID	1	0	0	0	0	0	0	1	0	0	0	0	100%	
Malaysia	IMR	180	0	0	10	170	0	0	89%	4%	19-Feb-19	IMR	0	-	-	-	-	-	-	-	-	-	-	-	-	
Mongolia	PHI	6	0	0	3	3	0	0	100%	50%	04-Jan-19	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand	IESR	8	0	0	1	7	0	0	100%	13%	25-Jan-19	IESR	0	-	-	-	-	-	-	-	-	-	-	-	-	
Papua New Guinea	VIDRL	297	93	1	21	182	0	0	88%	5%	28-Feb-19	VIDRL	187	0	63	46	0	0	0	78	0	0	0	0	100%	
Philippines	RITM	396	5	1	14	375	1	0	96%	3%	26-Feb-19	RITM	7	0	2	0	0	0	0	5	0	0	0	0	100%	
Republic of Korea	NIH	69	0	0	5	64	0	0	97%	7%	11-Feb-19	NIH	0	-	-	-	-	-	-	-	-	-	-	-	-	
Singapore	SGH	13	0	0	2	11	0	0	96%	8%	30-Jan-19	SGH	0	-	-	-	-	-	-	-	-	-	-	-	-	
Viet Nam (North)	NIHE	175	3	0	24	148	0	0	100%	12%	30-Jan-19	NIHE	4	0	2	0	0	0	0	2	0	0	0	0	100%	
Viet Nam (South)	PI	175	4	0	21	150	0	0	100%	12%	18-Mar-19	PI	8	0	2	0	0	0	0	6	0	0	0	0	100%	
Pacific island countries and areas	VIDRL	11	0	0	1	10	0	0	97%	6%	04-Feb-19	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	
Total		6872	144	2	501	6222	1	2	97%	6%			296	0	93	46	0	0	0	0	155	1	1	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 2019 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	% 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						
														≥ 80%														
Australia	VIDRL	4	0	0	0	2	0	2	100%	0%	14-Feb-19	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brunei Darussalam	VIDRL	1	0	0	0	1	0	0	100%	0%	04-Feb-19	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	NIID	4	0	0	0	4	0	0	100%	0%	02-Mar-19	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China (total)		532	2	0	25	477	0	28	96%	4%	20-Mar-19		2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	100%
China, Anhui	Prov. Lab	26	0	0	0	26	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China, Beijing	Prov. Lab	6	0	0	0	6	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China, Chongqing	Prov. Lab	5	0	0	0	3	0	2	67%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Fujian	Prov. Lab	16	0	0	0	15	0	1	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Gansu	Prov. Lab	8	0	0	0	8	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guangdong	Prov. Lab	39	0	0	1	36	0	2	100%	3%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guangxi	Prov. Lab	28	0	0	2	26	0	0	100%	5%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guizhou	Prov. Lab	26	0	0	3	20	0	3	100%	11%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hebei	Prov. Lab	41	0	0	1	39	0	1	100%	1%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Heilongjiang	Prov. Lab	12	0	0	0	12	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Henan	Prov. Lab	37	0	0	2	35	0	0	91%	4%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hubei	Prov. Lab	19	0	0	2	15	0	2	88%	12%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hunan	Prov. Lab	24	0	0	1	23	0	0	100%	4%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jiangsu	Prov. Lab	19	0	0	0	18	0	1	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jiangxi	Prov. Lab	11	0	0	0	11	0	0	91%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jilin	Prov. Lab	5	1	0	0	4	0	0	100%	0%		Prov. Lab/CCDC	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	100%
China, Neimongol	Prov. Lab	13	1	0	0	12	0	0	100%	0%		Prov. Lab/CCDC	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	100%
China, Ningxia	Prov. Lab	2	0	0	0	2	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shaanxi	Prov. Lab	5	0	0	0	4	0	1	75%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shandong	Prov. Lab	30	0	0	1	29	0	0	87%	2%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanghai	Prov. Lab	4	0	0	0	4	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanxi	Prov. Lab	15	0	0	0	14	0	1	93%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Sichuan	Prov. Lab	37	0	0	10	25	0	2	96%	23%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tianjin	Prov. Lab	2	0	0	0	2	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Xinjiang	Prov. Lab	19	0	0	0	19	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Yunnan	Prov. Lab	37	0	0	2	26	0	9	93%	4%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Zhejiang	Prov. Lab	26	0	0	0	25	0	1	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hainan	Prov. Lab	1	0	0	0	1	0	0	100%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Liaoning	Prov. Lab	10	0	0	0	8	0	2	100%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Qinghai	Prov. Lab	5	0	0	0	5	0	0	80%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tibet	Prov. Lab	4	0	0	0	4	0	0	25%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hong Kong SAR	PHLC	5	0	0	0	5	0	0	100%	0%	22-Mar-19	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Macao SAR	PHLC	0	-	-	-	-	-	-	-	-	-	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	NIID	-	-	-	-	-	-	-	-	-	-	NIID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lao People's Democratic Republic	NIID	8	0	0	0	10	0	0	100%	0%	12-Mar-19	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Malaysia	IMR	6	0	0	0	6	0	0	100%	0%	19-Feb-19	IMR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mongolia	PHI	2	0	0	0	2	0	0	100%	0%	23-Mar-19	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand	IESR	1	0	0	0	1	0	0	100%	0%	18-Mar-19	IESR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Papua New Guinea	VIDRL	14	0	0	2	11	0	1	100%	15%	26-Mar-19	VIDRL	3	0	0	0	0	0	0	0	0	2	0	1	0	100%		
Philippines	RITM	34	0	0	2	23	9	0	95%	8%	22-Mar-19	RITM	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
Republic of Korea	NIH	4	0	0	0	4	0	0	100%	0%	11-Mar-19	NIH	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
Singapore	SGH	1	0	0	0	1	0	0	100%	0%	22-Mar-19	SGH	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
Viet Nam (North)	NIHE	1	0	0	0	1	0	0	100%	0%	15-Feb-19	NIHE	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
Viet Nam (South)	PI	10	0	0	1	9	0	0	100%	10%	18-Mar-19	PI	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pacific island countries and areas	VIDRL	1	0	0	0	1	0	0	96%	4%	13-Feb-19	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total		628	2	0	30	558	9	31	96%	4%			5	0	2	0	0	0	0	0	0	2	0	1	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 3. Laboratory confirmation of polio isolates from environmental samples in 2018–2019 ¹

Country/area	Intratyptic differentiation lab ²	2018													2019																			
		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	17	2	0	2	0	0	0	0	0	0	0	12	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China (total)		281	180	0	199	0	0	0	1	0	560	2	1409	0	0	15	11	0	7	0	0	0	0	0	0	28	0	47	0	0	0	0	0	
China, Fujian	Prov. Lab/CCDC	73	51	0	20	0	0	0	0	0	107	1	577	0	0	6	4	0	2	0	0	0	0	0	4	0	22	0	0	0	0	0	0	
China, Gansu	Prov. Lab/CCDC	12	7	0	2	0	0	0	0	0	12	0	40	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Guangdong	Prov. Lab/CCDC	48	41	0	27	0	0	0	0	0	102	1	217	0	0	4	4	0	2	0	0	0	0	0	10	0	10	0	0	0	0	0	0	
China, Guangxi	Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Heilongjiang	Prov. Lab/CCDC	42	22	0	6	0	0	0	0	0	44	0	106	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shandong	Prov. Lab/CCDC	40	16	0	21	0	0	0	0	0	63	0	282	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanghai	Prov. Lab/CCDC	12	7	0	3	0	0	0	0	0	11	0	37	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Xinjiang	Prov. Lab/CCDC	36	36	0	120	0	0	0	1	0	221	0	109	0	0	3	3	0	3	0	0	0	0	0	14	0	8	0	0	0	0	0	0	
China, Yunnan	Prov. Lab/CCDC	18	0	-	-	-	-	-	-	-	-	-	41	0	0	2	0	-	-	-	-	-	-	-	-	-	7	0	0	0	0	0	0	
Philippines	RITM	87	8	0	2	0	0	0	0	0	6	0	24	0	0	25	5	0	2	0	0	0	0	0	3	0	10	5	0	0	0	0	0	
Papua New Guinea	RITM	27	23	0	15	7	0	0	0	0	21	0	9	0	0	10	8	0	4	0	0	0	0	0	5	0	9	0	0	0	0	0	0	
Total		412	213	0	218	7	0	0	1	0	587	2	1454	0	0	50	24	0	13	0	0	0	0	0	0	36	0	66	5	0	0	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); RITM (Research Institute for Tropical Medicine, Philippines); VIDRL (Victorian Infectious Diseases Reference Laboratory, Australia)

Table 4. Vaccine-derived poliovirus¹ identified from laboratory testing², 2000–2019

Country/area	2000–2009 ³	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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) 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) iVDPV3 (1 AFP) ⁴	aVDPV2 (1 env) iVDPV3 (1 AFP + 1 non-AFP) aVDPV3 (2 env)	
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										
Papua New Guinea										cVDPV1 (26 AFP + 8 contacts + 7 env)	
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

4. Continuous excretion for 4 months; potential immunodeficient person.