

HIGHLIGHTS

Poliovirus Laboratory Containment News

Two global meetings have been organized in WHO HQ in Geneva to discuss the progress related to polio laboratory containment:

1. WHO/UNICEF Consultation with Oral Polio Vaccine (OPV) / Inactivated Polio Vaccine (IPV) Manufacturers and National Authorities for Containment (NACs), held on 09 October 2018 with the objectives:

- to inform manufacturers on projected bivalent-oral polio vaccine (bOPV) type 1&3, monovalent mOPV type 2, mOPV3 and inactivated polio vaccine (IPV) demand for the period 2019-2021;
- to update manufacturers and NACs on recent amendments of the Global Action Plan III (GAPIII);
- to present policy, product development and clinical data generated by WHO and partners; and
- to discuss how to strengthen existing collaboration between manufacturers and NACs involved in poliovirus containment activities.

2. Meeting between Regional Offices, Global Certification Commission- Containment Working Group (GCC-CWG) Members and the Chairs of all NACs, held on 10-11 October 2018 with the objectives:

- update stakeholders on progress related to the containment certification of poliovirus-essential facilities (PEFs);
- provide a forum for key containment certification stakeholders to synergize their efforts and to collaborate in case of needs; and
- engagement of all countries hosting a PEFs to set up a national emergency preparedness plan addressing containment breaches.

For more news on the poliovirus laboratory containment please visit: <http://polioeradication.org/polio-today/preparing-for-a-polio-free-world/containment/>

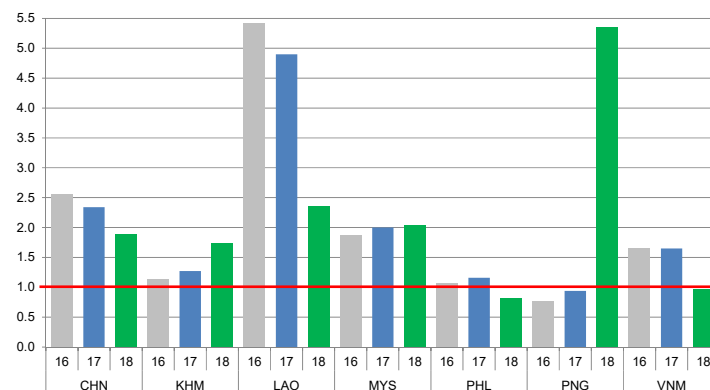
and Containment Corner Newsletter at:

<http://polioeradication.org/wp-content/uploads/2016/07/containment-poliovirus-containment-news-may-2018-20180511.pdf>

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: wpro.who.int/immunization

Chart 1. Non-polio AFP rate (per 100 000 persons < 15 years of age), 2016–2018*



* AFP rate annualized as of week 42

Chart 2. Adequate specimen collection rate, 2016–2018

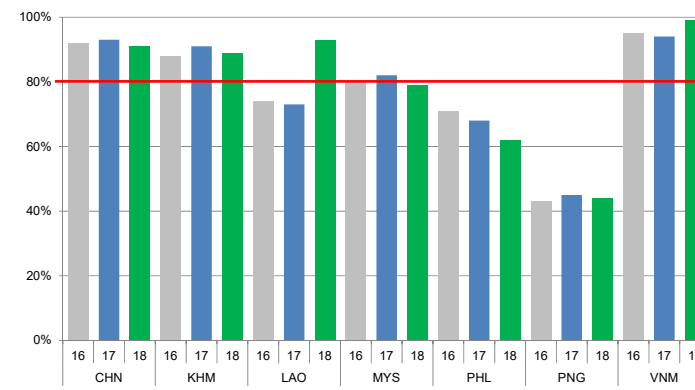


Chart 3. Percentage of reported AFP cases by number of polio vaccination doses, 2018

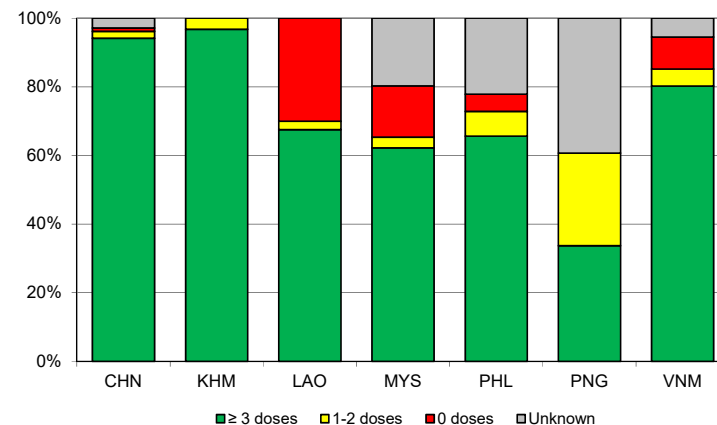
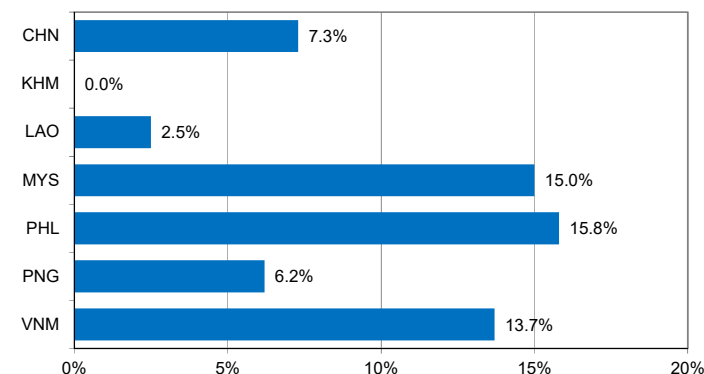


Chart 4. Percentage of reported AFP cases with pending classification > 90 days after onset, 2018



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 1. 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 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	61	46	46	0	0	2	37	7	4 (8.7%)	1.24	50%	78%	19-Oct-18	4
Brunei Darrusalam	1	1	2	0	0	0	2	0	0 (0.0%)	2.48	100%	100%	13-Oct-18	10
Cambodia	57	44	62	0	0	0	59	3	0 (0.0%)	1.74	89%	85%	19-Oct-18	4
China	5278	2256	3419	0	1	0	2422	996	251 (7.3%)	1.88	91%	100%	17-Oct-18	6
China, Hong Kong SAR	15	9	9	0	0	0	6	3	0 (0.0%)	1.24	100%	100%	22-Oct-18	1
China, Macao SAR	2	1	2	0	0	0	1	1	0 (0.0%)	2.48	100%	100%	11-Oct-18	12
Japan	-	161	-	-	-	-	-	-	-	-	-	-	-	-
Lao People's Democratic Republic	103	21	40	0	0	0	31	9	1 (2.5%)	2.36	93%	73%	24-Aug-18	60
Malaysia	154	77	127	0	0	0	72	55	19 (15.0%)	2.04	79%	72%	19-Sep-18	34
Mongolia	6	9	5	0	0	0	5	0	0 (0.0%)	0.69	100%	80%	11-Oct-18	12
New Zealand	13	9	6	0	0	0	6	0	0 (0.0%)	0.83	67%	100%	31-Aug-18	53
Papua New Guinea	29	37	178	0	18	6	74	80	11 (6.2%)	5.35	44%	81%	22-Oct-18	1
Philippines	462	338	221	0	0	0	160	61	35 (15.8%)	0.81	62%	94%	02-Oct-18	21
Republic of Korea	68	67	50	0	0	0	37	13	0 (0.0%)	0.92	88%	100%	15-Oct-18	8
Singapore	7	6	9	0	0	0	9	0	0 (0.0%)	1.86	89%	100%	09-Oct-18	14
Viet Nam	385	234	182	0	0	0	115	67	25 (13.7%)	0.96	99%	89%	21-Oct-18	2
Pacific island countries and areas	16	11	1	0	0	0	1	0	0 (0.0%)	0.11	0%	100%	24-Aug-18	60
Total	6657	3327	4359	0	19	8	3037	1295	346 (7.9%)	1.62	87%	97%		

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 2. 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	% 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	36	0	0	1	34	0	1	92%	3%	19-Oct-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brunei Darussalam	VIDRL	2	0	0	0	2	0	0	50%	0%	10-Sep-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cambodia	NIID	60	0	0	12	48	0	0	92%	18%	22-Oct-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China (total)		3365	24	0	276	2966	0	99	98%	7%	17-Oct-18		70	0	15	0	0	0	0	0	47	8	0	0	0	0	0	0	100%	
China, Anhui	Prov. Lab	197	2	0	12	175	0	8	100%	6%		Prov. Lab/CCDC	8	0	3	0	0	0	0	0	5	0	0	0	0	0	0	0	100%	
China, Beijing	Prov. Lab	25	0	0	0	24	0	1	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Chongqing	Prov. Lab	23	0	0	2	21	0	0	87%	7%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Fujian	Prov. Lab	125	1	0	12	101	0	11	100%	9%		Prov. Lab/CCDC	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	100%	
China, Gansu	Prov. Lab	75	1	0	4	66	0	4	100%	5%		Prov. Lab/CCDC	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	100%	
China, Guangdong	Prov. Lab	285	1	0	16	266	0	2	92%	4%		Prov. Lab/CCDC	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	100%	
China, Guangxi	Prov. Lab	138	2	0	15	120	0	1	98%	10%		Prov. Lab/CCDC	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	100%	
China, Guizhou	Prov. Lab	113	0	0	7	103	0	3	99%	6%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hebei	Prov. Lab	182	0	0	26	155	0	1	100%	12%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Heilongjiang	Prov. Lab	71	0	0	3	67	0	1	100%	4%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Henan	Prov. Lab	382	3	0	47	330	0	2	100%	11%		Prov. Lab/CCDC	6	0	2	0	0	0	0	0	4	0	0	0	0	0	0	0	100%	
China, Hubei	Prov. Lab	104	0	0	8	95	0	1	99%	7%		Prov. Lab/CCDC	4	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	100%	
China, Hunan	Prov. Lab	155	0	0	21	133	0	1	99%	12%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Jiangsu	Prov. Lab	124	5	0	10	107	0	2	100%	8%		Prov. Lab/CCDC	17	0	0	0	0	0	0	0	9	8	0	0	0	0	0	0	100%	
China, Jiangxi	Prov. Lab	112	1	0	5	102	0	4	97%	3%		Prov. Lab/CCDC	3	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	100%	
China, Jilin	Prov. Lab	40	2	0	8	29	0	1	100%	15%		Prov. Lab/CCDC	8	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	100%	
China, Neimongol	Prov. Lab	63	2	0	2	57	0	2	97%	2%		Prov. Lab/CCDC	4	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	100%	
China, Ningxia	Prov. Lab	14	0	0	1	13	0	0	100%	7%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shaanxi	Prov. Lab	64	0	0	2	55	0	7	88%	3%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shandong	Prov. Lab	272	2	0	21	247	0	2	100%	6%		Prov. Lab/CCDC	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	100%	
China, Shanghai	Prov. Lab	21	0	0	0	21	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Shanxi	Prov. Lab	85	0	0	1	84	0	0	96%	1%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Sichuan	Prov. Lab	194	0	0	5	153	0	36	97%	3%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tianjin	Prov. Lab	17	0	0	0	17	0	0	100%	0%		Prov. Lab/CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Xinjiang	Prov. Lab	103	1	0	7	93	0	2	89%	6%		Prov. Lab/CCDC	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	100%	
China, Yunnan	Prov. Lab	174	0	0	26	146	0	2	93%	12%		Prov. Lab/CCDC	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	100%	
China, Zhejiang	Prov. Lab	102	1	0	7	93	0	1	100%	6%		Prov. Lab/CCDC	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	100%	
China, Hainan	Prov. Lab	26	0	0	6	20	0	0	100%	19%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Liaoning	Prov. Lab	51	0	0	1	47	0	3	99%	1%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Qinghai	Prov. Lab	24	0	0	0	24	0	0	100%	0%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Tibet	Prov. Lab	4	0	0	1	2	0	1	60%	20%		CCDC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Hong Kong SAR	PHLC	9	0	0	0	9	0	0	100%	0%	03-Oct-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Macao SAR	PHLC	2	0	0	0	2	0	0	100%	0%	19-Sep-18	PHLC	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	NIID	-	-	-	-	-	-	-	-	-		NIID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lao People's Democratic Republic	NIID	75	1	0	8	66	0	0	99%	6%	09-Oct-18	NIID	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	100%	
Malaysia	IMR	121	0	0	8	113	0	0	92%	5%	30-Aug-18	IMR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mongolia	PHI	5	0	0	2	3	0	0	100%	40%	15-Oct-18	NIID	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
New Zealand	IESR	7	0	0	1	5	1	0	100%	17%	18-Oct-18	IESR	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Papua New Guinea	VIDRL	132	38	0	13	79	0	2	76%	8%	19-Oct-18	VIDRL	55	0	10	26	0	0	0	0	19	0	0	0	0	0	0	0	100%	
Philippines	RITM	309	4	1	13	286	5	0	95%	4%	16-Oct-18	RITM	10	0	2	0	0	0	0	0	8	0	0	0	0	0	0	0	100%	
Republic of Korea	NIH	49	0	0	5	40	4	0	98%	10%	16-Oct-18	NIH	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Singapore	SGH	10	0	0	2	7	1	0	94%	12%	19-Oct-18	SGH	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Viet Nam (North)	NIHE	149	3	0	15	120	11	0	100%	9%	12-Oct-18	NIHE	4	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	100%	
Viet Nam (South)	PI	115	4	0	12	92	7	0	100%	11%	16-Oct-18	PI	8	0	2	0	0	0	0	0	6	0	0	0	0	0	0	0	100%	
Pacific island countries and areas	VIDRL	1	0	0	0	1	0	0	100%	0%	02-May-18	VIDRL	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total		4447	74	1	368	3873	29	102	97%	7%			148	0	31	26	0	0	0	0	83	8	0	0	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 3. Laboratory confirmation of polio isolates from environmental samples in 2017–2018 ¹

Country/area	Intratyptic differentiation lab ²	2017												2018																
		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	6	2	0	0	0	0	0	1	0	1	0	4	0	0	17	2	0	2	0	0	0	0	0	0	0	0	12	0	0
China (total)		325	188	0	213	0	0	0	0	0	650	0	1158	0	0	171	119	0	163	0	0	0	1	0	396	2	839	0	0	
China, Fujian	Prov. Lab/CCDC	53	22	0	8	0	0	0	0	0	42	0	331	0	0	49	34	0	9	0	0	0	0	0	77	1	382	0	0	
China, Gansu	Prov. Lab/CCDC	12	10	0	10	0	0	0	0	0	29	0	18	0	0	8	5	0	2	0	0	0	0	0	7	0	28	0	0	
China, Guangdong	Prov. Lab/CCDC	48	39	0	18	0	0	0	0	0	87	0	108	0	0	36	31	0	24	0	0	0	0	0	73	1	154	0	0	
China, Guangxi	Prov. Lab/CCDC	36	20	0	22	0	0	0	0	0	36	0	94	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
China, Heilongjiang	Prov. Lab/CCDC	42	17	0	12	0	0	0	0	0	34	0	112	0	0	20	12	0	3	0	0	0	0	0	24	0	41	0	0	
China, Shandong	Prov. Lab/CCDC	48	28	0	18	0	0	0	0	0	90	0	272	0	0	27	8	0	13	0	0	0	0	0	36	0	149	0	0	
China, Shanghai	Prov. Lab/CCDC	22	18	0	17	0	0	0	0	0	65	0	51	0	0	7	5	0	3	0	0	0	0	0	7	0	25	0	0	
China, Xinjiang	Prov. Lab/CCDC	36	34	0	108	0	0	0	0	0	267	0	115	0	0	24	24	0	109	0	0	0	1	0	172	0	60	0	0	
China, Yunnan	Prov. Lab/CCDC	28	0	-	-	-	-	-	-	-	-	-	57	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Malaysia	IMR	24	0	-	-	-	-	-	-	-	-	-	22	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Philippines	RITM	40	8	0	1	0	0	0	0	0	7	0	21	0	0	63	3	0	2	0	0	0	0	0	1	0	18	2	0	
Papua New Guinea	RITM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	0	0	2	0	0	0	0	0	0	2	3	0	
Total		395	198	0	214	0	0	0	1	0	658	0	1205	0	0	255	126	0	167	2	0	0	1	0	397	2	871	5	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, 2000–2018

Country/area	2000–2009 ³	2010	2011	2012	2013	2014	2015	2016	2017	2018
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) 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 (18 AFP + 6 contacts + 2 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.