Report of the Indonesia Polio Outbreak Response Assessment – December 2024

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Acronyms

AFP	acute flaccid paralysis
bOPV	bivalent oral polio vaccine
C4D	communication for development
cVDPV 2	circulating vaccine derived poliovirus type two
DHO	District Health Office
ES	environmental surveillance
EV	enterovirus
EWARS	early warning, alert and response system
GPEI	Global Polio Eradication Initiative
IPV	inactivated poliovirus vaccine
MOH	Ministry of Health
NCCPE	National Certification Committee for Polio Eradication
NID	national immunization days
NITAG	National Technical Advisory Group on Immunization
NPAFP	non-polio acute flaccid paralysis
NPEV	non-polio enterovirus
OBRA	outbreak response assessment
ORPG	outbreak response and preparedness group
PHEIC	public health emergency of international concern
PHO	provincial health office
PV2	poliovirus type 2
RI	routine immunization
SEA-RCCPE	South-East Asia Regional Certification Commission for Poliomyelitis Eradication
SIA	supplementary immunization activities
UNICEF	United Nations Children's Fund
US-CDC	United States Centers for Disease Control and Prevention
USAID	United States Agency for International Development
VDPV	vaccine derived poliovirus
WHO	World Health Organization
WPV1	wild poliovirus type one
WPV2	wild poliovirus type two

Contents

Executive summary

Context: Since the first outbreak response assessment (OBRA) in July 2023, circulating vaccine-derived poliovirus type 2 (cVDPV2) transmission has persisted in Indonesia, linked to the original outbreak detected in Aceh in late 2022. Detections from this outbreak have been limited to Java Island in 2024, with over six months between cases in West and East Java. A secondary outbreak derived from nOPV2 was detected in the eastern provinces, with cases in South Papua, Central Papua, Highlands Papua, and North Maluku. This second OBRA was conducted on December 1–7, 2024, to evaluate Indonesia's response to these ongoing outbreaks.

Methods: A 16-member independent international team supported by national partners conducted the assessment focusing on outbreak response management, surveillance sensitivity, population immunity, advocacy, communication, social mobilization (ACSM) and vaccine management. This included an online orientation, desk review, and field visits to six provinces (Banten, West Papua, Central Kalimantan, North Maluku, North Sulawesi and East Java), with two districts being visited in each province.

Findings: Indonesia has responded appropriately to the cVDPV2 outbreaks. The surveillance sensitivity for acute flaccid paralysis (AFP) cases has improved significantly in 2023 and 2024. Surveillance indicators in 2024 showed improved timeliness compared to 2023; however, there was variability in the quality of key indicators, such as reporting and investigation timeliness. Additionally, stool specimen collection remains low overall. The environmental surveillance system is well established, meeting the national detection target (50.6%), but remains variable by site.

All provinces have completed at least two campaign rounds with nOPV2, though the quality of responses has varied. As of November 2024, the overall coverage for supplementary immunization activities (SIA) was reported to be 94.3% in the first round and 91.1% in the second round. However, several key eastern provinces reported much lower coverage. Routine immunization rates are inconsistent, with some provinces achieving high coverage, however national coverage for four doses of OPV and one dose of IPV has not consistently exceeded 90%.

While the OBRA team noted community engagement efforts, the quality varied across provinces, with some facing significant challenges. Vaccine storage and shipment security during Polio SIAs have been inconsistent, and tracking the use of nOPV2 and vaccine stocks has been suboptimal in some provinces.

Conclusion: The OBRA team concluded that extensive immunization campaigns with nOPV2 have reduced the risk of cVDPV2 circulation. However, it is premature to declare the closure of the cVDPV2 outbreaks due to a lack of uniformity of surveillance sensitivity at the subnational level and issues with adequate specimen collection in several provinces, and continuing gaps in immunity in some provinces especially due to low coverage with IPV.

Recommendations: The OBRA team does not recommend additional SIAs for now, but the national programme should remain alert for a swift response to any new virus detections. The main focus of the national programme should be on 1) continuing to improve surveillance performance; active surveillance should be reinforced through the training of hospital managers, clinicians, and surveillance officers, and particular efforts made to improve

adequate specimen collection, and 2) improving population immunity especially in the highest risk provinces. Provinces with low immunization rates should be prioritized for periodic intensification of routine immunization (PIRI) rounds in 2025, and tailored plans should be developed to address immunization gaps, especially coverage of two doses of IPV. National and partner staff should work with each province to identify issues and develop specific plans to address them. Priority should be given to provinces with recent evidence of transmission. The next OBRA focused on surveillance assessment to ensure that no transmission is likely to be missed in the country should be conducted around June-July 2025. The next OBRA will provide recommendations on the closure of the cVDPV2 outbreaks.

Introduction

An outbreak of circulating vaccine-derived poliovirus type 2 (cVDPV2) was first detected in Indonesia in late 2022. Originally, this outbreak resulted in cases in Aceh and West Java provinces. The country responded to the outbreak with two rounds of novel oral polio vaccine type 2 (nOPV2) in three provinces (Aceh, North Sumatra and West Java) between November to June 2023. The first outbreak response assessment (OBRA) was conducted in July 2023 to evaluate the country's initial response to the outbreak.

In late 2023, further cases from the original outbreak were detected in Central Java and East Java, with a further case in East Java in mid-2024.

In addition to the initial outbreak, a second outbreak of cVDPV2 derived from nOPV2 was detected in Highland Papua and South Papua in early 2024, with additional cases in South Papua and Central Papua detected in mid-2024. This outbreak spread further to North Maluku, with a case detected in mid-2024. The most recent case detected was of cVDPV2n with date of onset 27 June 2024 in South Papua.

The National Programme and partners have implemented several of the recommendations of the first OBRA. Major outbreak response and risk reduction activities have been carried out in Indonesia in 2023 and 2024, with every province conducting two rounds of immunization campaigns using nOPV2. There have been serious efforts to improve surveillance quality, especially in the provinces first affected by the outbreak. A second OBRA was conducted in December 1–7, 2024, by a team consisting of independent international assessors constituted of GPEI partners (UNICEF, BMGF, US-CDC, USAID, WHO), taking into account all developments in formulating conclusions and recommendations.

OBRA objectives

Overall objective:

To assess the quality of the response to the poliovirus outbreak in Indonesia, to make conclusions on the status of the outbreak and the response, and to make recommendations to the Government of Indonesia and Partners for further action.

There were five main areas of assessment:

- Outbreak response planning, management, & coordination
- Capacity to detect poliovirus
- Population immunity
- Communication and community engagement
- Vaccine management

Specific objectives:

1. To assess coordination, planning and use of resources for the outbreak response
2. To assess the performance and sensitivity of AFP and Environmental Surveillance
3. To assess population immunity by reviewing: a. quality of SIAs and coverage of routine immunisation
4. To assess the adequacy of communication and social mobilization strategies and activities
5. To assess the management of nOPV2 vaccine

Methodology

An online orientation meeting was conducted for the OBRA team. The schedule and placement of the members were finalized, and a desk review on surveillance, SIA, and routine immunization data was conducted.

The OBRA team was divided into six smaller teams for the field visits. Initial briefing on the objectives of the OBRA was done at the national and provincial levels. Field visits to six provinces and 12 districts, two districts within each province, were conducted. The teams were accompanied by staff of the Ministry of Health (MoH) and key local partners such as WHO, UNICEF, US-CDC and USAID Indonesia. Two puskesmas and a hospital in each district were visited, and key informant interviews along with a review of key documents and data collection tools were performed at the district, puskesmas and the district hospitals.

Based on the observations and findings, feedback was given to the districts and provinces. The findings and results from the provinces were then analyzed, and the results were compiled. This was followed by a final national-level debriefing to MOH and GPEI partners, where conclusions and recommendations from the second OBRA were presented.

Fig. 1. Provinces and districts visited during second OBRA, Indonesia, 2024

Table 1. Puskesmas and hospitals visited

Province	District	Puskesmas	Hospital
Maluku Utara	Kota Ternate	Kalumata and Siko	RSUD dr. Chasan Boesoirie
	Halmahera Selatan	Labuha and Ganda Suli	RSUD Labuha
Jawa Timur	Kota Surabaya	Tanakalikedinding and Ngagelrejo	RS Husada Prima Surabaya
	Bangkalan	Bangkalan and Burneh	RSUD Syamrabu
Banten	Serang	Baros and Kramatwatu	RSUD Drajat Prawiranegara
	Pandeglang	Cibaliung and Kaduhejo	RS Aulia Menes
Kalimantan Tengah	Kapuas	Melati and Palingkau	RSUD dr. H. Soemarno S.
	Kota Palangkaraya	Marina Permai and Panarung	RS Doris Silvanus
Sulawesi Utara	Kota Manado	Bahu and Tuminting	RSUP Prof. Kandou
	Minahasa	Pineleng and Tumaratas	RSUD Sam Ratulangi Tondano
Papua Barat	Manokwari	Sanggen and Wosi	RSUD Manokwari
	Manokwari Selatan	Ransiki and Oransbari	RS Elia Waran

Findings

1. Outbreak response coordination and planning

Indonesia has continued to respond appropriately to the outbreaks of cVDPV2. The national management structure for the response continues to function well to coordinate the response. The Provincial management and coordination structures were established and functioned in most provinces, however these structures were weak in some key high risk provinces. The review team observed inter-sectoral cooperation and also close cooperation between government staff and partner agencies working on the outbreak response activities.

2. Capacity to detect poliovirus:

2:1. AFP surveillance: Progress

Surveillance sensitivity for the detection of AFP cases has improved considerably in 2023 and 2024, with nearly every province achieving high overall AFP case detection. The national non-polio AFP rate in 2023 was 6.65/100 000 under-15 population, with 83% of districts having an NPAFP rate of ≥2/100 000 and 76% of districts having an NPAFP rate of ≥3/100,000. In 2024 (preliminary data), the national NPAFP rate was 5.51/100 000 under-15 population, with 74% of districts having an NPAFP rate of ≥2/100 000 and 63% of districts having an NPAFP rate of >3/100 000 population. There was only one silent province in 2023 and none in 2024.

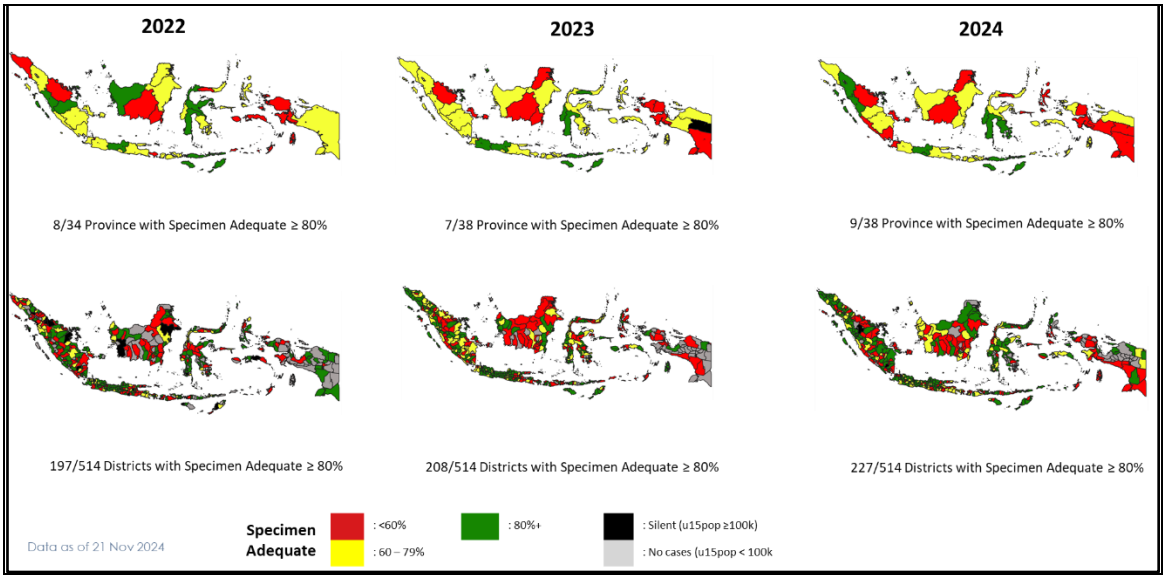
In 2023, three provinces (Aceh, North Sumatra and West Java) were prioritized for technical support, and these provinces have consistently improved surveillance quality. Monthly surveillance review meetings are being held at the national level to analyse indicators and identify issues.

Fig. 2. Non-polio AFP rate, Indonesia, 2023 (Data as of 31 October 2024)

Fig. 3. Non-polio AFP rate, Indonesia, 2024 (Data as of 21 November 2024)

The overall timeliness of the surveillance indicators in 2024 showed improvement compared to 2023. However, variations in the quality of key surveillance indicators, including timeliness of reporting, investigation, sample shipment, and completeness of case investigation, were observed at the province and sub-province levels. Some provinces (e.g. Jakarta, Kalimantan Tengah) had significant delays in reporting, while delays in specimen transport were observed in other provinces (e.g. Kalimantan Selatan and Sulawesi Tenggara).

Fig. 4. Adequate specimen by provinces and districts, Indonesia 2022-2024 (Data as of 21 November 2024)



Adequate stool specimen collection is still low at national and provincial level. More than 80% Stool specimen adequacy was present in only 7 out of 38 provinces and 208 out of 514 districts in 2023. Similarly, in 2024 the specimen adequacy of ≥80% was in 9/38 provinces and 227/514 districts. There were 13 provinces with stool specimen adequacy of <60%. The main reasons for inadequacy were late collection, poor quality or <2 stool samples. (Table 2)

Fig. 5. AFP surveillance timelines (Data as of 21 November 2024).

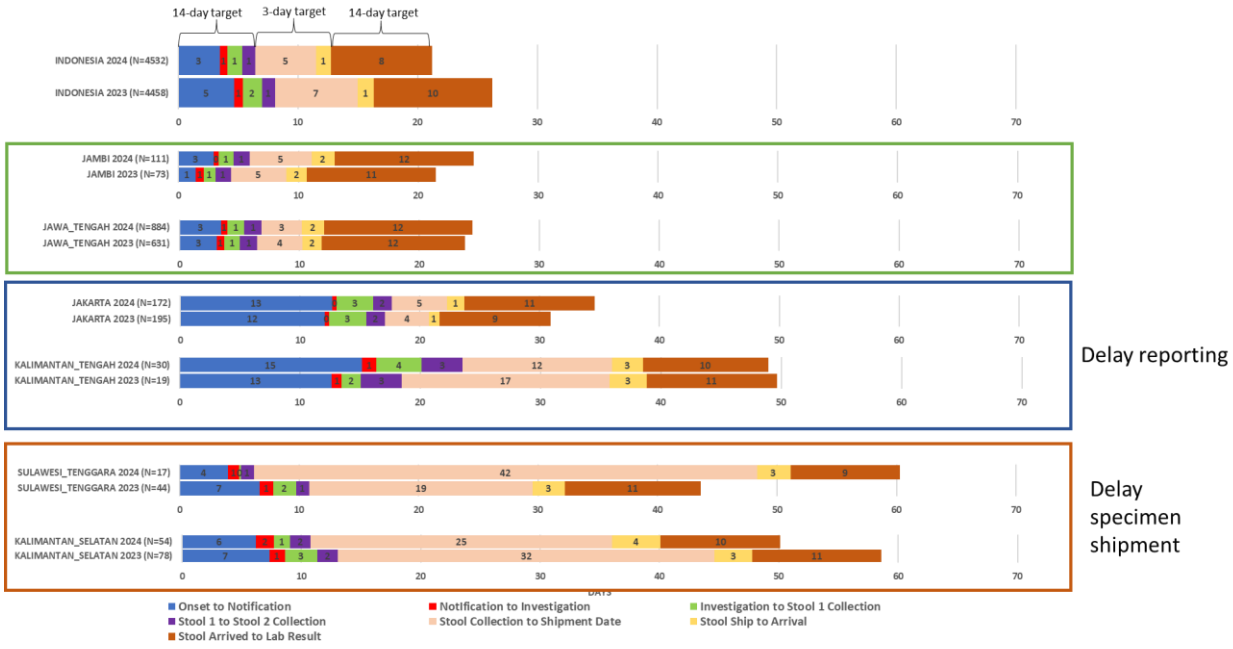


Table 2. Provinces with <60% adequate specimens 2024 and reasons (Data as of 21 November 2024)

No.	Province	2023		2024		NPEV 2024 (%)	Among Inadequate Specimen (2024)				%AFP cases with 2 stools
		NPAFP Rate	Specimen Adequacy (%)	NPAFP Rate	Specimen Adequacy (%)		#AFP cases with inadequate Specimen	%late collection	%poor condition	%no stool / one stool	
1	Riau	3.35	44.8	2.06	45.5	11.1	36	41.7	58.3	13.9	92
2	Bengkulu	5.67	79.3	2.54	57.1	21.4	6	66.7	33.3	0.0	100
3	Bangka Belitung	4.27	43.8	3.99	41.7	0.0	14	42.9	57.1	7.1	88
4	Lampung	5.97	67.7	3.16	54.8	5.4	52	63.5	53.8	1.9	99
5	DKI Jakarta	8.03	45.1	5.41	38.4	2.6	106	48.1	29.2	33.0	77
6	Banten	6.52	72.1	3.09	55.4	7.5	74	45.9	48.6	13.5	92
7	Kalimantan Tengah	2.66	26.3	1.40	53.3	0.0	14	100.0	7.1	0.0	100
8	Kalimantan Selatan	6.91	44.9	3.19	53.7	3.8	25	56.0	56.0	4.0	94
9	Kalimantan Utara	6.26	35.7	4.01	54.5	0.0	5	80.0	60.0	0.0	91
10	Gorontalo	3.72	81.8	2.37	43.8	14.3	9	100.0	0.0	0.0	100
11	Papua Barat	2.45	16.7	6.12	58.8	5.9	7	42.9	28.6	14.3	82
12	Papua Tengah	0.65	66.7	0.98	37.5	12.5	5	40.0	80.0	0.0	100
13	Papua Pegunungan	0.00	0.0	0.00	50.0	0.0	2	50.0	50.0	50.0	75

The review team found evidence that some AFP cases accessing the health system are not being reported. Active surveillance in key reporting sites, especially the hospitals, is not yet implemented properly. At the hospitals, the hospital management and clinical staff are not fully oriented on AFP surveillance activities, and the surveillance officers often do not know how to conduct an active surveillance visit effectively.

Proper utilization of data to identify and prioritize under-performing areas and develop specific improvement plans was not observed.

Only seven provinces met the 10% target for NPEV-positive AFP cases, while eight provinces had zero NPEV-positive AFP cases. However, the country's laboratories isolated Sabin-like virus (in 14 districts within 13 provinces) and n-OPV2 in 139 districts within 24 provinces, demonstrating the capacity for poliovirus detection.

Fig. 6. Percentage of NPEV positive AFP cases, Indonesia 2024 (Data as of 21 November 2024)

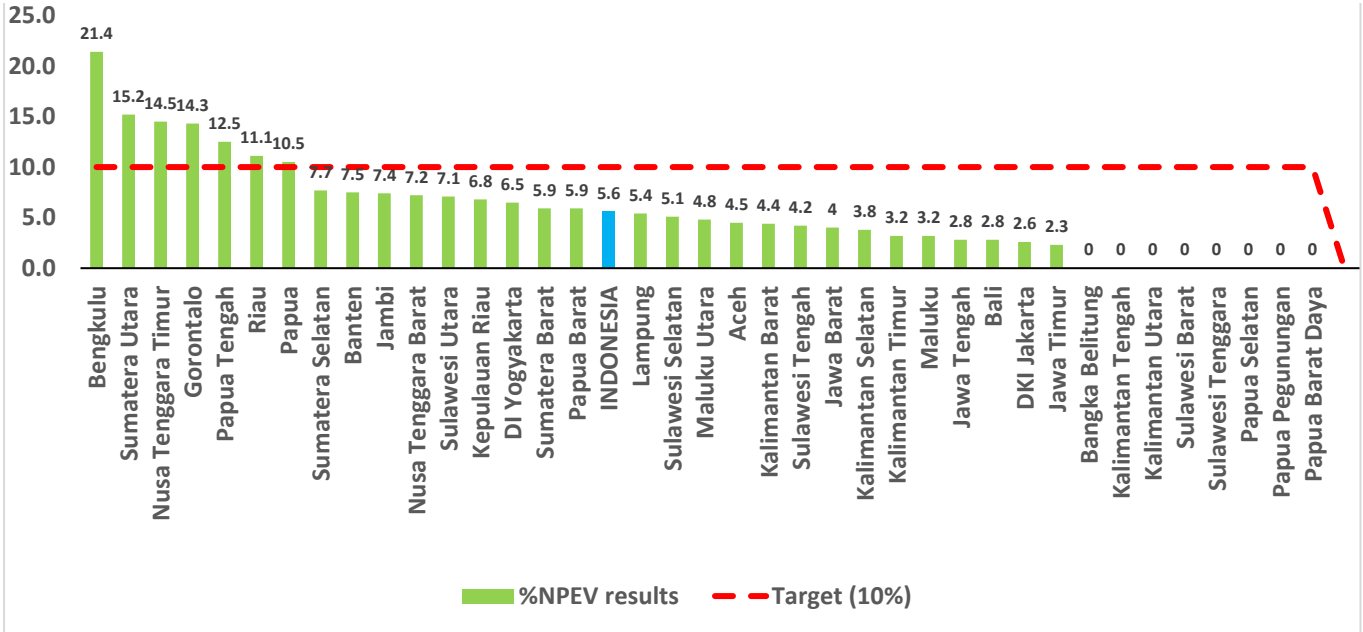


Fig. 7. Sabin-like isolation in AFP cases, 2024 (Data as of 21 November 2024)

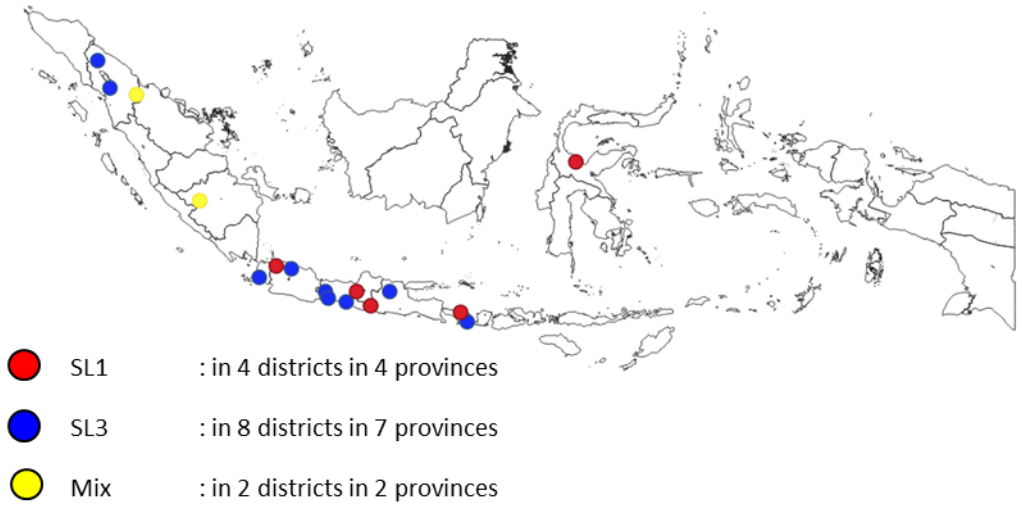
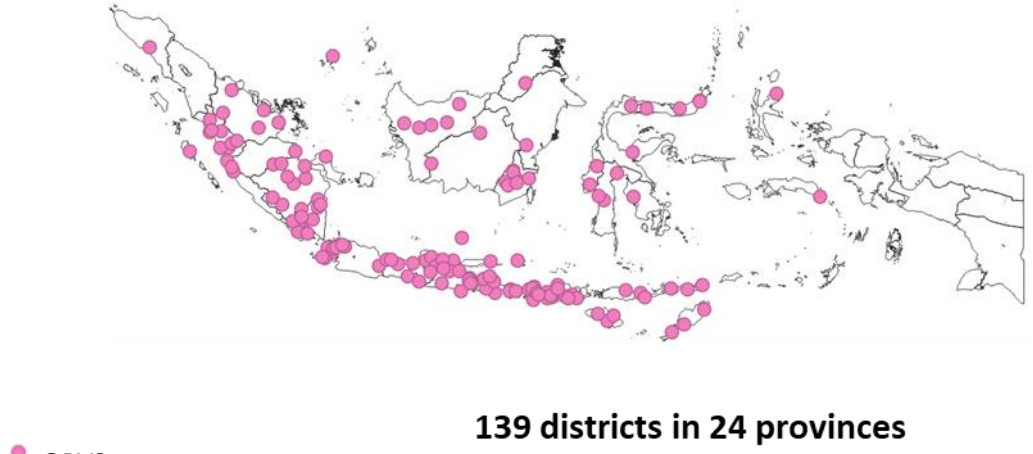


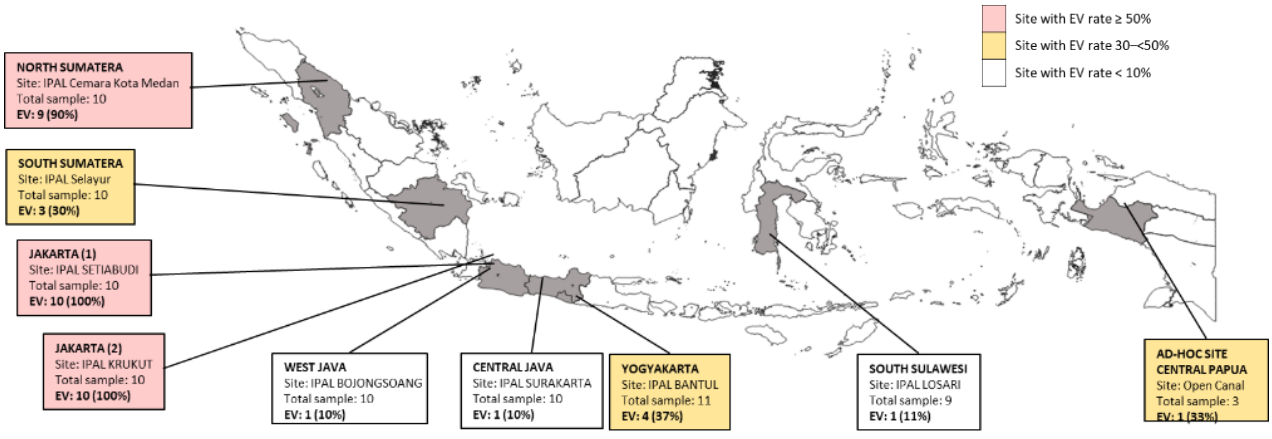
Fig. 8. nOPV2 isolation in AFP cases, 2024 (Data as of 21 November 2024)



2:2. Capacity to detect circulating poliovirus through Environmental surveillance

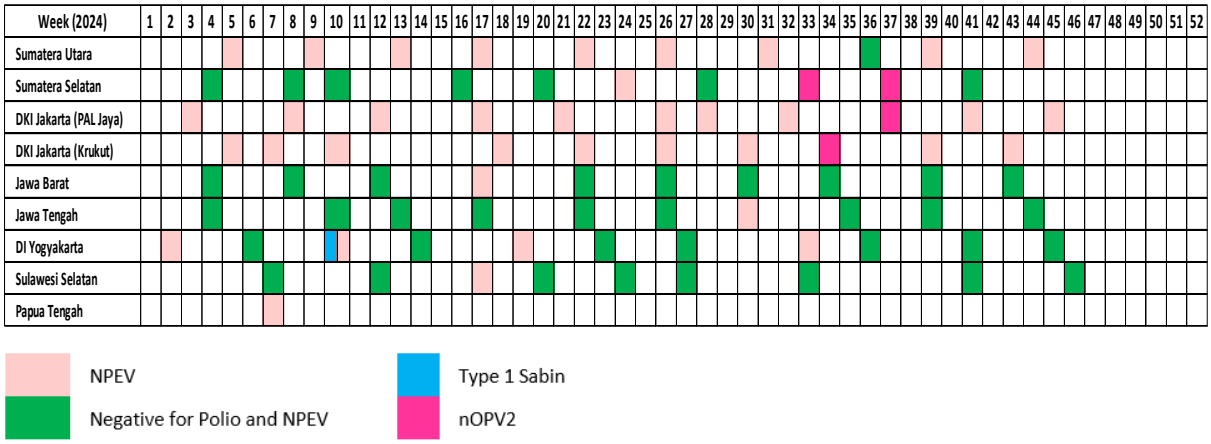
The environmental surveillance system is well established, however collection from some sites has been irregular. Sites are distributed nationwide, although population coverage is not yet optimal (particularly higher risk areas).

Fig. 9. Environmental surveillance sites, Indonesia 2024 (Data as of 5 December 2024)



The non-polio enterovirus detection rate in the environmental sample (an indicator of how appropriate collection sites are) has met the target at the national level (50.6%) but is still quite variable among sites. The sites in North Sumatra, Jakarta Setiabudi, and Jakarta Krukut have met the target. Some sites that were performing well have stopped taking samples because of a lack of funds (e.g., East Java).

Table 3. Performance of Environmental Surveillance sites in 2024 (Data as of 5 December 2024)



3. Population Immunity, SIA quality and routine immunization

3:1. The quality of the immunisation response to the outbreak

Every province has now done at least 2 campaign rounds with nOPV2. The response rounds have been of variable quality, with some provinces achieving high coverage and others with mixed results. The overall reported SIA coverage (as of November 2024) achieved was 94.3% in the first round and 91.1% in the second round.

In some areas, more children were found than expected, and in some areas, less children; this suggests issues with existing denominators. In some high risk provinces coverage was lower in the second round than in the first round.

Table 4. Target and SIA coverage (as of 23 November 2024)

Province	Period	Age	Number of target population	Round 1		Round 2	
				Number vaccinated	Percentage	Number vaccinated	Percentage
Aceh	28 Nov 2022 – 12 March 2023	0-12 years	1,217,939	1,180,322	96.9%	1,153,310	94.7%
North Sumatra	13 Feb – 30 May 2023	0-59 months	1,346,655	1,294,171	96.1%	1,276,852	94.8%
West Java	3 April – 22 June 2023	0-59 months	3,984,797	3,834,634	96.2%	3,676,799	92.3%
East Java	15 Jan – 09 April 2024	0-7 years	4,437,679	4,735,572	106.7%	4,696,688	105.8%
Central Java	15 Jan – 09 April 2024	0-7 years	3,903,678	3,991,363	102.2%	3,899,509	99.9%
Sleman (DIY)	15 Jan – 09 April 2024	0-7 years	149,821	115,659	77.2%	111,407	74.4%
Papua Region	27 May – 15 Nov 2024	0-7 years	865,690	516,468	59.7%	418,486	48.3%
27 Provinces	23 July - 15 Nov 2024	0-7 years	16,420,460	14,816,698	90.2%	14,204,436	86.5%
Total			**32,326,719**	**30,484,887**	**94,3%**	**29,437,487**	**91.1%**

(Denominator based on the official estimation of target population issued by **MOH**)

As per the administrative data, SIA coverage for 2 provinces in the first round and 8 provinces in the second round was <70%. However, the post-campaign RCA result shows < 70% coverage only in one province in the second round and none in the first round.

Table 5: Data Comparison Administrative Coverage and RCA Result Post Campaign of nOPV2 SIA in East Java, Central Java and Sleman district Yogyakarta (as of November 28, 2024)

Province	Dose 1 (Administrative report)	Dose 2 (Administrative report)	Dose 1 (RCA)	Dose 2 (RCA)
East Java	106.7%	105.9%	99.3%	97.1%
Central Java	102.1%	100.1%	97.3%	91.9%
Sleman District, DI Yogyakarta	78%	76%	100%	99.6%

Table 6. Data comparison of administrative coverage and RCA result post-campaign of nOPV2 SIA (as of 28 November 2024)

No	Province	Dose 1 (Administrative report)	Dose 2 (Administrative report)	Dose 1 (RCA)	Dose 2 (RCA)
1	BANTEN	102.5%	101.9%	98.9%	94.8%
2	JAKARTA	99.7%	99.8%	99.6%	90.9%
3	PAPUA BARAT	99.5%	97.0%	99.9%	97.6%
4	SUMATERA SELATAN	98.9%	98.5%	100.0%	99.1%
5	SULAWESI SELATAN	96.6%	96.1%	96.8%	88.6%
6	SULAWESI TENGAH	94.8%	89.2%	94.9%	83.5%
7	JAMBI	93.4%	90.3%	97.6%	93.3%
8	KALIMANTAN SELATAN	92.8%	90.2%	94.5%	79.1%
9	NUSA TENGGARA BARAT	92.7%	91.3%	99.8%	98.1%
10	BALI	90.8%	85.9%	99.2%	97.6%
11	KALIMANTAN TENGAH	90.3%	87.4%	96.4%	84.2%
12	KALIMANTAN UTARA	89.6%	74.3%	86.4%	74.4%
13	PAPUA BARAT DAYA	89.2%	76.9%	89.8%	81.5%
14	MALUKU	88.2%	84.4%	96.8%	90.5%
15	KEPULAUAN BANGKA BELITUNG	87.9%	84.7%	98.2%	96.7%
16	RIAU	87.2%	82.3%	96.2%	88.2%
17	LAMPUNG	84.9%	84.1%	99.3%	95.8%
18	KALIMANTAN BARAT	83.6%	77.7%	92.5%	81.7%
19	DAERAH ISTIMEWA YOGYAKARTA	82.1%	80.7%	99.8%	96.2%
20	MALUKU UTARA	81.1%	69.1%	96.8%	90.3%
21	SUMATERA BARAT	80.8%	75.8%	94.7%	90.4%
22	NUSA TENGGARA TIMUR	80.6%	75.0%	98.8%	92.8%
23	KALIMANTAN TIMUR	79.7%	62.2%	94.3%	80.1%
24	KEPULAUAN RIAU	79.6%	72.8%	95.5%	92.3%
25	PAPUA SELATAN	78.9%	58.0%	97.5%	89.9%
26	SULAWESI BARAT	74.8%	53.9%	92.0%	66.3%
27	SULAWESI UTARA	74.2%	61.0%	96.5%	94.0%
28	BENGKULU	72.1%	64.7%	98.0%	94.1%
29	PAPUA	67.7%	56.1%	97.0%	92.2%
30	PAPUA TENGAH	48.5%	37.3%	82.7%	78.3%

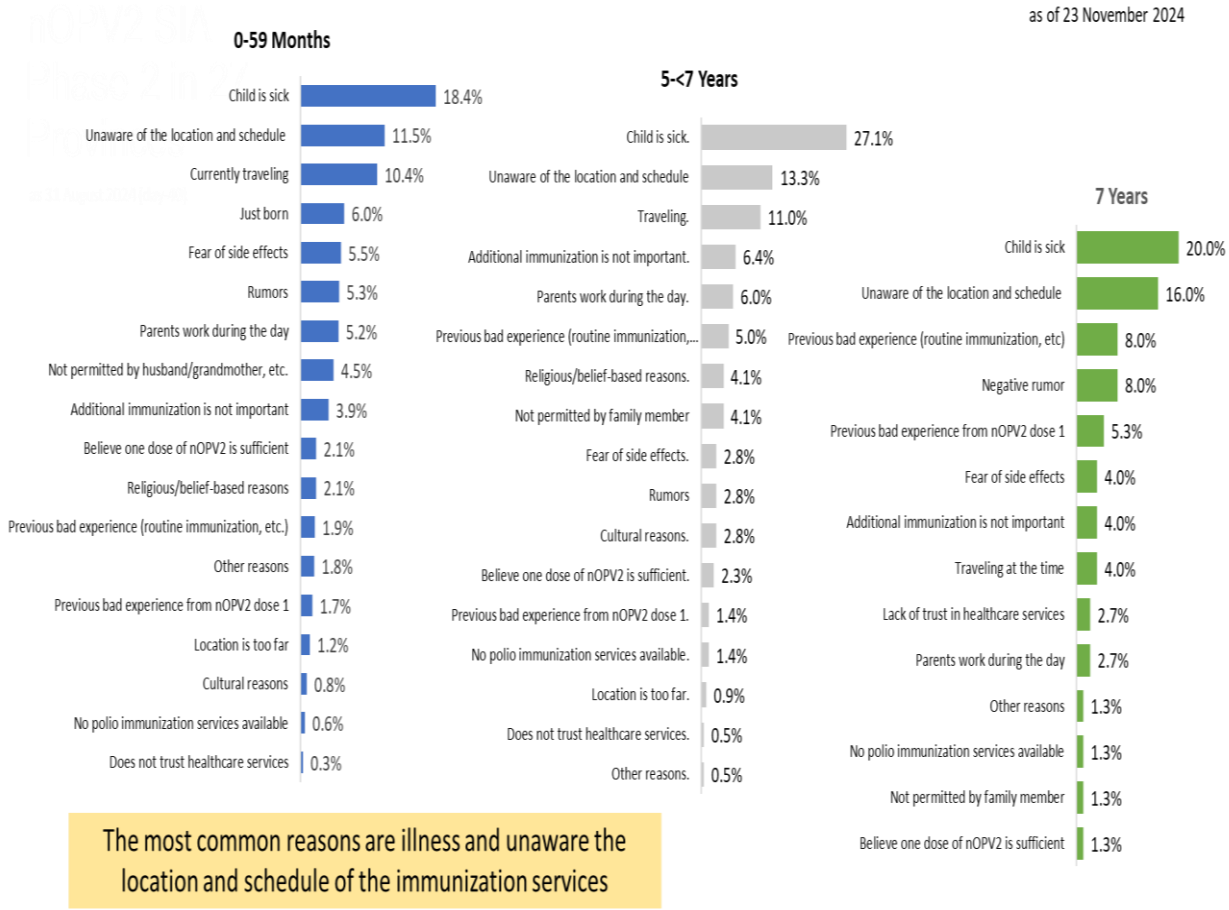
RCA was conducted during and after campaign rounds as a separate check on quality. The coverage data from the RCA conducted by the Internal and external teams were higher than the administrative coverage data in most provinces (Tables 5 and 6). However, RCA was not extensive enough and needs to be more independent.

Table 7. Summary RCA result of nOPV2 SIA in Indonesia in 2024

Detail	Intra Campaign (Round 1)	Intra Campaign (Round 2)	Post Campaign (Round 2)
Greater Papua and 27 provinces			
Total RCA	395	955	1 232
Total province	21	30	30
Total district	72	142	191
Total Puskesmas	216	532	682
Total houses visited	8 028	20 198	25 296
Total children 0–7 Years	11 172	26 965	33 541
1st dose vaccinated	10 243 (91.7%)	25 167 (93.3%)	32 492 (96.9%)
2nd dose vaccinated	NA	23 303 (86.4%)	30 245 (90.2%)
Just received 1st dose during RCA	241	169	332
Just received 2nd dose during RCA	NA	533	689
RCA result by internal team (MOH, PHO, DHO, puskesmas)	Dose 1: 91.8%	Dose 1: 94.4% Dose 2: 89.5%	Dose 1: 97.3% Dose 2: 91.4%
RCA result by external team (WHO, UNICEF, partners)	Dose 1: 90.9%	Dose 1: 90.5% Dose 2: 78.5%	Dose 1: 93.4% Dose 2: 82.5%

The post campaign analysis in 33 provinces showed that the most common reasons for children not being vaccinated were illness and unawareness about the location and schedule of the immunization services. This further emphasizes the need for strengthening social mobilization, advocacy and awareness activities.

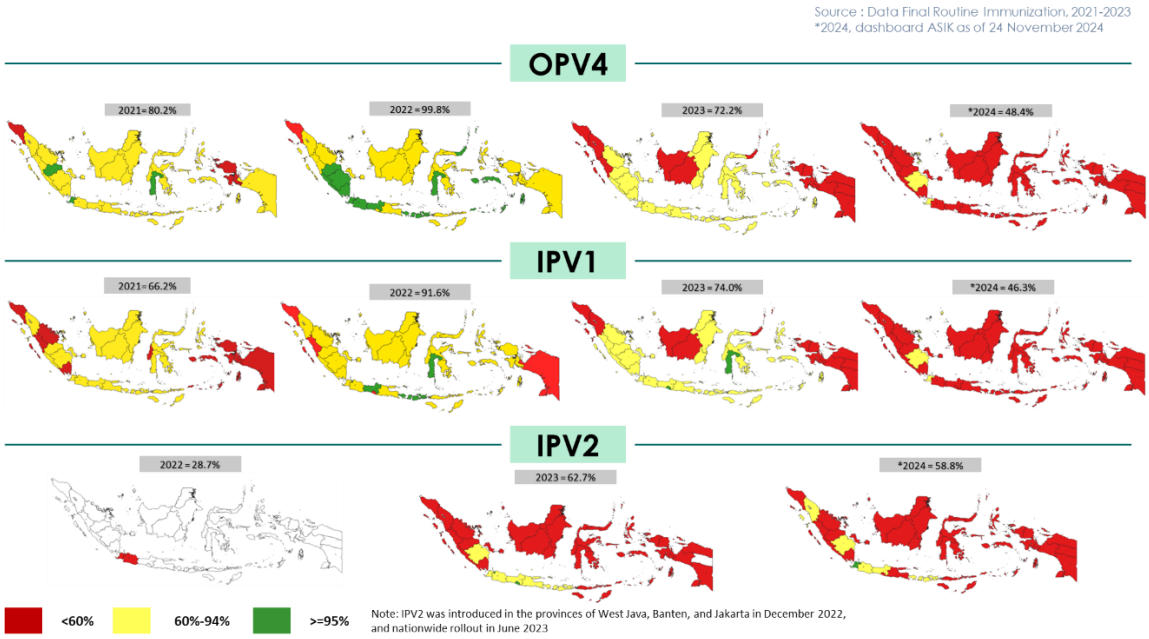
Fig. 10. Unvaccinated reasons by age group (post-campaign) in 33 provinces



3:2. Immunity and routine immunisation

Indonesia ranked 6th in the most zero dose children globally in 2023. Routine immunization coverage is variable, with some provinces achieving high rates and others struggling. Nationally, coverage of infants with 4 doses of OPV and one dose of IPV has not yet consistently reached above 90%. Although a second dose of IPV was introduced in 2023, coverage has not yet reached significant levels. There is evidence of pockets of low coverage in a number of provinces, some due to vaccine hesitancy and others to operational issues.

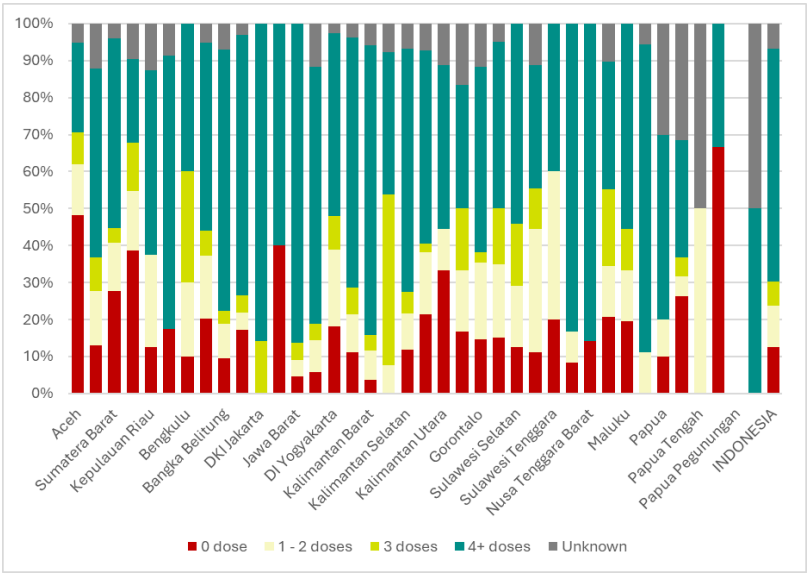
Fig. 11. Routine immunization coverage 2021–2024



Issues of vaccine stock out, poor coordination between the districts and Puskesmas level in terms of vaccine supply were observed in some places.

The planned introduction of hexavalent vaccine in 2025 is likely to have a major positive impact on immunity against all three poliovirus types, if high coverage can be achieved.

Fig. 12: Polio immunization history of NPAFP Cases Aged 6 - 59 months, Indonesia 2024



Looking at the immunisation coverage among the NPAFP cases, which can provide a proxy for immunization coverage, there remain children with incomplete doses and zero doses for OPV and IPV. However, the review team identified several situations where reporting of immunization history in the case investigation forms was incorrect. This aspect of case investigation needs improvement before these figures can reliably be used to cross check immunization coverage estimates.

Table 8. NPAFP Immunization Status (random review of five NPAFP cases from five different districts in Aceh Province)

Sex	Age		District	Province	Paralysis onset	Immunization status (case investigation)				Immunization status (ASIK)			
	Year	Mo				OPV	IPV	Polio SIA/ORI	Total	OPV	IPV	Polio SIA/ORI	Total
M	2	10	KOTA_SABANG	ACEH	20-Sep-24	0	0	0	0	4	0	2	6
F	2	10	ACEH_BESAR	ACEH	3-Jan-24	0	0	0	0	4	0	0	4
M	11	2	PIDIE	ACEH	6-Jan-24	1	Unknown	0	1	0	0	0	0
F	2	8	ACEH_TIMUR	ACEH	19-Jan-24	2	0	0	2	3	0	1	4
M	2	1	ACEH_TENGAH	ACEH	15-Jul-24	4	0	0	4	4	2	1	7

4. Advocacy, communication, community engagement

4:1. Community engagement – Polio campaigns

The OBRA team found evidence of efforts to engage communities and to effectively communicate about the outbreak and the response activities; however the quality of these efforts varied between provinces.

President supporting the polio programme

In some provinces advocacy, community engagement, and social mobilization plans were developed, and local community networks were mobilized and engaged. Good use of local mass media and digital communication channels were also observed in some areas. In general, there was evidence of high awareness and vaccine acceptance in communities. However, there is also strong evidence of pockets of vaccine hesitancy in some communities, and serious issues in some provinces (e.g. North Maluku).

Polio information, education and communication

Communication challenges remain particularly for these vaccine hesitant communities, and for special populations. The President's support for the Polio SIAs was very positive and the use of Polio Information Education and Communication materials also helped in engaging the community. Some provinces (e.g. Madura) conducted specific activities to address community concerns which led to high campaign coverage.

Addressing community concerns

4:2. Community engagement – routine immunization

Variations in community engagement between provinces with respect to routine immunization was observed. Some provinces present significant challenges and will require a specific and deliberate approach. Challenges include communicating effectively on the need for multiple antigens to be given during the same immunization session and on the common adverse events following vaccination.

Good information on the real barriers in community engagement and acceptance is still not available for every province and specific efforts to better understand the challenges are still necessary.

5. Vaccine management

The security of vaccine storage and shipment in the Polio SIAs was variable. In some provinces and districts, personnel do not have adequate knowledge of cold chain principles. Cold chain Equipment is also variable, with some provinces having equipment issues, in particular availability of vaccine carriers and specimen carriers.

Tracking of nOPV2 vaccine use and vaccine stocks is sub-optimal in some areas, with vials reported as missing or lost to tracking; this is a serious problem for nOPV2.

Several provinces are awaiting guidance from national level on what to do with remaining stocks of nOPV2.

Overall conclusions

Outbreak status

It is too early to say that the cVDPV2 outbreaks have been stopped. The surveillance quality is not yet good enough for us to be confident that we can find all circulating virus.

The risk of continued circulation has been lowered by the extensive immunization campaigns conducted, but despite the campaigns, data still shows a lot of under-immunized children; hence the risk is still present. The greatest risk of continued circulation is in high-risk areas of Eastern Indonesia, particularly the provinces of Papua, and North Maluku. The risk of new circulation occurring is highest in those provinces with sub-optimal surveillance and immunization coverage.

Actions to date

The Government and partners have conducted appropriate large-scale immunization activities in response to the cVDPV2 outbreaks. Efforts to improve surveillance in 2023 and 2024 have resulted in significant improvements in case detection, although there remain major issues with adequate specimen collection in several provinces.

Government and Partners have deployed surge technical support staff in priority areas to support Provincial and District control efforts.

Recommendations

1. Responding to the outbreak

1.1 The Review Team does not recommend that further large-scale response immunization rounds be planned at this stage. However, the national program must remain vigilant and flexible and be prepared for rapid targeted rounds if more virus is detected.

1.2 Remaining stocks of nOPV2 should be consolidated at national level to ensure that a rapid response can be carried out if any further circulation of virus is detected.

1.3 All opened and used vials should be safely disposed of according to WHO guidelines* and appropriate reports of vaccine management should be provided by every province.

* https://polioeradication.org/wp-content/uploads/2022/10/nOPV2-vaccine-handling.pdf

2. SIA quality improvement if there is further detection of cVDPV2

2.1 Building on the experience and lessons of the rounds conducted so far, planning for any further response rounds should emphasize on the following points:

- Reaching every child, house to house wherever possible, rather than meeting denominator targets.
- Ensuring Governors and Bupatis are fully engaged and the machinery of local government is committed to the activity.
- Ensuring funds are available to effectively carry out the activity.
- Identifying high risk populations, where they exist, to engage and reach them; in particular, to identify vaccine hesitant communities and devise specific strategies to address them.
- Expanding rapid community assessments and carrying them out systematically to inform quality improvement.

3. Ensuring that the virus can be detected

3.1 The 13 provinces with <60% adequate specimen collection should be prioritized for intervention to improve this and other indicators.

3.2 National and partner staff should work with each province to identify issues and develop specific plans to address them, by the end of Q1 2025. Priority should be given to provinces with recent evidence of transmission.

3.3 Priority Provinces should be supported by national or partner technical staff stationed at province level, until improvement plans are fully implemented.

3.4 Monthly review meetings at national and province level should continue to prioritize assessment of key indicators, identification of issues, and development of solutions.

3.5 The planned update of national AFP surveillance guidelines should include a new section on active surveillance processes, explaining what active surveillance is, how sites should be prioritized, and how active surveillance visits should be carried out.

3.6 Active surveillance should be strengthened through sensitization of hospital managers and clinicians, specific sensitization sessions for all key hospitals, ensuring that managers and clinicians understand AFP surveillance and the active surveillance process.

3.7 Proper training and briefing sessions should be conducted for the surveillance officers responsible for active surveillance, in all aspects of how to conduct site visits, including interaction with clinicians.

3.8 Supportive supervision at all levels: National to Province, Province to District, District to Puskesmas, focusing on surveillance issues and the active surveillance process is needed.

3.9 Interactive learning tools should be developed and made accessible for health staff to help them understand their role in surveillance.

3.9.1 The tools for all the health staff should focus on how to investigate an AFP case properly, including examining the child, filling in the investigation form correctly, and taking samples and how to conduct a 60 day follow up examination.

3.9.2 For the surveillance officers the tools should focus mainly on how to properly conduct an active surveillance visit, including interacting with clinicians and examining registers, and how to conduct an investigation to find out why a case is not immunized or not fully immunized, and to develop a plan to address this.

3.10 The national programme should engage with the three National Polio Laboratories to ensure there is full availability of all requirements to continue to provide fast and reliable results in the context of increasing AFP investigations.

3.11 Monthly meetings on surveillance at national level must include laboratory representatives to ensure that information is shared and any issues for lab support are identified and resolved.

3.12 The review team notes that environmental surveillance sites are regularly reviewed, and emphasizes that sites with low enterovirus detection rates should be investigated and, if necessary, moved or closed while the sites providing good information should be resourced to ensure that they can remain active (e.g. East Java).

4. Building immunity

4.1 The country should use the experience of the polio campaigns to strengthen delivery of routine immunization services. In the situation where additional children (more than the defined target) were found in any province during the PINs, these children need to be added to registers and included in routine immunization and PIRI catch up rounds. Similarly, if less children were found than expected, investigation is needed to ensure that children have not been missed.

4.2 Identification and community mapping should be performed where vaccine hesitancy is an issue, specific behavioural investigations on the barriers to routine immunization should be carried out to inform better efforts to engage populations and ensure appropriate strategies are identified and implemented.

4.3 Provinces with low immunization coverage in polio campaigns and in routine immunization should be prioritized for PIRI rounds in 2025. These rounds provide an excellent opportunity to give IPV to children who have missed vaccination, to build immunity to all three poliovirus types. Outbreak investigations for measles and other VPDs could be used to identify missed children and the reasons why they are missed. Tailored plans should be developed to close these immunization gaps. With the planned introduction of Hexavalent vaccine in 2025, the Ministry of Health could consider the possibility of including the 6 Papua provinces in the first series of provinces to adopt the hexavalent vaccine.

5. Planning for the next OBRA

5.1 The next OBRA focused on surveillance assessment, to ensure that no transmission is likely to be missed in the country, should be conducted around June-July 2025. The next OBRA will provide recommendations on the closure of the cVDPV2 outbreaks.

6. Specific recommendations for provinces visited

6.1 Detailed recommendations were provided to the provinces by the respective assessment teams. (Annexed)

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