



Report of the Indonesia Polio Outbreak Response Assessment – July 2023

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GPEI partnership

SEA-RCCPE

Acknowledgment

The OBRA team would like to acknowledge and express gratitude to the Ministry of Health of Indonesia for their excellent cooperation, support, and active participation in the polio outbreak response assessment. The Ministry of Health at the National level, the Provincial and District teams in Aceh, North Sumatra, and West Java and the GPEI outbreak team in Indonesia have made available data and documents to the OBRA team and responded to queries and clarifications during the assessment without which the assessment could have been very difficult. The OBRA team also would like to express true appreciation to the GPEI partners and the outbreak response and preparedness group (ORPG) for the opportunity and cooperation extended to the assessment team.

Acronyms

AFP	Acute flaccid paralysis
bOPV	bivalent oral polio vaccine
C4D	Communication for development
COVID-19	Coronavirus disease 2019
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 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
WPV3	wild poliovirus type three

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Executive Summary

Context: In November 2022, the Indonesian Government notified WHO of an outbreak of polio in Aceh Province which was associated with circulating vaccine derived poliovirus type two (cVDPV2). cVDPV2 has since been isolated from three children with acute flaccid paralysis (AFP) in Aceh and one child with AFP in West Java province, as well as from contacts of these cases. The date of onset of most recent case is 16 February 2023. The country has responded aggressively by rapidly meeting readiness requirements for novel oral polio vaccine type 2 (nOPV2) and conducting two rounds of mass vaccination campaigns in three provinces – Aceh, North Sumatra, and West Java, reaching more than 6 million children in each round, along with actions to strengthen surveillance and routine immunization.

Methods: A team of 11 independent international experts from GPEI partner agencies with support from MOH Indonesia and local GPEI staff based in Indonesia conducted the assessment. The assessment was conducted through desk review and field visits to three provinces, Aceh, North Sumatra, and West Java, including two districts in each province. The assessment was conducted in five major areas: outbreak response management and coordination; surveillance sensitivity; population immunity; advocacy, communication, and social mobilization (ACSM); and vaccine management.

Findings: The OBRA team appreciated the Government of Indonesia and partners for responding quickly and appropriately to the cVDPV2 outbreak. There was close intersectoral coordination within government and between government staff and partner agencies. While overall surveillance quality has improved post-COVID-19 pandemic, there are subnational variations in surveillance sensitivity. Surveillance quality must be more consistent to give confidence that any circulating virus will be detected quickly and reliably. The environmental surveillance (ES) system is well established; however, some sites have very low enterovirus rates that affect the quality of ES. Despite the short preparation periods, the response rounds in all three provinces have overall been of good quality. However, routine immunization coverage with inactivated poliovirus vaccine (IPV) is not yet consistently high; several provinces, including high risk provinces, have low coverage with IPV; there is therefore an ongoing risk of an immunity gap for poliovirus type 2. Community engagement was excellent for supplementary immunization activities (SIAs), however, there are variations with respect to routine immunization. The team found evidence of well managed distribution of nOPV2 and retrieval of remaining vaccine following the campaigns. Good documentation and clear accountability for the management of nOPV2 was noted.

Conclusions: The OBRA team concluded that although the outbreak response activities in Indonesia have been timely and of good quality, it is too early to say that the cVDPV2 outbreak has been stopped. Though the risk of continued circulation is declining, surveillance quality is not yet adequately consistent at subnational levels.

Recommendations: The OBRA team recommended that if there is no further detection of cVDPV2, a small follow up review should be conducted in the next 3 – 6 months, focusing on surveillance

data and quality, to recommend if the outbreak can be officially closed. The team provided specific recommendations to strengthen surveillance to ensure timely detection of any circulation and suggested measures to strengthen the routine immunization system to build population immunity by improving coverage of two doses of IPV. Additional recommendations related to each of the five assessed areas are provided below in this report. In addition, while Indonesia does not have to conduct any additional SIA with nOPV2, the OBRA team urged the country to remain vigilant and to be prepared to conduct further rapid response, should the situation arise. Detailed recommendations were provided at the provincial level to support preparations as needed.

Introduction

In November 2022, Indonesia reported isolation of circulating Vaccine-Derived Polio Virus Type 2 (cVDPV2) in a child with acute flaccid paralysis (AFP) and 4 healthy children in Aceh province, followed by isolation of cVDPV2 in two additional AFP cases in Aceh. cVDPV2 was also isolated in one AFP and seven healthy children in West Java in February 2023. The National Polio Eradication Expert Committee, and the Indonesian Technical Advisory Group on Immunization (ITAGI) recommended that the novel Oral Polio Vaccine type 2 (nOPV2) be administered to all children aged 0 months to 12 years in Aceh province and to children under 5 years of age in North Sumatra, and West Java provinces. Two rounds of SIA with nOPV2 have been completed in all provinces targeting more than 6 million children in each round.



Fig 1. Epidemiological details of 4 cases of cVDPV2 reported in Indonesia (2023)

WHA Resolution 59.1 instructs WHO to advise Member States, based on risk assessments, on additional measures necessary to reduce the spread of poliovirus following outbreaks in polio-free areas. As part of this process, independent reviews of the outbreak response are conducted by independent external teams six months after confirmation of an outbreak, and periodically thereafter until the outbreak is closed. These assessments aim to review progress in controlling outbreaks, to track progress, and to make recommendations on actions to close remaining gaps.

In Indonesia, the first Outbreak Response Assessment (OBRA) was conducted in July 2023. The OBRA was conducted in two phases: the first phase was a desk review, and second phase was field visit, to assess the actions taken to strengthen surveillance and to evaluate the quality of the vaccination response in the country. The OBRA included reviews at National Level, and at Provincial, District, Health Facility (HF) and community level in Aceh, North Sumatra, and West Java.



OBRA Objectives and Methodology

The main objective of the first OBRA was to assess the quality of the response to the cVDPV2 outbreak in Indonesia– with particular focus on SIAs quality response and the sensitivity and quality of surveillance.

Specific objectives:

1. To assess coordination, planning and use of resources (HR and finance)
2. To assess AFP/Environmental surveillance performance and sensitivity
3. To assess population immunity by reviewing:
 - a. quality of SIAs response (SIA quality results, microplans, cross border activities and independent monitoring)
 - b. routine immunization, mainly inactivated poliovirus vaccine (IPV), with focus on strategies implemented for high-risk population/areas
4. To assess if the communication and social mobilization activities are adequate for this outbreak
5. To assess if nOPV2 vaccine management is adequate

The OBRA team of 11 members consisted of GPEI partner agencies, namely, WHO, UNICEF, US-CDC, USAID, BMGF and members of the SEA-RCCPE. The teams were accompanied by staff of the Ministry of Health (MOH) and key local partners such as WHO, UNICEF and US-CDC, Indonesia (annex 1). The team focused on the outbreak zone, Aceh, North Sumatra, and West Java. The OBRA team requested data, reports and other documents related to outbreak response that included information on outbreak response management, surveillance, immunization, advocacy, social mobilization, vaccine management and related performance indicators. The Indonesia MOH, in coordination with Provincial health offices (PHOs) of Aceh, North Sumatra and West Java, provided all documents, data, and reports to the OBRA team as requested. OBRA team members divided into six sub-groups to work on specific key programme area and conducted assessments.

1. Conducted desk review of surveillance, SIA, and RI data
2. Initial Briefing: National and Provincial Level
3. Field visits including:
 - a. Key informant interviews
 - b. National and operational level (MoH, 3 Provinces, 6 Districts, health facilities, communities)
4. Reviewed key documents and data collection tools
5. Analysis and compilation of results
6. Feedback to districts and provinces visited
7. National final debriefing to MOH and GPEI partners

GPEI OBRA guidance and decision tree was consulted to formulate conclusions. The OBRA conclusions and recommendations were presented on 20 July 2023 to the Government of Indonesia and partners.

OBRA Findings

Management and Coordination

On 12 November 2022, the Ministry of Health, Indonesia notified WHO, through IHR focal point, of the isolation of VDPV2 from stool specimens collected from a child with acute flaccid paralysis (AFP). On 25 November 2022, the Ministry of Health confirmed the polio outbreak due to cVDPV2 and activated the functions of the National Emergency Operations Center (EOC) and formed a National Emergency Response Team. Regular joint MOH, WHO, UNICEF & partners meetings were held to facilitate coordination of the response and planning and implementation of response measures. The national outbreak response plan was developed. Reports were provided regularly to the Polio Emergency Committee convened under the IHR.

On 28 November 2022, WHO graded the cVDPV2 outbreak as a grade 2 emergency according to the WHO Emergency Framework. On 17 March 2023, the fourth case of the cVDPV2 outbreak was reported from West Java province. A second grading call was held on 21 March 2023 during which it was decided to maintain the emergency at Grade 2.

The Indonesian Government demonstrated sound political leadership and commitment by deploying senior officials for the emergency and led a collaborative effort involving multiple sectors within the government and partner agencies to respond to the outbreak. The WHO Representative to Indonesia, the UNICEF Representative and Deputy Representative to Indonesia, several senior officials and polio experts from US-CDC, WHO and UNICEF Regional offices made visits to Aceh at different stages of the outbreak response. These visits helped in advocacy to strengthen local government political commitment, mobilize resources, and provide technical support to the provincial and district teams. The political and administrative leaders of Aceh, North Sumatra and West Java were very engaged in leading the outbreak response and put all possible efforts into stopping the outbreak of polio.

Regular partner meetings, and briefings were conducted at provincial, national and global levels. The MoH, province and districts provided most of the financial resources that were necessary for outbreak response. Situation reports (SITREPs) were regularly shared globally.

The OBRA team concluded that Indonesia has responded quickly and appropriately to the outbreak of cVDPV2. The national management structure for the response was established rapidly and is functioning to coordinate the response. Provincial management & coordination structures were established and functioned. The review team observed close intersectoral cooperation between different sectors, and also between staff of the Government and partner agencies working on the response.

Capacity to detect circulating poliovirus (Surveillance)

Acute flaccid paralysis (AFP) surveillance

Detection of acute flaccid paralysis (AFP) cases was impacted by the COVID-19 pandemic. Analyses of the non-polio AFP rate for the last 3 years 2020, 2021, and 2022, as well as 2023 (annualized), showed improvements in 2022 and 2023.

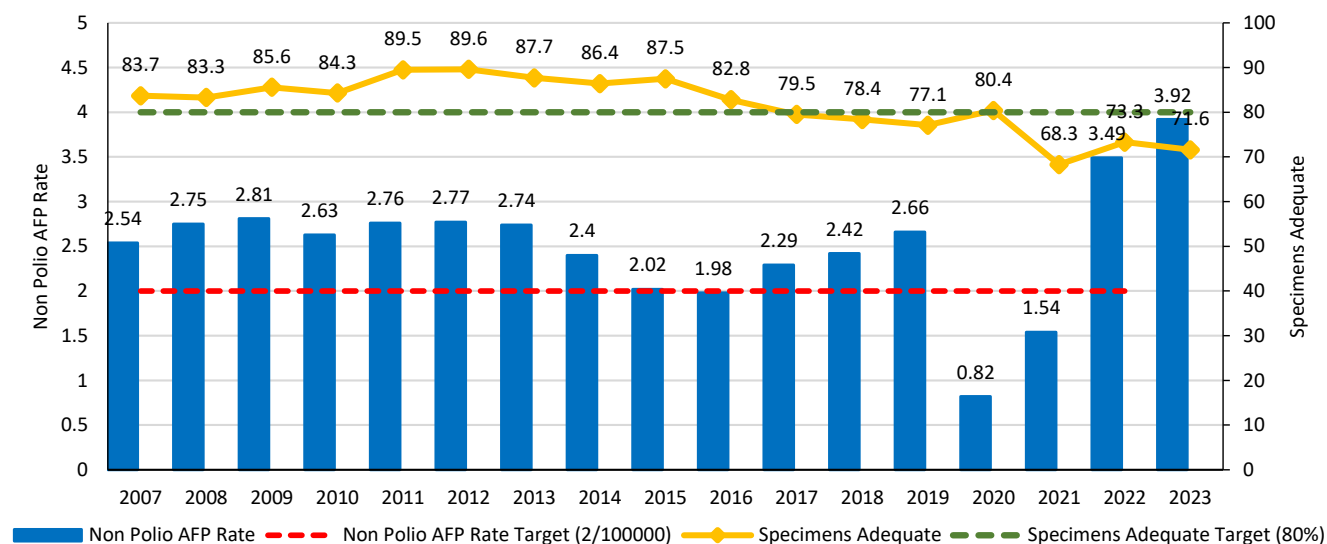


Figure 1: Non-polio AFP rate and stool adequacy, Indonesia 2007-2023

In 2022, 47% provinces achieved non-polio AFP rates of above 3/100,000 and 85% provinces achieved non-polio AFP rates of above 2/100,000. In 2023 (as of 20 July 2023), 53% provinces achieved non-polio AFP rates of above 3/100,000 and 74% provinces have achieved non-polio AFP rates of above 2/100,000. There is evidence of strong commitment of provincial, district, and local staff at health facilities to improve quality.

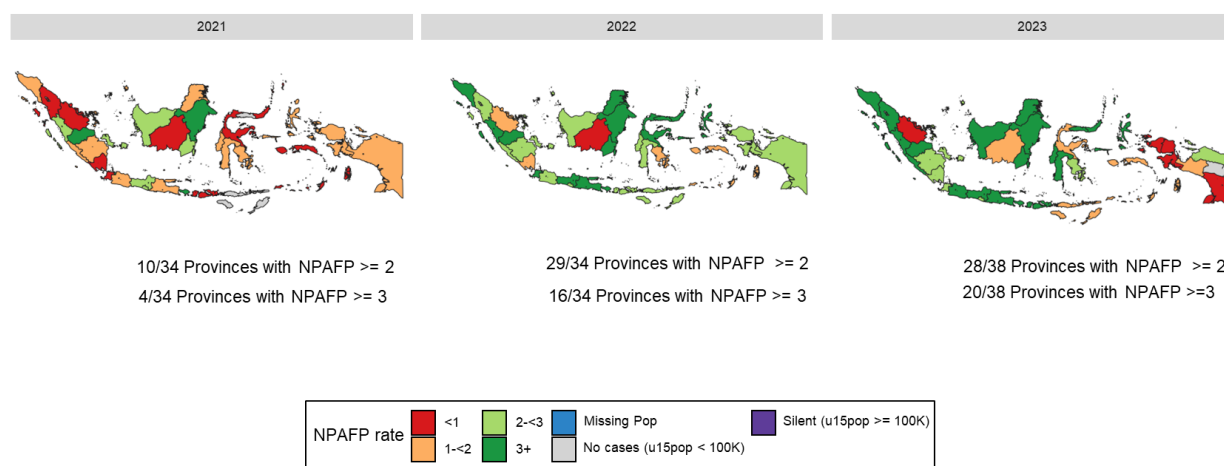


Figure 2: Maps showing province-wise non-polio AFP rate, Indonesia, 2021-2023

Despite improvements in case detection, a major concern is the low rate of timely collection of specimens from AFP cases. Just 29.4% of provinces achieved stool adequacy of $\geq 80\%$ during 2022; in 2023 (as of 20 July 2023) only 24% provinces have achieved 80% stool adequacy. This compromises the capacity for timely detection of circulating polioviruses.

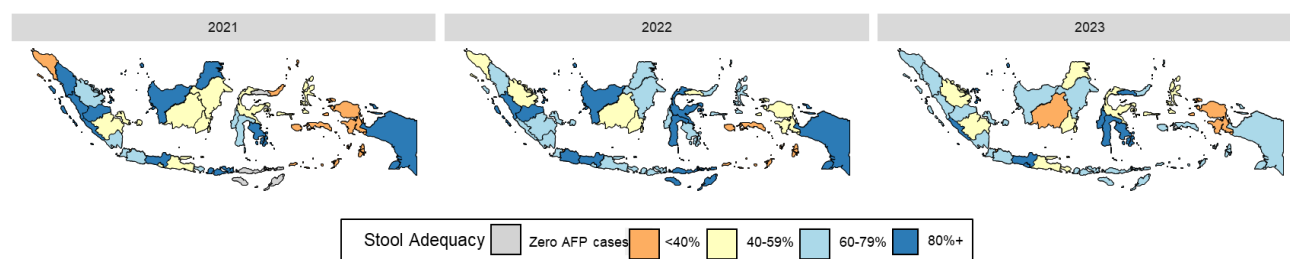


Figure 3: Map showing province-wise stool adequacy, Indonesia, 2021-2023

At national level, key indicators and timeliness of field activities are largely being met.

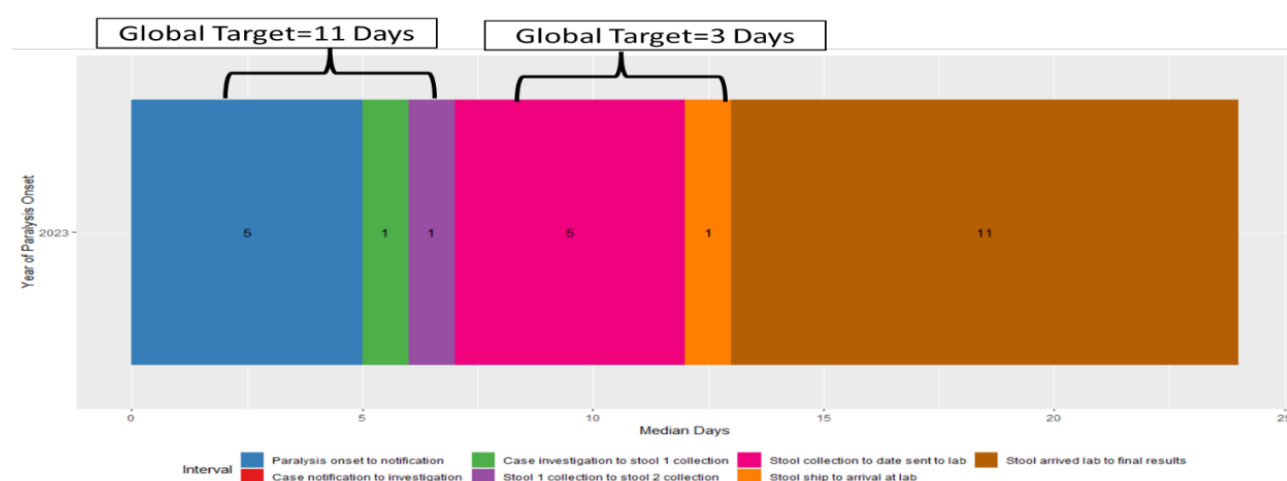


Figure 4: Nationally target met for timeliness of field activities but some small delays in shipments of samples, in 2023

However, there is variation in quality at province and sub-province level. Key indicators including adequate specimen collection rates, timeliness of reporting, investigation, and shipment of specimens to laboratories, and completeness of case investigation vary widely at sub-national level. The Review Team found evidence that some AFP cases accessing the health system are still not being reported. Prioritization of surveillance sites & active surveillance visits have only recently improved in the three provinces visited and are not yet optimal. Analysis of performance is not being adequately used to identify issues and drive support. Surveillance quality must be more consistent to give confidence that any circulating virus will be detected quickly and reliably.

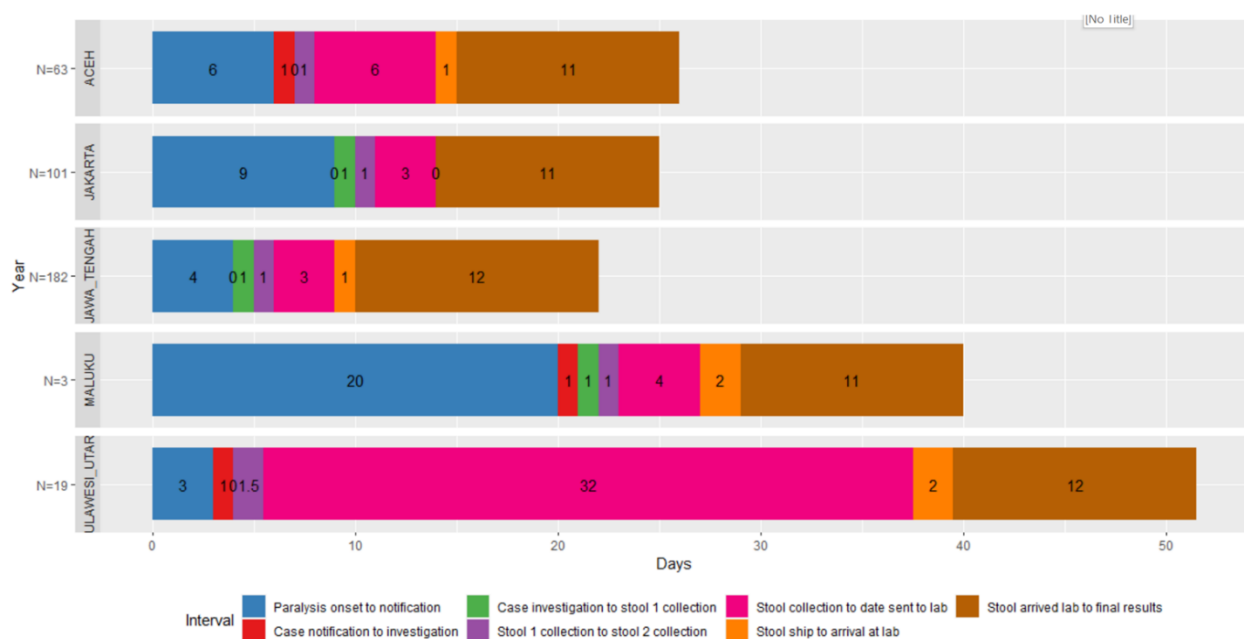


Figure 5: High variability in timeliness of surveillance activities across selected provinces, in 2023

Environmental Surveillance

The environmental surveillance system in Indonesia is well established and collection from multiple sites is relatively regular. Sites are distributed across the country, although population coverage is not yet optimal, particularly for higher risk areas. Detection of non-polio enterovirus, which is an indicator of how appropriate collection sites are, is quite variable among sites and some sites have very low enterovirus (EV) rates. Ensuring availability of supplies and reagents for laboratory testing is critical to maintain quality and timeliness despite a high workload.

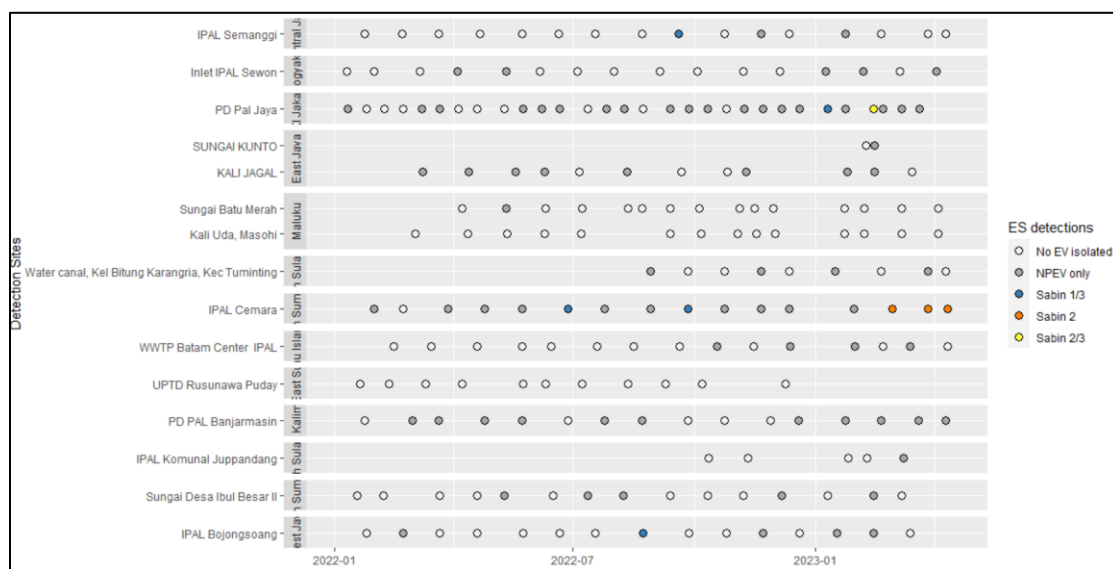


Figure 6: ES Site and Detections (April 2022-April 2023)

Population Immunity

SIA quality

The primary objective of outbreak vaccination response is to rapidly interrupt person-to-person transmission of the polio virus. Both the timing and the quality of the vaccination response are critically important. The country met nOPV2 readiness requirements in a record period of less than 2 weeks and initiated mass vaccination campaigns in a phased manner starting from the affected district on 28 November 2022. Despite the short preparation periods, the response rounds in all three provinces have overall been of good quality. There is evidence that the program learned and applied lessons, with the 2nd round being better than the 1st. In many areas, more children were found than expected, and in some areas, less children; this suggests issues with existing denominators. Rapid convenience assessment (RCA) was conducted during and after the campaign rounds as a separate check on quality, and generally confirmed good quality rounds; however, as a result of the short preparation time for the response rounds, RCA was not conducted as extensively as is optimal.

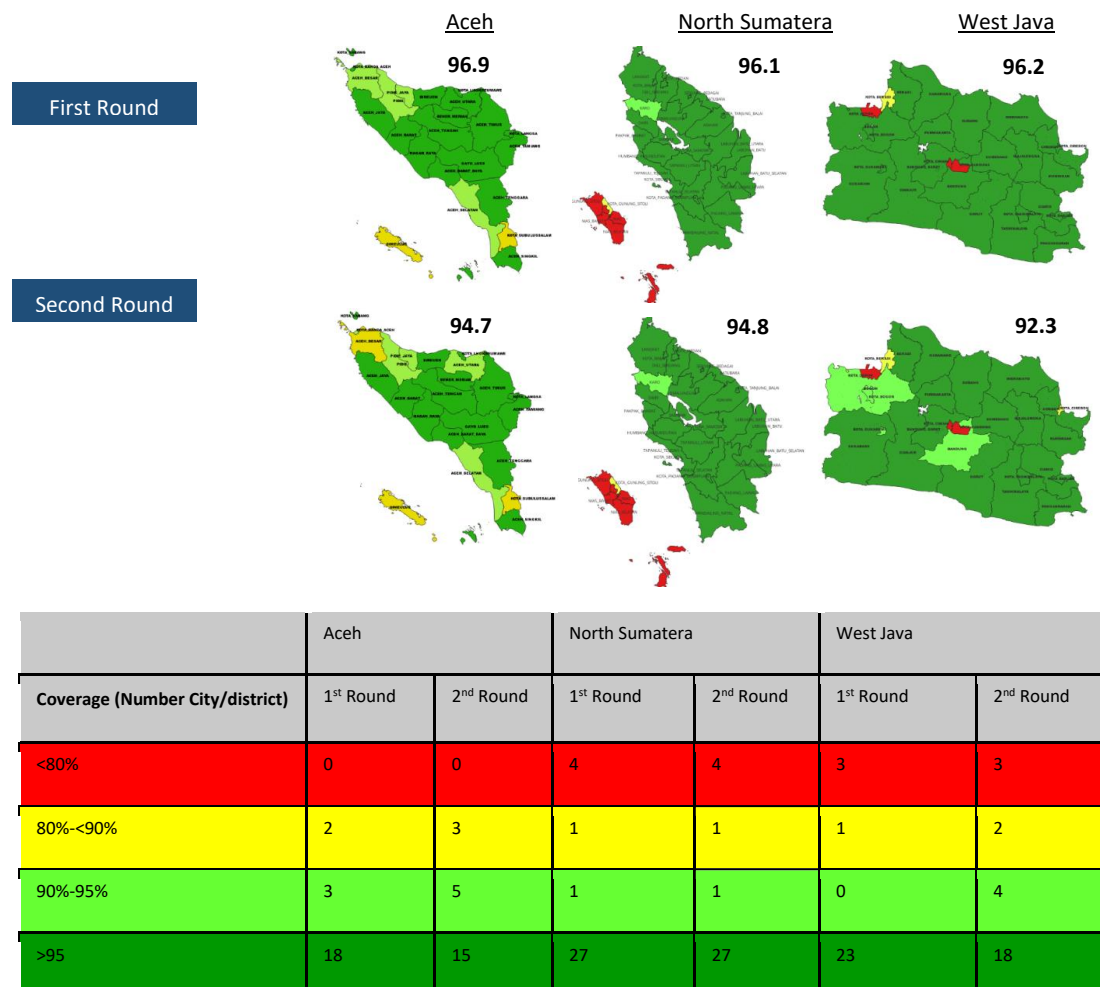


Figure 7: SIA coverage

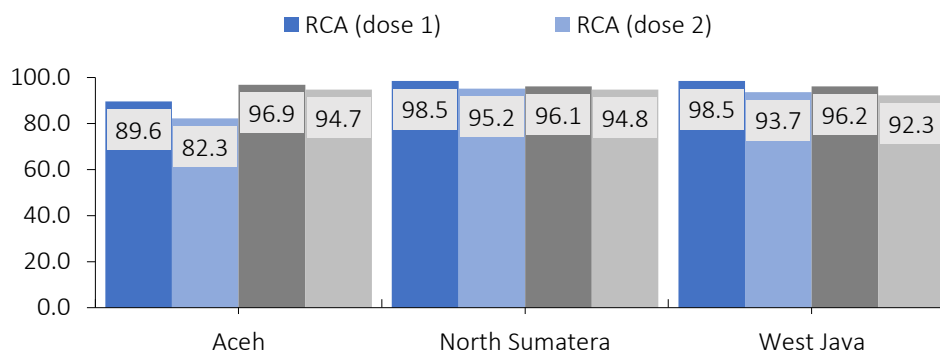


Figure 8: Data Coverage (%) RCA Compared to Administrative Data

Routine immunization

As has been experienced in many other countries, the COVID-19 pandemic impacted negatively on routine immunization in Indonesia. There is evidence that routine immunization performance is again improving and recovering from the impact of the COVID-19 pandemic. However, routine immunization coverage with IPV is not yet consistently high; several provinces, including high risk provinces, have low coverage with IPV; there is therefore an ongoing risk of an immunity gap for poliovirus type 2.

Table 1: IPV1 coverage (in percentages), Indonesia, 2018-2022 (Source: WUENIC estimates)

2018	2019	2020	2021	2022
62	76	37	61	77

The country has introduced second dose of IPV recently in its routine immunization programme. In West Java province IPV2 was introduced in December 2022 and in June 2023 IPV2 was introduced nationwide into the routine immunization programme.

Advocacy, Communication, Community Engagement

The OBRA team noted that during SIAs there was good evidence of coordinated and successful efforts to engage communities and to effectively communicate about the outbreak and the response. Advocacy, community engagement, and social mobilization plans were developed, and local community networks have been mobilized and engaged in the campaigns. There has been good use of local mass media and digital communication channels. There is evidence of high awareness and vaccine acceptance in communities. However, communication challenges remain particularly for newly identified and special populations.

In contrast, for routine immunization, there were variations in community engagement between the three provinces visited. Aceh Province in particular presents 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. Good information on the real barriers in community engagement and acceptance does not seem to be available and specific efforts to better understand the challenges are necessary.



Figure 9: Effective Community Engagement

Vaccine management

The security of vaccine storage and shipment is good, trained personnel with knowledge of cold chain principles are present at district and sub-district level. Cold Chain Equipment is sufficient and of good quality. There was sufficient evidence of well managed distribution of nOPV2 and retrieval of remaining vaccine following the campaigns. Good documentation and clear accountability for the management of nOPV2 was noted.

OBRA Conclusion

The OBRA Team congratulated the Ministry of Health and Partners on the quality of the outbreak response in Indonesia and appreciated their support during this assessment. The OBRA team after careful review of the data, reports, documents provided by the national programme and the outbreak coordination team of Indonesia, followed by assessment made during field visit concluded that although the outbreak response activities in Indonesia have been timely and of good quality, it is too early to say that the cVDPV2 outbreak has been stopped. The main reasons for this conclusion are that it is less than 6 months since the last reported detection of cVDPV2, and surveillance quality is not yet adequately consistent at subnational levels to provide confidence that circulation has been stopped. The team concludes that the risk of continued circulation is declining because of the response activities conducted, but risk is still present. If there is no further detection of cVDPV2, a small follow up review should be conducted in the next 3 – 6 months, focusing on surveillance data and quality, to recommend if the outbreak can be officially closed.

Recommendations

Responding to the outbreak

- The Review Team does not recommend at this stage that further response immunization rounds be planned for Aceh, North Sumatra, and West Java. However, it is critical that the national

program remain vigilant and flexible and be prepared for further rounds if more virus is detected. The OBRA team recommends that the national programme should stay flexible and modify plans according to epidemiology and risks. Detailed recommendations have been provided at the provincial level with specific suggestions.

- If there is any further detection of cVDPV2, appropriate response rounds will be needed for the affected and at risk areas. Vaccine remaining from the SIA rounds should be returned to and stored at national level to allow rapid distribution if needed. Building on the experience and lessons of the rounds conducted so far, planning for any response rounds should emphasize:
 - Reaching every child rather than meeting denominator targets
 - Ensuring Governors, Bupatis and Mayors are fully engaged and the machinery of local government is committed to the activity
 - Identifying high risk populations, where they exist, to engage and reach them
 - A specific transit strategy is put in place to ensure that families on the move are reached
 - Rapid Community Assessments are expanded and carried out systematically to inform quality improvement

Ensuring that virus can be detected

- MOH should **prioritize improving surveillance quality** and fully implement the **Surveillance Strengthening Plan**
- **Provinces should be prioritized for intervention** based on risk profile and surveillance quality indicators
- **Priority Provinces** should be supported by national and partner technical staff to carry out **prioritization of districts/sub districts** for surveillance strengthening activities
- **Monthly review meetings at national and province level** should be face to face and **prioritize assessment of key indicators, identification of issues, and development of solutions**
- **Activities under the surveillance strengthening plan should be prioritized** according to the impact on surveillance improvements; focus on
 - **Identification & support for poorly performing areas** to improve early detection, high quality investigation, & timeliness
 - **Supportive supervision:** National to Province, Province to District, District to Puskesmas
 - **Prioritization of reporting sites for active surveillance** and reviewing both inpatient and outpatient records at hospitals to ensure all AFP cases are reported in a timely manner.
- **Interactive learning tools** should be developed and made accessible for health staff to help them understand their role in surveillance (for example, how to carry out a proper AFP investigation)
- **National polio laboratories** must be supported to ensure there is full availability of all requirements, including supplies such as reagents, to continue to provide fast and reliable results in the context of increasing AFP investigations
- Monthly meetings on surveillance at national level should include laboratory representatives to ensure that information is shared and any issues for lab support identified and resolved
- **Environmental surveillance site results should be regularly reviewed**; sites with low enterovirus detection rates should be investigated and, if necessary, moved or closed to ensure that useful information is being provided to the national program

Reducing risk - Building Immunity

- The plans developed by MOH & Partners to strengthen basic immunization services, including

catch up immunization activity, should be **finalized and implemented** as quickly as possible

- **Supportive supervision** is equally important for immunization as for surveillance, especially at Posyandu level
- Prioritize **ensuring that children receive routine two doses of IPV**; this is now the only vaccine in routine use that has a poliovirus type 2 component, and high coverage with IPV is essential to provide a base of immunity against PV 2
- Based on the experience of the three provinces implementing the outbreak response, **all provinces should be encouraged to review their denominator estimates and try to identify any children currently being missed** for routine immunization services
- Where **additional children** were found in Aceh, North Sumatra, and West Java during the sub-PINs, **ensure that these children are added to registers and included in routine immunization and catch up**
- Where **less children** were found than expected, **investigate** to ensure that children have not been missed
- Use **measles outbreak investigations** to **identify missed children and close gaps in immunization**
- A specific **behavioural investigation on the barriers to routine immunization should be carried out in Aceh** to inform better efforts to engage populations and ensure appropriate strategies are identified and implemented

Vaccine Management

- **Remaining opened nOPV2 vials** (partially or fully used), expired, damaged, and with VVM reached the discard point (unusable stage) **must be taken out of the cold chain and destroyed** together with other medical wastes at provincial/national level according to National Guideline. This process is recommended to be reported using the nOPV2 Vial Disposal Report.

Annexure 1: OBRA team members

International assessors (in alphabetical order)

1. Mr Chris Maher, BMGF
2. Ms Feyrouz Kurji, BMGF
3. Dr Graham Tallis, WHO-HQ
4. Dr Jeevan Makam, UNICEF-HQ
5. Mr John McCrary, USAID
6. Dr Khin Nyo Thein, SEA-RCCPE
7. Dr Naveed Sadozai, BMGF
8. Dr Pradeep Haldar, WHO-SEARO
9. Dr Ridwan Gustiana, UNICEF-EAPRO
10. Dr Stephanie Kovacs, US-CDC
11. Dr Sudhir Joshi, WHO-SEARO (OBRA Team Lead)

GPEI partners based in Indonesia

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- UNICEF: Dr Abdul Khalil Noorzad, Dr Kenny Peetosutan, Dr Dita Ramadonna, Mr Risang Rimbasmaja, Ms Bella Dorra, Ms Rustini Floranita, Dr Sugiarto Hiu
- US-CDC: Dr Jane Soepardi, Ms Fetty Wijayanti

MOH, Indonesia

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Virtual support (WHO-HQ)

Dr Susana Ludovice, Ms Valentina Bigoni, Dr Grace Macklin

Annexure 2: Area of assessment

Province	District	Health Facility (Puskesmas)	Community	Hospital	Laboratory	ES site
Aceh	Aceh Utara	Tanah Jambo Aye,Lhoksukon	Village Matang Tengeh Ab	Cut Meutiah		
	Bireuen	Jeunieb, Peusangan Siblah Kreung	Meunasah Keutapang	Fauziah		
	Banda Aceh	Province Health Office Review		RSUD Zainoel Abidin		
North Sumatra	Karo	Barusjahe, Tigapanah	Sukanalu (posyandu)			
	Labuhan Batu Selatan	Langga Payung, Rasau	Desa Hajoran (Posyandu) Tolan Estate (Posyandu)	Kota Pinang		
	Medan	Province Health Office Review				Cemara
West Java	Kab Purwakarta	Maniis, Munjul Jaya	Tegal Datar Village and Port	Bayu Asih, Abdul Rajak		
	Kab Cirebon	Mundu, Waru Royom and Kepuh		Arjawinangun		
	Bandung	Province Health Office Review			BioFarma	Bojongsoang
Jakarta	National Assessment (Thematic Areas)				Prof. Dr. Sri Oemijati National Infectious Disease Laboratory	Setiabudi