POLIO GLOBAL ERADICATION INITIATIVE

Pre-publication version

Global guidance for conducting acute flaccid paralysis (AFP) surveillance in the context of poliovirus eradication
Second edition

EVERY LAST CHILD

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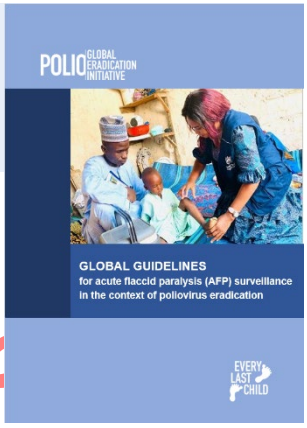
ACRONYMS AND ABBREVIATIONS

AFM	Acute flaccid myelitis
AFP	Acute flaccid paralysis
AFR	African Region (WHO)
AMR	Region of the Americas (WHO)
AS	Active surveillance
aVDPV	Ambiguous vaccine-derived poliovirus
bOPV	Bivalent oral polio vaccine
CBS	Community-based surveillance
CIF	Case investigation form
cVDPV	Circulating vaccine-derived poliovirus
cVDPV1	Circulating vaccine-derived poliovirus type 1
cVDPV2	Circulating vaccine-derived poliovirus type 2
cVDPV3	Circulating vaccine-derived poliovirus type 3
EMR	Eastern Mediterranean Region (WHO)
EPID	Epidemiological identification
ERC	Expert Review Committee
ES	Environmental surveillance
EUR	European Region (WHO)
GBS	Guillain-Barré syndrome
GCC	Global Commission for the Certification of the Eradication of Poliomyelitis
GIS	Geographic information system
GPEI	Global Polio Eradication Initiative
GPLN	Global Polio Laboratory Network
GPS	Global positioning system
IDP	Internally displaced population
IPV	Inactivated polio vaccine
ITD	Intratypic differentiation
iVDPV	Immunodeficiency-associated vaccine-derived poliovirus
MOH	Ministry of Health
mOPV	Monovalent oral polio vaccine
mOPV1	Monovalent oral polio vaccine type 1
mOPV2	Monovalent oral polio vaccine type 2
mOPV3	Monovalent oral polio vaccine type 3
NCC	National Certification Committee
NEC	National Expert Committee
NGO	Nongovernmental organization
nOPV	Novel oral polio vaccine
nOPV2	Novel oral polio vaccine type 2
nOPV2-L	Novel oral polio vaccine type 2-like
NPAFP	Non-polio acute flaccid paralysis
NPEC	National Polio Expert Committee
NPEV	non-polio enterovirus
OBRA	Outbreak response assessment
OPV	Oral polio vaccine
PID	Primary immunodeficiency disorder
POLIS	Polio Information System
RCC	Regional Commission for the Certification of the Eradication of Poliomyelitis
RNA	Ribonucleic acid
SEAR	South-East Asia Region (WHO)
SIA	Supplementary immunization activity
SL	Sabin-like
tOPV	Trivalent oral polio vaccine
TORs	Terms of reference
VAPP	Vaccine-associated paralytic poliomyelitis
VDPV	Vaccine-derived poliovirus
VDPV1	Vaccine-derived poliovirus type 1
VDPV2	Vaccine-derived poliovirus type 2
VDPV3	Vaccine-derived poliovirus type 3
VP1	Virus protein 1
VPD	Vaccine-preventable disease
WebIFA	Web-based information for action
WHO	World Health Organization
WPR	Western Pacific Region (WHO)
WPV	Wild poliovirus
WPV1	Wild poliovirus type 1
WPV2	Wild poliovirus type 2
WPV3	Wild poliovirus type 3

ABOUT THESE GUIDELINES

These ***Global Guidelines for acute flaccid paralysis (AFP) surveillance in the context of poliovirus eradication 2026*** are published to replace the most recent 2022 publication of the global guidelines.



Since 1996, all regions of the World Health Organization (WHO) and several polio-endemic countries have produced their own AFP surveillance guidelines based on the 1996 Field guide, which has served the programme well. These country-level guidelines are recommended to be updated, based on these new guidelines.

The 2026 global guidelines reflect focused updates to the 2022 version, therefore much of the content remains the same. It continues to outline well-established strategies and activities for AFP surveillance to support countries in attaining and maintaining a surveillance system sensitive enough to detect the circulation of any polioviruses – wild polioviruses (WPVs), vaccine-derived polioviruses (VDPVs) and Sabin-like (SL) viruses. It incorporates updates to recommendations and strategies as described in the current Global Polio Surveillance Action Plan.[1] It also introduces updated indicators that complement well-established certification standard indicators, such as those aimed at capturing the timeliness, or speed, of specimen testing. The guidelines continue to stress the four cross-cutting issues that remain central to the success of the polio eradication programme:

(1) the speed of poliovirus detection
(2) the quality of surveillance at the subnational level
(3) the importance of gender mainstreaming in the polio programme, and
(4) the need for integrating polio with other vaccine-preventable disease (VPD) programmes.

These guidelines are intended for use by individuals and organizations involved in polio eradication efforts that include: national polio surveillance and immunization programme managers and staff; country, regional and global focal points for polio surveillance and immunization at the WHO and the United Nations Children's Fund (UNICEF); polio technical advisory bodies; and partners of the Global Polio Eradication Initiative (GPEI).

Global Polio Surveillance Action Plan

The Global Polio Surveillance Action Plan (GPSAP) defines the surveillance activities required to achieve the goals of the Global Polio Eradication Initiative for the interruption of wild poliovirus type 1 transmission and outbreaks of circulating vaccine derived poliovirus. The GPSAP is periodically updated to reflect changes in the GPEI Strategy or as new surveillance priorities are identified. It is important for national AFP surveillance programmes to review and incorporate recommendations into their national polio surveillance plans. This updated version of the Global AFP Surveillance Guidelines incorporates selected activities and indicators from GPSAP that will be important for the long-term. For recommendations and additional measures that will be essential for short-term implementation, refer to the current GPSAP.

[1] Global Polio Surveillance Action Plan 2025-2026 (accessed 17 Dec 2025, https://iris.who.int/bitstream/handle/10665/382037/9789240111844-eng.pdf)

INTRODUCTION

Since its establishment in 1988, the Global Polio Eradication Initiative (GPEI) has made major progress towards eradicating wild poliovirus (WPV). Five of six regions as defined by the World Health Organization (WHO) have been certified as WPV-free: the African Region, Region of the Americas, the European Region, the South-East Asian Region and the Western Pacific Region. Of the three WPV serotypes, the Global Commission for the Certification of the Eradication of Poliomyelitis (GCC) has certified eradication of types 2 and type 3, last reported in 1999 and 2012, respectively. At the time of this writing (December 2025), only WPV type 1 (WPV1) remains in two countries classified as endemic: Afghanistan and Pakistan. Meanwhile, outbreaks of circulating vaccine-derived poliovirus (cVDPV) are detected, the most prominent being type 2 (cVDPV2) detected in all six WHO-regions since 2022.

1. Poliovirus and poliomyelitis

Poliomyelitis is a highly contagious disease caused by a human enterovirus called poliovirus. Poliovirus consists of a ribonucleic acid (RNA) genome enclosed in a protein shell, referred to as a *capsid*. Of the three serotypes of poliovirus (types 1, 2, and 3), each have a slightly different capsid protein. Immunity to one serotype does not confer immunity to the other serotypes.

Annex guidance

This section provides a high-level overview on poliovirus. Further details can be found in **Annex 1. Poliovirus.**

The virus is most often spread by the faecal-oral route through contact with the faeces of an infected person, mostly in areas with poor water, sanitation and hygiene. It can also spread through droplets from a sneeze or cough (oral-to-oral transmission) and even by virus laden aerosols spread by speaking or in laboratory incidents. Poliovirus enters through the mouth and replicates in the throat and intestines. Infected individuals shed poliovirus into the environment for several weeks, where it can spread rapidly in the community, especially in areas of poor sanitation.

Poliovirus can interact with its host in two ways:

- Most poliovirus infections are asymptomatic or cause minor illness with mild symptoms without affecting the central nervous system.
- Less than 1% of poliovirus infections result in paralysis by affecting the central nervous system, a life-threatening disease called *poliomyelitis*.

Poliomyelitis cannot be cured but it can be prevented. Vaccination is safe, effective and inexpensive. It is through the widespread use of the oral poliovirus vaccine (OPV) that the polio eradication effort owes its success. Unfortunately, in rare circumstances (approximately 1 in 2.7 million doses),[2] the attenuated Sabin strains in OPV cause vaccine-associated paralytic poliomyelitis (VAPP) in the vaccine recipient or a close contact. In late 2023, a more genetically stable novel oral poliovirus vaccine (nOPV) type 2 achieved WHO-prequalification status and efforts are ongoing to develop and make nOPV for types 1 and 3 available in the future.

In rare instances through prolonged excretion in an immunocompromised individual or transmission in communities with low polio immunity, the vaccine virus can genetically mutate to a form known as vaccine-derived poliovirus (VDPV). There are three categories of VDPVs: circulating, immunodeficiency-associated and ambiguous. VDPVs are a challenge to polio eradication and are a focus of the programme in the last mile to eradication. [3]

Annex guidance

For more information on VDPVs, see **Annex 2. Vaccine-derived poliovirus classification and response**.

[2] See the fact sheets on oral poliovirus vaccines and inactivated poliovirus vaccines, published on the GPEI website (accessed 17 Dec 2025, https://polioeradication.org/about-polio/the-vaccines/opv/, https://polioeradication.org/about-polio/the-vaccines/ipv/).
[3] For more on VDPVs, visit the GPEI website on cVDPV (accessed 17 Dec 2025, https://polioeradication.org/about-polio/the-virus/vaccine-derived-polioviruses/) and their link to a short explanatory video (accessed 17 Dec 2025, https://www.youtube.com/watch?v=mg_XFQ2zib4).

2. Polio eradication

The widespread use of the poliovirus vaccine in the mid-20th century led to the rapid decline in the incidence of poliomyelitis. In 1988, the World Health Assembly adopted the goal of polio eradication. The benefits of the global eradication of polio are at least threefold:

1. **Reduction in morbidity and mortality:** Polio is a leading cause of disability in unimmunized populations. With the eradication of WPV types 2 and 3 (WPV2 and WPV3), the incidences of infection caused by these two agents have already been reduced to zero, in addition to preventing millions of disability-adjusted life years (DALYs).
2. **Strengthened health systems:** The polio eradication programme has enhanced the collaboration between the surveillance systems and laboratory networks. It has helped revitalize immunization programmes and it contributes to the strengthening of health system planning, management and evaluation.
3. **Economic impact**: It is estimated that US$1.5 billion will be saved per year after the final remaining serotype (WPV1) is eradicated and immunization against it stopped.

Polio can be eradicated because:

- humans are the only reservoir;
- poliovirus survives for a limited amount of time in the environment; and
- inexpensive and effective vaccines exist to protect the population from the disease.

More than 200 countries and territories have eliminated polio through time-tested strategies by:

- attaining high essential immunization coverage (>90%) with at least three (3) doses of polio vaccine within the first year of life;
- conducting high-quality supplementary immunization activities (SIAs) to stop outbreaks and interrupt the spread of the virus; and
- implementing a sensitive surveillance system for poliovirus.

The following criteria will be applied for certification of WPV eradication:[4]

- no WPV transmission detected from any population source for a period of **no less than two (2) years, in the presence of**
    - **adequate global poliovirus surveillance**; and
    - **safe and secure containment of all WPVs** retained in facilities, such as laboratories and vaccine manufacturing facilities.

The criteria for certification of elimination of cVDPV have similar principles as WPV eradication and are under review.[5] Global polio-free certification will be further sustained by requirements for containment of all polioviruses and the cessation of OPV use in essential immunization programmes to mitigate the risk of re-emergence over time.[6]

[4] Global Commission for the Certification of the Eradication of Poliomyelitis (GCC). Report from the 22nd meeting of the Global Commission for Certification of Poliomyelitis Eradication, 28-29 June 2022. Geneva: World Health Organization; 2022 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2022/09/22nd-GCC-report-20220907.pdf).
[5] Global Commission for the Certification of the Eradication of Poliomyelitis (GCC). Report from the 24th meeting of the Global Commission for Certification of Poliomyelitis Eradication. Geneva: World Health Organization; 2023. (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2024/09/Report-from-the-Twenty-Fourth-Meeting-of-the-Global-Commission-for-Certification-of-Poliomyelitis-Eradication-20240926.pdf)
[6] For more on sustaining a polio-free world after the certification of global eradication, see: Global Polio Eradication Initiative Sustaining a Polio-free World: a strategy for long-term success (Draft v3.5) Geneva: World Health Organization; 2025 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2025/12/Sustaining-a-Polio-free-World-Draft-v3.5-20251212.pdf). Pending finalization.

3. Polio and poliovirus surveillance systems

Different types of surveillance systems for detecting the transmission of poliovirus are critical to reach global polio eradication, as high-quality surveillance permits the timely detection of poliovirus transmission due to WPV, VDPVs and the circulation of Sabin-like (SL) viruses.[7]

1. **Acute flaccid paralysis (AFP) surveillance:** This globally accepted case-based syndromic surveillance for AFP cases confirms poliovirus by testing stool specimens in polio laboratories. AFP surveillance remains one of the cornerstones of the polio eradication effort.
2. **Environmental surveillance (ES):** AFP surveillance is complemented by environmental surveillance (ES) which systematically tests sewage samples for poliovirus in specific settings.[8]
3. **Immunodeficiency-associated vaccine-derived poliovirus (iVDPV) surveillance:** AFP surveillance is also complemented by surveillance for iVDPVs among non-paralytic individuals with primary immunodeficiency disorders (PIDs), which is referred to as iVDPV surveillance.[9]

These three components of polio surveillance are supported by the Global Polio Laboratory Network (GPLN) for confirmatory testing using viral isolation, intratypic differentiation and genomic sequencing procedures. Ready access to data from various sources that include AFP surveillance, ES, and laboratory surveillance are supported by a comprehensive global polio information system (POLIS).

Challenges to AFP surveillance in the last mile to eradication

Challenges faced by the polio eradication programme have evolved over the years. The main challenges that currently affect the quality and sensitivity of AFP surveillance are attributable to:

- Gaps in AFP surveillance at subnational levels, especially where surveillance coverage may be limited for reasons such as an inability to routinely access special populations or hard-to-reach areas.
- Delays in specimen and sample shipment to WHO-accredited laboratories can result in late confirmation of polio cases and ES samples, delaying outbreak response, thereby giving poliovirus ample opportunity to spread.
- Missed opportunities for action due to the underutilization of surveillance data can create gaps where the virus can spread before detection and response.
- Attrition, rapid staff turnover and insufficient trainings (and refresher trainings) affect the quality of field and laboratory surveillance work through the loss of institutional memory, skills and competencies. Turnover within surveillance teams also affects supervision and monitoring.
- A de-prioritization of polio activities due to decreased donor commitment, the transition of polio resources and funding and competing priorities has led to the deterioration of surveillance quality and sensitivity. This has led to delays in detecting importations or emergences of poliovirus, which in turn affects the promptness and effectiveness of outbreak response activities. This has been particularly observed in countries that have been polio-free for years, but all countries are vulnerable when polio is no longer prioritized.

[7] Some countries also use enterovirus surveillance for the purpose of certification. Refer to WHO European Region's Enterovirus Surveillance Guidelines for further information (accessed 17 Dec 2025, https://iris.who.int/bitstream/handle/10665/344375/9789289050814-eng.pdf?sequence=1&isAllowed=y)

[8] World Health Organization (WHO). Guidelines for environmental surveillance of poliovirus circulation. Geneva: World Health Organization; 2003 (accessed 17 Dec 2025, https://apps.who.int/iris/handle/10665/67854).

[9] Global Polio Eradication Initiative (GPEI). Guidelines for Implementing Poliovirus Surveillance among Patients with Primary Immunodeficiency Disorders (PIDs), revised 2022. Geneva: World Health Organization; 2022 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2022/06/Guidelines-for-Implementing-PID-Suveillance_EN.pdf).

PRINCIPLES of AFP surveillance

Acute flaccid paralysis (AFP) surveillance is a case-based syndromic surveillance system that has been standardized throughout the world. The same tools, indicators and reporting systems are used in countries. This standardized system has strengthened collaboration with immunization partners by sharing uniform data on a weekly basis and advocating for action and support where risks and weaknesses emerge.

A surveillance system that is specific to poliovirus is important because the characteristics of the disease make it particularly challenging to detect:

- Only 1 in 200 wild poliovirus (WPV) infections of non-immune people results in paralysis. The great majority of poliovirus infections are therefore "silent" as they do not cause paralysis.
- Even if a poliovirus infection causes paralysis, the clinical presentation of paralytic polio is similar to other conditions, such as Guillain-Barré syndrome (GBS) or AFP/acute flaccid myelitis (AFM) caused by other enteroviruses.

To overcome these challenges, two key measures were universally agreed to in the 1980s to improve the sensitivity of the surveillance system:

1. adopting the syndrome of AFP as a reportable condition, and
2. laboratory confirmation of poliovirus by testing stool specimens in polio laboratories accredited by the World Health Organization (WHO).

1. Adopting AFP as a reportable syndrome

When the GPEI was first established, most countries were reporting clinically confirmed polio cases based only on signs and symptoms. Polio was reported as just one of many diseases within disease surveillance systems, often on an annual basis. Given the epidemiology and characteristics of polio, this made it difficult to detect new cases and respond to outbreaks of polio both swiftly and effectively.

Many diseases may initially look like polio; therefore, a more sensitive system was needed to enable suspected new cases to be detected, reported and investigated as rapidly as possible. This led to the adoption of acute flaccid paralysis or ***AFP as the syndrome*** to be reported.[10]

Defining AFP case

An AFP case is defined as a child under 15 years old presenting with sudden onset of floppy paralysis or muscle weakness due to any cause, or any person of any age with paralytic illness if poliomyelitis is suspected by a clinician.

This sensitive case-based syndromic definition captures not only acute poliomyelitis but also other diseases that present similarly, including GBS, transverse myelitis and traumatic neuritis, and therefore required laboratory confirmation to identify poliovirus. (**Annex 1. Poliovirus** offers differential diagnoses and the clinical signs and symptoms used to differentiate poliomyelitis from other diseases: asymmetric flaccid paralysis, fever at onset, rapid progression of paralysis, residual paralysis after 60 days and preservation of sensory nerve function).

The *rate of non-polio AFP case detection* is a key indicator of AFP surveillance sensitivity. In the absence of polio circulation, a sensitive surveillance system will detect at least one (1) case of non-polio AFP each year for every 100 000 children under 15 years old. Where poliovirus is present or where polio is a threat, this target is modified. The objective is then to detect at least two (2) cases of non-polio AFP each year for every 100 000 children under 15 years old in all at-risk countries and countries in select WHO-regions. In endemic countries and outbreak-affected areas, the objective is to detect at least three (3) cases of non-polio AFP each year for every 100 000 children under 15 years old. (See **Annex 3. Indicators for AFP surveillance**.)

[10] In the same way, smallpox eradication adopted detection and investigation of the "rash and fever" syndrome.

2. Testing all stool specimens in a WHO-accredited polio laboratory

Polioviruses are primarily transmitted from person-to-person through the faecal-oral route in settings with poor water, sanitation and hygiene. They replicate in the human intestinal system, where they are shed intermittently in the stool of infected individuals. The probability of detecting virus in stools is greatest up to two weeks after the onset of paralysis but can be detected up to six to eight weeks after onset.

The most effective way to confirm poliovirus infection in an AFP case is to collect two (2) stool specimens, at least 24 hours apart, and within 14 days of the onset of paralysis, and have specimens tested in a WHO-accredited polio laboratory.

One of the universally accepted indications that an AFP surveillance system is sensitive enough to detect poliovirus is that 80% or more of reported AFP cases have had their stool specimens collected as described above (i.e., "adequately"). The *percentage of AFP cases with adequate stools* is used as the second key indicator of AFP surveillance sensitivity. (See **Annex 3. Indicators for AFP surveillance**.)

Key indicators for AFP surveillance

Non-polio AFP rate

- ✓ At least one (1) non-polio AFP case each year for every 100 000 children aged under 15 years.
- ✓ In at-risk and select WHO regions, at least two (2) non-polio AFP cases each year for every 100 000 children under 15 years.
- ✓ In endemic countries and outbreak-affected areas, at least three (3) non-polio AFP cases each year for every 100 000 children under 15 years.

Adequate stool specimen percentage

- ✓ At least 80% of reported AFP cases have had their stool specimens collected adequately.

The non-polio AFP rate and stool adequacy rate are key indicators that provide a high-level overview of AFP surveillance performance. However, there are additional surveillance indicators that are important to monitor to better understand AFP surveillance performance. See Annex 3 for a comprehensive list of AFP surveillance indicators.

STRATEGIES for AFP surveillance

Acute flaccid paralysis (AFP) cases are detected using three main strategies: routine (or passive) surveillance, active surveillance (AS), and community-based surveillance (CBS).[11] Some supplemental strategies for special populations and particular contexts also support overall AFP surveillance.

1. Routine (passive) surveillance

1.1 – What is routine (passive) surveillance?

The regular reporting of diseases or conditions of interest from reporting sites, such as health facilities and hospitals, to public health authorities is called routine surveillance. It is sometimes referred to as *passive surveillance* because public health authorities must rely on thousands of designated focal points from a variety of reporting sites to detect and notify (or report) cases. It is also sometimes referred to as *zero reporting* as reporting sites must report weekly, even if no case has been detected (i.e., "zero" cases).

Defining routine surveillance

Also called *passive surveillance* or *zero reporting*, routine surveillance is a process in which reporting sites are expected to send reports to public health authorities regularly and often weekly, regardless of whether an AFP case has been seen.

In most countries, routine AFP surveillance is conducted as part of an existing overall notifiable disease reporting system that collects reports on cases of a group of diseases or conditions.

1.2 – AFP as a notifiable condition

Under routine surveillance, focal points at reporting sites are required to immediately report any AFP case (i.e., within 24 hours) to a designated public health surveillance team for rapid investigation.

In addition to the immediate notification, surveillance focal points at reporting sites must also submit a routine weekly or monthly report that includes the number of new cases or "zero" ("0") if no AFP cases were seen in their site. AFP is a rare condition, and a zero report is an important way to keep reporting sites sensitized about the need to routinely conduct AFP surveillance.

1.3 – Monitoring routine surveillance

All countries are required to monitor the completeness and timeliness of routine AFP reporting, which allows for the timely detection of gaps in reporting and surveillance quality. For most countries, monitoring routine surveillance will be the same as the completeness and timeliness of notifiable diseases reporting, as AFP is included among the list of notifiable diseases. These reports are also submitted to and regularly scrutinized by National Certification Committees (NCCs) and Regional Certification Commissions for the Eradication of Poliomyelitis (RCCs).

The indicators to monitor routine surveillance for AFP at the national and subnational level are:

- the percentage of designated sites submitting weekly reports (or "zero reports") for a given time period (completeness); and
- the percentage of designated sites submitting weekly reports (or "zero reports") on time by the deadline (timeliness).

Surveillance teams should use this data to identify and follow up on reporting sites repeatedly failing to report or reporting late. (See **Annex 3. Indicators for AFP surveillance**).

[11] The PH101 Series by the U.S. Centers for Disease Control and Prevention (CDC) provides an introduction to public health surveillance (accessed 17 Dec 2025, Introduction to Public Health Surveillance | Public Health 101 Series | CDC. See also Losos JZ. Routine and sentinel surveillance models. East. Mediterr. Health. J 1996;2(1):46-50 (accessed 17 Dec 2025, http://www.emro.who.int/emhj-volume-2-1996/volume-2-issue-1/article6.html).

1.4 – Challenges with routine surveillance

The following challenges can be encountered with routine surveillance.

- **Incomplete reporting networks** may lead to delays in detection when the network is not comprehensive enough (i.e., no sites in certain parts of the country).
- **Incomplete weekly reports** may occur when sites do not report as required, and the field team has limited capacity either to follow up with "silent" reporting sites or to conduct training and sensitization activities for all reporting sites. In these cases, active surveillance (below) provides opportunities to strengthen routine surveillance through visits by designated surveillance staff to meet with site focal points.
- **Attrition among personnel** at the reporting site may lead to a lack of awareness of AFP as a notifiable condition and a subsequent failure to identify and immediately report AFP cases.
- **Declining awareness about polio and AFP reporting requirements** may also create confusion. Providers may forget the importance of reporting *AFP as a syndrome* as separate and distinct from reporting *polio as a diagnosis*.
- **Confusion between routine and active surveillance** may lead to insufficient engagement of both the formal and informal health sector. Under routine surveillance, district and provincial surveillance teams rely on formal health sector sites to report on AFP cases; under active surveillance, however, district and provincial surveillance teams are actively engaged in finding AFP cases by visiting health sites on a regular basis. (In some settings, inquiries about AFP cases within a routine reporting site made by the site-level focal point are mistakenly considered "active surveillance." Such inquiries must be made by personnel external to the facility to be considered active surveillance.)

Annex guidance

For more on the differences between routine and active surveillance, see **Annex 4. Routine and active surveillance.**

2. Active surveillance

2.1 – What is active surveillance (AS)?

Well-implemented active surveillance (AS) has proven to be the most effective strategy for AFP surveillance.

Under AS, trained public health surveillance staff regularly visit priority reporting sites within the formal health sector (such as tertiary hospitals and district hospitals) and informal health sector (such as community health centres run by nongovernmental organizations [NGOs]) to identify and investigate any unreported AFP cases and to regularly sensitize targeted staff on polio and AFP surveillance. To be effective, AS visits must be done by well-qualified staff who understand the polio eradication programme and have good interpersonal and communication skills.

Defining active surveillance

AS is a process in which designated surveillance staff from public health offices make regular visits to prioritized reporting sites. They collect data from individual cases and review registers, medical records and logbooks to ensure that all AFP cases have been reported to public health authorities.

For more on the difference between active and routine surveillance, see **Annex 4**.

Experience has shown that some countries have effectively used AS for AFP as a platform for surveillance for vaccine-preventable diseases (VPDs) or other outbreak-prone diseases.

Download *Best Practices in Active Surveillance for Polio Eradication*.

2.2 – Setting up active surveillance

The key components of setting up an AS network are: (1) selecting, prioritizing, reviewing and updating reporting sites, (2) identifying focal points and building skilled surveillance staff capacity to carry out AS activities, and (3) following a structured procedure to ensure high-quality visits.

2.2.1 – Site selection, prioritization and updating

Selection: AS sites are drawn from the formal health sector and are a subset of the routine reporting sites; however, they may also include some components of the informal health sector, such as traditional health healers. In certain contexts, NGO-run facilities may be included such as health facilities set up in camps for refugees or internally displaced populations (IDPs).

Selecting active surveillance sites

The primary criteria for selecting health facilities for the AS network is the probability that children under 15 years of age with AFP are seen at the facility.

AS networks include reporting sites from the formal and the informal health sector.

An analysis of where AFP reports originate will show that most children with AFP are detected at and reported from a relatively small number of reporting sites that are medium to large hospitals, often referred to as secondary or tertiary hospitals. The rationale is that when faced with a health emergency such as the sudden onset of paralysis in a child, parents and caregivers are more likely to go to the largest accessible hospital, bypassing local health centres and smaller hospitals.

Therefore, the primary criteria for selecting AS sites should be:

- the probability that children under 15 years of age with AFP are seen at the reporting site.

Additionally, AS sites should also be selected to ensure:

- the AS network is demographically and geographically well-distributed and representative of the population in a province or district;
- the main referral hospitals and health facilities (including paediatric hospitals) in national and subnational capital cities are included; and
- facilities within the network represent all sectors of the health system, from public and private hospitals to clinics and health centres, to pharmacies and even traditional healers, religious leaders or other local community resources.

The informal health sector plays an important role, especially in locations where it represents the first point of contact for families and communities to seek health care or advice. Informal health workers, such as traditional medicine practitioners and faith healers who are likely to see AFP cases but do not work within the formal health system are thus identified and sensitized to the importance of AFP and oriented on its detection. They are then asked to contact surveillance staff upon encountering a suspected AFP case.

Prioritization: Once all AS sites are selected, a prioritization scheme of high-, medium-, and low-priority sites must be applied to determine the frequency with which district and provincial surveillance staff will conduct AS visits (**Table 1**). The frequency of site visits depends on the priority of the facility. The highest priority should be given to those sites that see the most AFP cases, typically larger health facilities and hospitals. Countries experiencing an outbreak may consider adding a fourth category ("very high-priority sites") under which targeted facilities are visited twice weekly. **Annex 5** details processes and procedures for AS surveillance visits.

Table 1. Site prioritization scheme for active surveillance

Classification		Frequency of site visits
Very high-priority sites	*Special circumstances (e.g., polio outbreak)* Very large national referral hospitals	Visited more than once weekly
High-priority sites	All tertiary and secondary public and private hospitals and all hospitals with paediatric departments	Visited weekly
Medium-priority sites	Medium-sized hospitals, smaller hospitals and large health centres (in some countries) Traditional healers renowned for treating paralysis (in certain communities)	Visited every two weeks
Low-priority sites	Health posts, small health facilities, traditional healers, pharmacies that could see an AFP case	Visited monthly
Not prioritized	Not part of the AS network, but part of the routine surveillance network	No AS visits for AFP surveillance

AFP = acute flaccid paralysis; AS = active surveillance

Experience in polio-endemic countries has shown that, provided the prioritization exercise is executed appropriately, the number of sites in the high-priority group should be lowest (10–15% of the total number of AS sites), with more in the medium-priority group (25–35%), and the remainder of sites in the low-priority group.

Updating the AS network: National, provincial and district surveillance teams should review the AS network twice a year and adjust as needed. Facilities may have closed, or new facilities opened. In many countries, the private health sector is growing rapidly, and new facilities may be predominantly in the private sector. Sites should be dropped from or added to the network accordingly.

Adjusting the AS site network is especially important in conflict settings, as conflict and insecurity may disrupt the healthcare system. In such cases, public health surveillance teams need to respond by updating and possibly expanding the AS network in those parts of the country around inaccessible areas and in host communities receiving IDPs or refugees, based on their health-seeking behaviour. Where people no longer have regular access to health facilities, surveillance activities should be expanded to include direct reporting from affected communities by including IDP and refugee camps or NGOs that provide health services in conflict affected areas (see also **Community-based surveillance** and **Annex 6**).

Reviewing and adjusting sites

The AS network must be reviewed and updated twice a year to account for the opening and closing of health facilities, as well as sociodemographic changes to the population.

2.2.2 – Site focal points and surveillance officers

Depending on a country's size, district, provincial or national surveillance health officers will be responsible for organizing and scheduling regular AS visits to reporting sites in their area.

In each AS site, an AFP surveillance focal point must be identified or designated if not already in place. While different groups may be considered for this function, depending on the size of the health facility, priority should always be given to a paediatrician, if available.

The AS focal point has several key roles and responsibilities that include:

- immediately reporting an identified AFP case and providing case investigation support;

- coordinating with public health/surveillance staff during AS visits; and
- confirming zero reporting for routine (passive) surveillance for formal health facilities.

In the informal health sector, such as facilities held by traditional healers or private pharmacies, the focal point by default will be the service provider, whose responsibility will be to notify immediately any new AFP case. These establishments are typically not part of the routine surveillance system, hence are not expected to provide weekly reports.

Experience has shown that, particularly in larger university hospitals, AS is more efficient when performed by senior public health staff who have experience working with clinicians. They can be shadowed by junior staff, who will in turn learn to build rapport with clinicians and eventually conduct AS visits independently.

2.2.3 – Site visit procedures

At the district or provincial level, public health surveillance officers will coordinate to conduct AS visits according to the site visit calendar and prioritization scheme (**Table 1** above).

Administrative levels

In this guideline, "province" and "district" are used to represent subnational administrative levels 1 and 2 and should be interpreted by national programmes as the appropriate administrative level in their country.

Key activities for AS site visits

1. Meet with the site AFP surveillance focal point to ask whether any AFP cases were seen and provide surveillance and polio eradication updates.
2. Visit all relevant departments and wards and review patient registers.
    - Look for missed or unreported AFP cases since the date of the last visit. Look for "AFP" or associated signs, symptoms, or diagnostics (**Table 2**). Because AFP surveillance is a syndromic-based surveillance, it is important to review symptoms, not diagnoses.
    - Highlight directly in the register (with a coloured marker, if possible) and crosscheck the line listing of all AFP cases (or possible AFP cases) which were found in the register.
    - Date and sign all patient registers that were reviewed.
3. Follow up on any unreported AFP cases.
    - If AFP cases were already reported and investigations launched, no further action is needed.
    - If AFP cases were not reported, request medical records to search for details. Visit patients in the hospital if still admitted; if discharged, obtain addresses to visit patients at home. If the suspected case is confirmed as AFP, conduct the AFP case investigation and initiate specimen collection (see **Case investigation and validation** under **Case activities for AFP surveillance**, as well as **Annex 8. AFP case investigation**). In addition, speak to the physician or nursing staff to inquire why the case was not reported and sensitize them to report such cases immediately. Conduct follow-up visits to ensure that no additional AFP cases are missed and that all relevant staff has been sensitized.
4. In addition, assess the overall status of polio-related functions during the visit.
    - Take opportunities to sensitize department and ward staff on polio and AFP surveillance.

Annex guidance

Surveillance officers should always follow standard procedures to structure AS visits. See **Annex 5. Active surveillance visits** and **Annex 7** for an example of an AS visit form to support data collection and monitoring.

- Determine whether and when a training session may be needed, such as after staff turnover.
- Ensure sufficient supplies and resources are available, including forms, stool kits, and posters.
- Check immunization-related equipment and supplies, such as vaccines (oral polio vaccines [OPVs] and/or inactivated polio vaccine [IPV]) and cold chain storage and carriers.
- Check into other VPD surveillance functions alongside AFP surveillance. As the integration of AFP surveillance into VPD surveillance progresses, it is important to take advantage of AS visits and search for and collect data on other VPDs or outbreak-prone diseases.

Table 2. Possible indications of an AFP case in patient registers

Disease conditions always presenting as AFP	• Paralytic polio • Guillain-Barré syndrome (GBS) • Transverse myelitis • Traumatic neuritis
Disease conditions which may initially present with AFP	• Pott's disease (spinal tuberculosis) • Bacterial or tuberculous meningitis • Encephalitis • Cerebrovascular accidents (stroke) • Hemiplegia
Other signs and history to be considered suspicious, indicating that AFP may have been present initially	• Frequent falls • Weakness, paresis • Abnormal gait, unable to walk, difficulty in walking • Easy fatigability

AFP = acute flaccid paralysis; GBS = Guillain-Barré syndrome

2.3 – Monitoring active surveillance

The completeness and adequacy of AS visits must be monitored at the district, provincial and national level. For a list of indicators used to monitor AS, see **Annex 3. Indicators for AFP surveillance**.

Monitoring is best accomplished by using a form that is completed by the visiting surveillance officer and submitted after each visit to a supervisor at the provincial level. **Annex 7. Examples of forms** offers a sample AS visit report. The form collects key data on all AS visits: the date, time and location, facility visited, and a list of departments visited within large hospitals, as well as whether an undetected AFP case was found during the visit, whether any AFP sensitization or orientation activities were conducted, and whether supplies were provided to the facility (e.g., stool collection kits or posters).

*Monitoring AS visits via mobile data and visualizing the analysed data can help identify blind spots in the surveillance network and accelerate corrective actions. See **Monitoring AFP surveillance** for more innovations in disease surveillance.*

2.4 – Challenges with active surveillance

As public health teams implement AS, several challenges may arise.

Insufficient resources: After establishing the reporting network, surveillance teams often report insufficient resources (such as not enough time, qualified staff, or means of transportation) to conduct visits to all AS sites in the network.

- If this issue occurs, it is very important to ensure that at least all high-priority sites are visited regularly, followed by as many medium- and low-priority sites as possible. This should be feasible as most high-priority sites (e.g., large hospitals) are in national or provincial capitals and relatively close to the national or provincial surveillance office.

- For facilities that cannot be visited, facility focal points should be contacted regularly by phone or email, in addition to monitoring routine surveillance weekly reports from these sites.
- Lists of sites and a calendar of visits should be reviewed or re-adjusted regularly until more resources are made available.

Lack of attention to capitals and large cities: AFP quality indicators tend to be surprisingly low in national and subnational capitals, capital regions and large cities in many countries. This is difficult to account for, as large university hospitals and tertiary care facilities are generally located in these areas. Moreover, large numbers of AFP cases are seen in these areas, including cases referred from the provinces. Sensitive AFP surveillance in these areas is more important than anywhere else in the country. See **Annex 9. Active surveillance for detecting AFP cases in capitals and large cities** for more information.

Challenges in capitals and large cities include high referral of AFP cases, unreliable population data, underestimated surveillance workload, limited resources, variable cooperation from diverse health sectors, communication barriers with clinicians, restricted access to electronic records, and frequent changes in operating health facilities.

The programme is expected to:

- Assess workload and allocate sufficient resources.
- Map and enroll large hospitals and tertiary care facilities as reporting sites. Official introductions and continuous engagement with facility management should be done and subsequent AS visits planned and conducted on a regular and frequent basis. It is recommended to maintain consistent surveillance officer assignments to ensure continuity and build rapport.
- Ensure AS visits are regularly conducted by gender-balanced and experienced surveillance staff (see next paragraph) and are accompanied by supportive supervision.
- Closely monitor process and performance indicators.

Inexperienced staff conducting AS visits: To successfully use AS visits for continuous sensitization of clinicians and other hospital workers on AFP surveillance concept and practices, public health officers must be trained on establishing rapport with medical staff, including with the chiefs of units, some of whom may still not accept or fully understand syndromic AFP surveillance.

- Country programmes should commit to building junior staff capacity through supportive supervision. Good mentoring and training ensure staff are well-qualified and equipped with strong interpersonal communication skills. And knowledge of gender concept.
- Particular attention should be given to women public health officers who may encounter gender barriers while interacting with medical and hospital administrative staff. See **Annex 10 Gender and AFP surveillance** about preventing sexual exploitation, abuse and harassment.

Lack of access at private hospitals and facilities: AS visits can be challenging in private, military or other sector-specific facilities. Surveillance officers should be aware of this and may need regular or periodic support from higher-level officials to renegotiate access.

Insufficient geographic and demographic coverage or representativeness: The AS network may possess geographic or demographic blind spots. Surveillance teams should be vigilant to identify:

- overlooked population groups such as those who live in remote or hard-to-reach areas, urban slums, or ethnic minorities;
- overlooked mobile populations, such as nomads, refugees and IDPs;
- overlooked informal health sector sites, including traditional medicine or faith-based healthcare facilities, or other healthcare sites, such as military or private facilities;
- Specific health seeking behaviour of the population or local gender norms.
- AS sites not visited for long periods of time;
- AS sites not updated, thus missing newer facilities or potentially key practitioners; and
- AS sites that have closed.

Changes can only be made through regular reviews and a thorough mapping of healthcare sites. Special populations and the health-seeking behaviour of caregivers need to be identified to address potential weaknesses and gaps in the active surveillance network (see **Annex 11. Health-seeking behaviour**).

*In most countries, passive and active surveillance are conducted in parallel. Both systems use the same network of reporting sites. AS takes a subset of all reporting sites and prioritizes these as high-, medium-, and low-priority sites for additional surveillance activities. (**See Annex 4. Routine and active surveillance**.)*

3. Community-based surveillance

3.1 – What is community-based surveillance?

Community-based surveillance (CBS) is a surveillance strategy in which trained community members are engaged to report suspected AFP cases to a designated focal person based on a simple AFP case definition.[12]

What distinguishes CBS from routine and active surveillance is that case detection occurs **outside** of health facilities and that those performing case detection activities are community members, not health professionals.

Defining community-based surveillance

CBS is a process that ***relies upon trained community members*** to identify AFP cases (using a simple case definition) in areas and communities where access to reporting sites (e.g., health facilities) is limited.

CBS provides a link between communities and the AFP surveillance system through a designated focal point – and it may increase community engagement in health care and acceptance of immunization and surveillance activities.

3.2 – Indications for community-based surveillance in polio eradication

CBS is recommended on a case-by-case basis where health facility-based surveillance cannot be performed or is not functioning optimally. It is a targeted approach to be used in specific situations, particularly in high-risk populations or areas with an elevated risk of undetected poliovirus transmission, importation, or vaccine-derived poliovirus emergence. Some examples include:

- Security-compromised areas,
- Special populations, such as refugees, internally displaced populations, economic migrants, urban slums, fishing communities, mining communities, nomads, ethnic and linguistic minorities, and remote or scattered populations, or
- Populations who are unlikely to receive care at a health facility.

Annex guidance and other resources

For more information, including steps toward establishing CBS, see **Annex 6. Community-based surveillance.**

To discover resources and learn best practices to help you implement a CBS program that is effective, efficient, gender-responsive, and sustainable refer to *Community-based polio surveillance toolkit.*

While CBS can increase the sensitivity and timeliness of AFP case detection, it can also be resource intensive. It is critical **to balance the needs of increasing AFP surveillance sensitivity with the feasibility of implementation.** Training, sensitization, and supervision are minimum essential activities, and the addition of other activities such as reporting incentives or monthly payment, and the

[12] Rather than the full standard AFP case definition (see *Principles of AFP surveillance*, section 1), a simplified AFP case definition should be used when sensitizing community informants, such as: "Report all children with sudden presence of floppy paralysis or weakness."

use of digital technology, mobile phones, or other tools (initial and recurring costs) comes with increased resource and financial needs.

Programmes are recommended to explore more sustainable, cost-effective solutions for closing surveillance gaps such as sensitization activities or adjustments to the AS network. It is recommended that countries avoid creating a stand-alone CBS system for AFP. CBS is more cost effective when used for multiple diseases/conditions rather than a single disease/condition and could lead to a more comprehensive health response thereby improving community health outcomes. A surveillance system landscape assessment can help guide the decision-making process.

However, in some situations, especially in **hard-to-reach and high-risk areas, the stand-alone CBS for AFP may be the only viable option** to achieve the goal of polio eradication. **Identifying which approach** is best to reach hard-to-reach populations should be done in **consultation with local stakeholders, including donors**

For steps in setting up and monitoring community-based surveillance, challenges and solutions, refer to **Annex 6. Community-based surveillance** and **Annex 3. Indicators for AFP surveillance**.

Two CBS modalities have been used in the Global Polio Eradication Initiative

Stand-alone CBS *with volunteers directly linked to polio surveillance officers This modality of CBS is* ***resource intensive*** *because it involved incentives, close supervision, and using specialized digital tools. Although it usually encompasses other VPD, it focuses mostly on polio.*

Integrated CBS*, linked to facility-based surveillance with volunteers usually reporting to focal points within nearby health facilities. This modality of CBS builds upon other existing networks (e.g., multi-pathogen) and is* ***low resource intensive****. It is an integrated and sustainable system.*

3.3 – Summary of challenges with community-based surveillance

For more on CBS-related challenges and solutions, see **Annex 6**.

- Implementing and sustaining effective CBS can be resource intensive, especially for a single-disease or condition. The resources needed for CBS depend upon the country context and the decisions of the surveillance team.
- Hard-to-reach areas present unique challenges for ensuring a reliable line of communication between community informants and surveillance officers. To address this, some teams offer mobile phones or dispense petty cash to pay for communication expenses.
- Low literacy levels within local communities may require more time and effort on the part of the public health staff for adapting AFP surveillance training and sensitization protocols.
- Partially or fully inaccessible areas can impede monitoring and supportive supervision of CBS informants, as well as create problems for conducting AFP case verification and investigation. If this occurs, AFP cases may need to be brought outside inaccessible areas for investigation.
- A considerable percentage of reports of “suspected AFP” may not meet the standard AFP case definition and may give a low yield of actual (“true”) AFP cases, which may increase the workload of public health staff through the added time needed for verification and investigation.

4. Supplemental strategies for special populations

Certain population groups are underserved or not served at all by health systems. While the reasons for these gaps are varied, one finding is that persistently missed population groups often belong to high-risk mobile populations or reside in hard-to-reach or inaccessible areas, including areas affected by

insecurity and conflict. These special population groups are particularly important for disease control and eradication programmes because they have higher susceptibility to infection due to low immunization coverage and are more likely to be missed by surveillance systems. These population groups may adhere to conservative gender norms, which necessitates a comprehensive understanding to build rapport and establish trust.

Guidelines for Implementing Polio Surveillance in Hard-to-Reach Areas and Populations details some strategies (of which CBS is one approach) for implementing surveillance among special populations, with a focus on high-risk mobile populations.[13]

4.1 – What are special populations?

Several different marginalized population groups are at risk of being underserved or altogether missed by surveillance efforts. These include:

- Mobile populations: nomads and seasonal migrants such as agricultural, mine, brick kiln or construction workers;
- Refugees and IDPs living in camps and in host communities;
- Populations in settled areas which are underserved by existing health services such as cross-border populations, slum dwellers, ethnic minorities, islanders, fishermen and those living in hard-to-reach areas; and
- Totally inaccessible population groups, such as those in security-compromised and conflict-affected areas.

Special populations and insecurity

While some countries have hard-to-reach areas due to geographic barriers and transportation issues, some countries face particular challenges in insecure and conflict-affected areas.

Parts of Somalia and Yemen have historically faced similar scenarios, where a lack of security and safety prevents field staff from reaching communities to conduct immunization and surveillance activities resulting in persistent cVDPV outbreaks.

4.2 – Identifying and mapping special groups

By identifying, mapping and profiling unserved or underserved populations, special surveillance and immunization strategies can ensure populations are covered by polio surveillance and immunization. The following data and information are critical to better characterize and reach such groups:

1. Geographic location and population size for mobile groups: itineraries and routes of migration, timing and possible seasonality of nomadic movement;
2. Current access to health services and health-seeking behaviour (see **Annex 11. Health-seeking behaviour**);
3. Availability of the existing surveillance network (facility- or community-based) to detect AFP cases in this special population;
4. Identification of service providers who exist in the area but are not yet participating in polio activities (public and private, including NGOs or faith-based organizations);
5. Availability of options to develop communication activities targeting these special groups;
6. Means of communication through the availability of network coverage and/or readily available use of cell phones for public health officers and community workers and volunteers;
7. General information, such as language, literacy, community structure in terms of leaders and influencers;
8. Roles of women and men within these special population groups, particularly regarding who makes decisions about polio vaccination.
9. Community elders or influencers—both women and men—who shape household-level decision-making.

[13] Global Polio Eradication Initiative (GPEI). Guidelines for Implementing Polio Surveillance in Hard-to-Reach Areas & Populations. Geneva: World Health Organization; 2017 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2020/10/Guidelines-polio-surveillance-H2R-areas.pdf).

4.3 – Implementing a mix of surveillance strategies for each special group

Once special populations have been identified and profiled, surveillance approaches can be specifically tailored to ensure each group is adequately covered by poliovirus surveillance (**Table 3**). A set or mix of suggested surveillance strategies for each kind of special population is recommended.[14] The key recommended strategies are:

Annex guidance

For surveillance strategies suitable to different kinds of special populations, see **Annex 12. Special populations groups.**

1. **Enhanced AFP surveillance** with ad hoc AFP case search and systematic AFP contact sampling.

- Ad hoc AFP case search in large gatherings of nomads, for example during supplemental immunization activities (SIAs) and during mobile outreach services (**Annex 13**).
- Systematic AFP contact sampling for all inadequate AFP samples, with one sample each from three contacts of an AFP cases with inadequate samples, for example. However, in coordination with surveillance and laboratory teams, this can be expanded to all AFP cases from special populations (**Annex 14**).

2. **Targeted healthy children sampling** can be conducted in special populations that are at high risk for poliovirus; however, this is not a routine strategy and can only be initiated in coordination with and with the approval of surveillance and laboratory teams at the national and regional levels (**Annex 15**).
3. **Ad hoc environmental surveillance sampling sites** can enhance surveillance in areas considered at high risk of poliovirus circulation because of an outbreak or the sudden influx of an at-risk population.[15] This strategy should only be considered after strengthening AFP surveillance and in coordination with the laboratory.

Table 3. Examples of activities by type of special populations

Population type	Activity examples
Populations living in security-compromised areas	• Access mapping and analysis of population dynamics and movements; map gender norms and access negotiation, if needed. • Coordination with armed forces or groups and relevant partners. • Review of surveillance network and establishment of CBS as appropriate, including identifying and training appropriate focal points. • Enhanced surveillance in parts of the country bordering inaccessible areas and wherever IDPs come out of inaccessible areas and are received (e.g., adding to reporting sites based on health-seeking behaviour, identification and training of local informants).

CBS = community-based surveillance; IDP = internally displaced populations

[14] Global Polio Eradication Initiative (GPEI). Guidelines for Implementing Polio Surveillance in Hard-to-Reach Areas & Populations. Geneva: World Health Organization; 2017 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2020/10/Guidelines-polio-surveillance-H2R-areas.pdf).
[15] Global Polio Eradication Initiative (GPEI). Standard Operating Procedures (SOPs) for Polio Environmental Surveillance Enhancement Following Investigation of a Poliovirus Event or Outbreak. Geneva: World Health Organization; 2020 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2021/02/SOPs-for-Polio-ES-enhancement-following-outbreak-20210208.pdf).

Table 3 (continued)

Population type	Activity examples
Nomadic populations	• Mapping and profiling of nomadic groups in coordination with nomad leaders; AFP focal points designated for each nomad group. • Determining itineraries and migration pathways; mapping healthcare facilities and providers, as well as veterinary services, along the route. • AFP sensitization among providers and in public places along migration pathways (i.e., in markets, at watering points and camps frequented by nomads); study of nomads' health-seeking behaviour. • Regular contact with AFP focal points established and maintained. • A similar approach should be used for other mobile population groups, as appropriate: seasonal migrants; mine, brick kiln and construction workers; etc.
Refugees and IDPs in camps	• Camp AFP focal point identified, designated and included in the AS network. • Profile assessed of new arrivals: origin, immunization status, etc. • Active AFP case search. • Permanent vaccination and surveillance team installed.
Refugees and informal IDPs in host communities and outside camps	• Key informants identified from the community and included in AS network (see **Community-based surveillance**). • Tracking of IDPs and refugees in the community via special "tracker teams" to support understanding their health-seeking behaviour. • AS network adjusted to include providers serving refugees and IDPs.
Cross-border groups	• Mapping of official and informal border crossings, villages and settlements, special groups, gathering places and seasonal movements; surveillance networks installed on both sides of the border. • Averages estimated for numbers of population moving and migrating across borders. • Regular contact between AFP surveillance officers on both side of the border to ensure sharing of data, cross notification, joint investigation and tracking of mobile groups. • Organizations working at border entry and exit points identified (e.g., immigration, port health services and police); orientation and sensitization on polio and AFP surveillance provided to healthcare workers on both sides.
Communities in urban slums	• Profile of communities and their origin. • Health-seeking behaviour studied, with adjustments to AS network. • Active AFP case search conducted. • Evaluation of any need to add environmental surveillance sites.
Other hard-to-reach communities	• Mapping and profile of special populations who may live in remote areas such as islanders and highlanders, or ethnic minorities who may not access the same health facilities as the broader population. • Identification of and regular contact with local key informants. • Study health-seeking behaviour of these communities and adjust the network.

AFP = acute flaccid paralysis; AS = active surveillance; IDP = internally displaced population

The decision to develop, implement and possibly modify any of these strategies should be discussed by all stakeholders involved at the local, national, and regional levels, including national and regional laboratories.

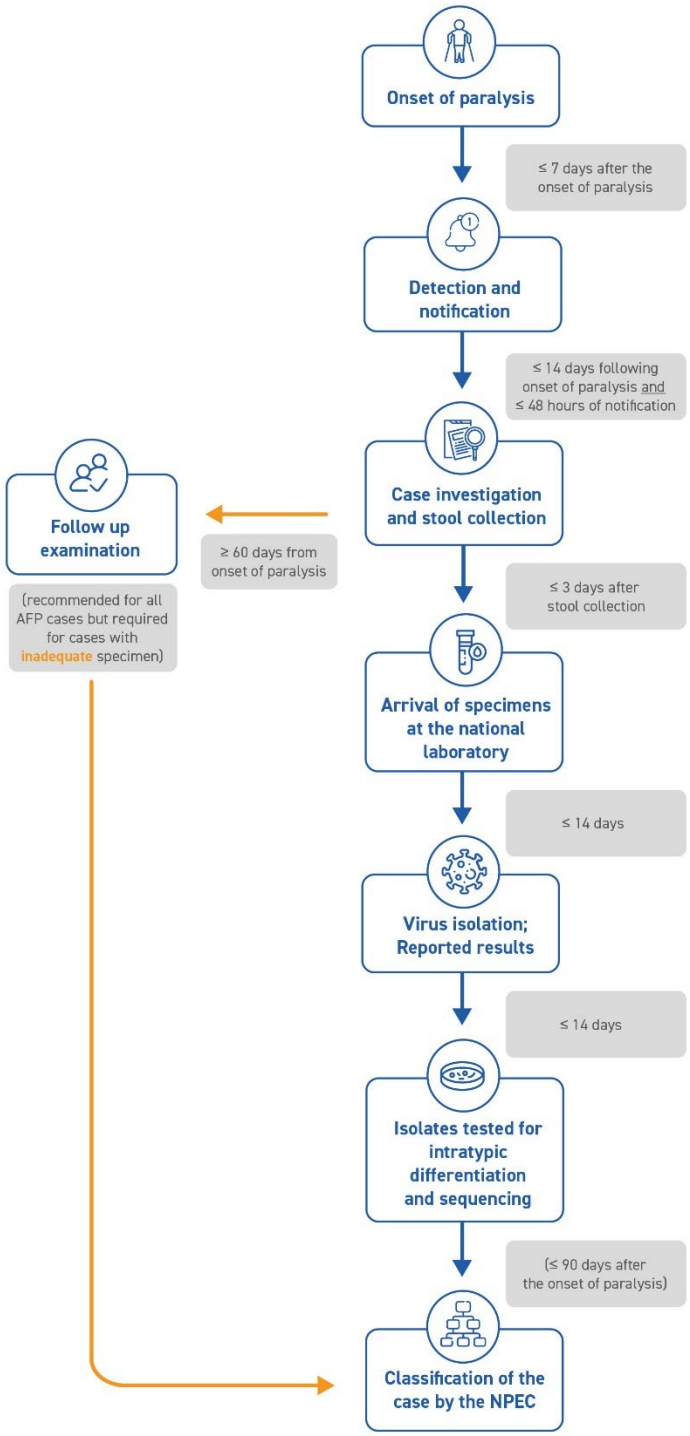
4.4 – Challenges with supplemental strategies for special populations

Challenges to anticipate when implementing poliovirus surveillance in special groups are like those for CBS. See also **Annex 12. Special population groups** and **Annex 6. Community-based surveillance**.

CASE ACTIVITIES for AFP surveillance

Case-related activities for AFP surveillance – from the onset of paralysis in an individual to final case classification – require timely coordination between field and laboratory surveillance (**Fig. 1**). All case-related activities should progress quickly so final classification by a National Polio Expert Committee (NPEC) can take place within 90 days of paralysis onset.

Fig. 1. Process of AFP surveillance



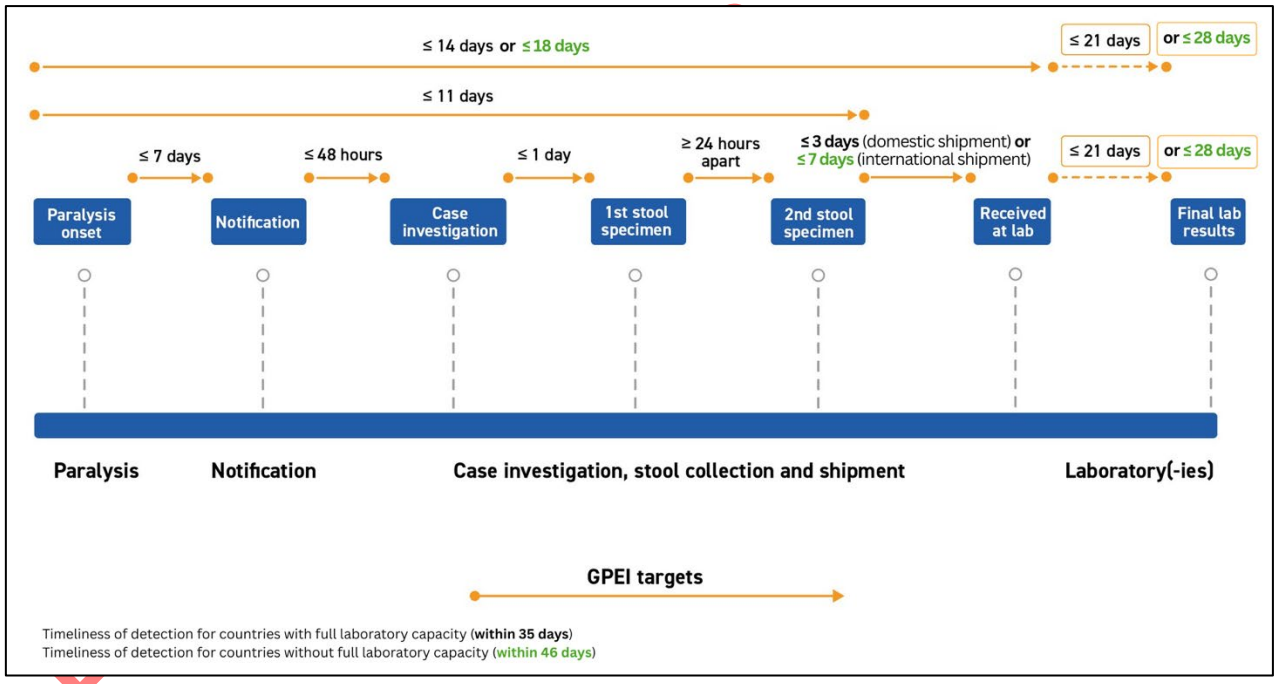
NPEC = National Polio Expert Committee
Source: WHO.

1. Timely detection

Responding swiftly to a possible polio case is critical: the earlier poliovirus is detected and confirmed, the faster outbreak response can be implemented to interrupt transmission. The goal established by the GPEI Strategy 2022–2026 is that all polioviruses should be confirmed and sequenced within **35 days** of the onset of paralysis (**Fig. 2, Fig. 3a**).[16] However, differences in domestic laboratory capacity affect timeliness. Countries with full laboratory capacity (i.e. capable of performing virus isolation [VI], intratypic differentiation [ITD], and sequencing) can achieve this target, whereas countries without full laboratory capacity face challenges due to the need to make international shipments (see text box below). A revised target of ≤**46 days** is therefore set for countries without full laboratory capacity to allow for a 7-day window for international shipments rather than the historical 3-day window. (**Fig. 3b**) Given this accelerated timeline, field and logistical activities – from onset of paralysis to the arrival of stool specimens at a WHO-accredited polio laboratory – must be completed within 14 days for countries with full laboratory capacity and within 18 days for countries without full laboratory capacity.

Note that the use of timeliness-of-detection indicators is recommended to measure the **speed** at which activities are completed; certification standards and indicators used to gauge the **quality** of AFP surveillance remain unchanged (see **Annex 3. Indicators for AFP surveillance**).

Fig. 2. Timeliness of detection (onset to final result) for countries with full laboratory capacity (≤35 days) and countries without full laboratory capacity (≤46 days)



Source: WHO.

[16] Global Polio Eradication Initiative (GPEI). Polio Eradication Strategy 2022–2026: Delivering on a promise. Geneva: World Health Organization; 2021 (accessed 17 Dec 2025, https://apps.who.int/iris/bitstream/handle/10665/345967/9789240031937-eng.pdf).

Overview of Timeliness of Detection Targets

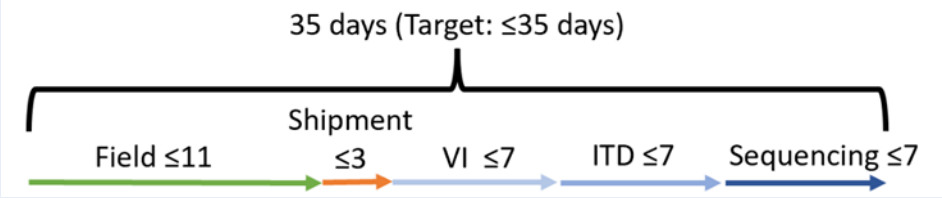
Countries with full laboratory capacity:

Overall turnaround time: 42 days to obtain laboratory results.

- ✓ Field activities: 11 days
- ✓ Specimen shipment (domestic shipment): 3 days
- ✓ Laboratory processing: 28 days

Negative stool specimens will be confirmed in the virus isolation (VI) step and will not proceed further, whereas stool specimens positive for poliovirus will generally grow within 7 days during the VI step and then proceed to intratypic differentiation (ITD) and sequencing. **The ≤35-day target is therefore achievable for positive samples in countries with full laboratory capacity.**

Fig. 3a. Timeliness of detection for positive AFP cases for countries with full laboratory capacity



ITD = intratypic differentiation; VI = virus isolation.
Source: WHO.

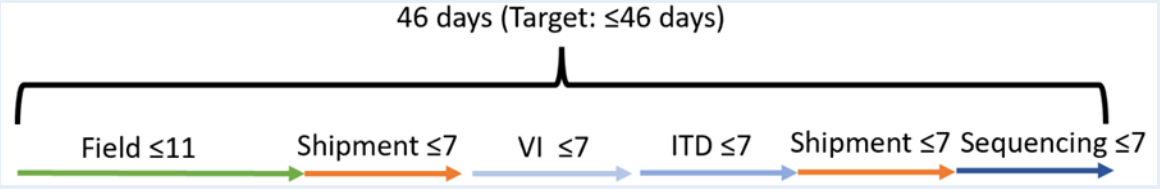
Countries without full laboratory capacity:

Overall turnaround time: 53 days to obtain laboratory results.

- ✓ Field activities: 11 days
- ✓ Specimen shipment (first international shipment): 7 days
- ✓ Laboratory processing – initial (VI and ITD): 21 days
- ✓ Specimen shipment (second international shipment): 7 days
- ✓ Laboratory processing – finalize (Sequencing): 7 days

The testing steps, turnaround time, and availability of results is the same as described above. With the additional time for international shipments, **the ≤46-day target is achievable for positive samples in countries without full laboratory capacity.** Results may be received faster if samples have a maximum of one international shipment.

Fig. 3b. Timeliness of detection for positive AFP cases for countries without full laboratory capacity



ITD = intratypic differentiation; VI = virus isolation.
Source: WHO

1.1 - Reduce delays

Every stage of the process depicted in **Fig. 2** should be targeted for time-saving interventions, as timeliness will be closely monitored (see **Monitoring AFP Surveillance** and **Annex 3**. **Indicators for AFP surveillance**).

Annex guidance
Annex 16. Improving timeliness of case and virus detection highlights bottlenecks and delays that may occur at various stages and administrative levels, their possible causes, and ways the programme can address them. Definitions to support case investigations are found in **Annex 1. Poliovirus**.

2. Case notification and verification

To support case verification and investigation, all supplies and materials should be prepared in advance to allow quick deployment of the investigation team. This includes case investigation forms (CIFs), laboratory request forms, stool specimen collection kits and stool carriers.

2.1 – Notify the case

AFP cases must be notified within **seven (7) days** of the onset of paralysis. A physician, health worker, or community informant or volunteer who identifies an AFP case must therefore report (or notify) it **immediately** to their public health surveillance team. ***When in doubt, always report and investigate.***

3. Case investigation and validation

Once reported, the case must be **investigated within 48 hours of notification** by a trained, designated AFP focal point or surveillance officer who completes the CIF.

To minimize the risk of missing key information that may explain delays in detection, CIFs capture the social profile of cases and their community, as well as health-seeking behaviour and gender-related information. (See **Annex 7. Examples of forms** for modified CIFs for endemic and non-endemic countries.)

3.1 – Verify the case

Before starting the investigation, the AFP focal point or surveillance officer must verify whether the case meets the AFP case definition. An AFP case is defined as a child younger than 15 years of age presenting with sudden onset of floppy paralysis or muscle weakness due to any cause, or any person of any age with paralytic illness if poliomyelitis is suspected by a clinician.

Verification ensures cases are systematically prepared for review and investigation.

- If the case meets the case definition, the investigation is carried out.
- If the case does not meet the case definition, the AFP focal point/surveillance officer stops the investigation and records the case as ‘not an AFP’ on the CIF. The reasons for ‘not an AFP’ should be clearly documented. A list of these cases should be kept separately.
- If the case has died**,** the investigation still needs to be conducted. The CIF must be filled with the case history (date of paralysis onset, travel history of the case, history of health seeking, household members and visitors) and AFP contact specimens collected. (See **AFP contact sampling** and **Annex 14**). Such cases will be sent to the NPEC for classification.
- If in doubt as to whether the case meets the definition, the case should be investigated.

For this step, verification does not require filling out any separate forms, and the verification is not recorded as an activity in any line list.

3.2 – Investigate the case

Within 48 hours of the notification, the surveillance officer must investigate the case by performing the following steps:

1. Speak to the physician or health worker who reported the case and inquire about the working or provisional diagnosis currently being considered if the case was seen by a physician. (See “Differential diagnosis” under **Annex 1. Poliomyelitis.** Signs and symptoms to look out for are asymmetric flaccid paralysis, fever at onset, rapid progression of paralysis and the preservation of

2. sensory nerve function.)
3. Invite the attending physician or health worker to join in the case investigation.
4. Document the case by taking the patient's history from the caregiver, transcribing it to the CIF, including both the travel history and history of healthcare-seeking for the paralysis.
5. Conduct a physical examination**.** Note that the objective of the clinical examination in AFP case investigation is to *establish whether there is any degree of paralysis or paresis*, regardless of the current clinical diagnosis. It is therefore NOT to establish an exact medical-neurological diagnosis.
6. Begin to organize the collection of two stool specimens.

Annex guidance

For a detailed explanation of how to conduct the investigation of an AFP case (case documentation, history taking, physical examination and stool collection), see **Annex 8. AFP case investigation.**

3.3 – Assign an EPID number

A unique case epidemiologic identification (EPID) number must be assigned to each AFP case. The EPID identifies the geographic location and year the *onset of paralysis* took place and indexes the AFP case count of that location. The EPID number should be assigned at the time of case investigation so that it can be used in the CIF and the laboratory request form. This is usually done with coordination at the provincial or the national level, depending on the country.

The EPID number is a 14-character string that consists of the following codes (**Figs. 4** and **5**):

- 1st to 3rd characters specify the country code in letters
- 4th to 6th characters specify the first administrative level (usually province) in letters.
- 7th to 9th characters specify the second administrative level (usually district) in letters.
- 10th to 11th characters specify the year of paralysis onset.
- 12th to 14th characters represent the 3-digit number of the case (using a chronological order)

Fig. 4. Nomenclature for EPID

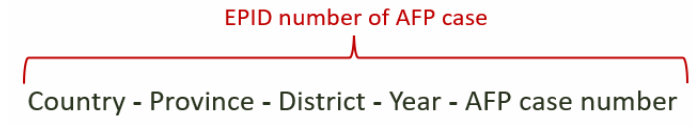
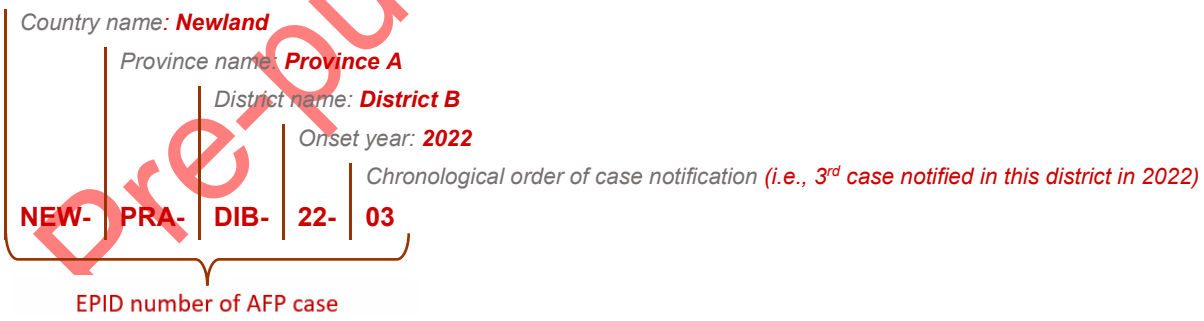


Fig. 5. Example of EPID number assignment



International and national cross-notification: If it is ascertained that the onset of paralysis occurred in a country other than where the AFP case was detected, the AFP case will be assigned (or re-assigned) to the location where onset occurred. All parties should be informed, including field, data and laboratory surveillance teams. International cross-notification is facilitated by the WHO regional office. Likewise, if the onset of paralysis occurred in another location in the country, national cross-notification is usually coordinated at the subnational level, according to national guidelines. The EPID number assigned to the case may also need to be modified accordingly.

3.4 – Validate the case

Crosschecking the accuracy of information and data recorded in the CIFs by someone other than the person who reported the case is referred to as *AFP case validation*. It is ideally conducted within 14 days of the original case investigation by senior surveillance staff, typically by secondary and tertiary supervisors, with the case and caregivers. The focus of case validation should be given to critical data: date of onset, place of onset, areas visited prior to onset, stool collection dates/processes, vaccine doses received by essential immunization (EI) and supplementary immunization activities (SIAs), health-seeking history, and collection of appropriate contact samples. AFP surveillance data must be updated based on validation findings, and discrepancies systematically recorded.

For a subset of reported AFP cases either selected at random or based on country programme-specific criteria (such as an unexpected increase in reporting), the target for case validation is 30%[17] measured on a monthly or quarterly basis, depending on the country's epidemiological status and risk.

It is important that case validations are completed by a gender balanced team because validations are often completed at the home of patients and caregivers. Having a gender-balanced team will improve access to and engagement with women caregivers, who are likely to be the primary caregivers for most AFP cases. In addition, it may be important to explore whether the belief systems of the caregivers differ based on the child's gender.

4. Stool collection and transport to the laboratory

4.1 – Collect stool specimens

To optimize isolation of poliovirus from a WHO-accredited polio laboratory, two stool specimen must be collected as soon as possible, preferably within 14 days and no later than 60 days after the onset of paralysis (**Fig. 6**).

Fig. 6. Stool collection based on onset of paralysis

Paralysis onset ≤14 days	Paralysis onset >14 days to <60 days	Paralysis onset ≥60 days to ≤6 months	Paralysis onset >6 months

• Conduct AFP case investigation
• Collect stool specimens
• Remember, stool specimens can be deemed inadequate upon arrival at the laboratory.
	• Conduct AFP case investigation
	• Collect stool specimens
	• Additionally, conduct:
	  • AFP contact sampling
	  • 60-day follow-up examination
		• Conduct AFP case investigation
		• Conduct 60-day follow-up examination
		• No stool specimens collected from AFP case or AFP contacts
			• Record information on "Unreported AFP Case" line list
			• No AFP case investigation
			• No stool specimens collected from AFP case or AFP contacts

AFP = acute flaccid paralysis
Source: WHO.

The chances of isolating poliovirus are greatest when the two specimens:

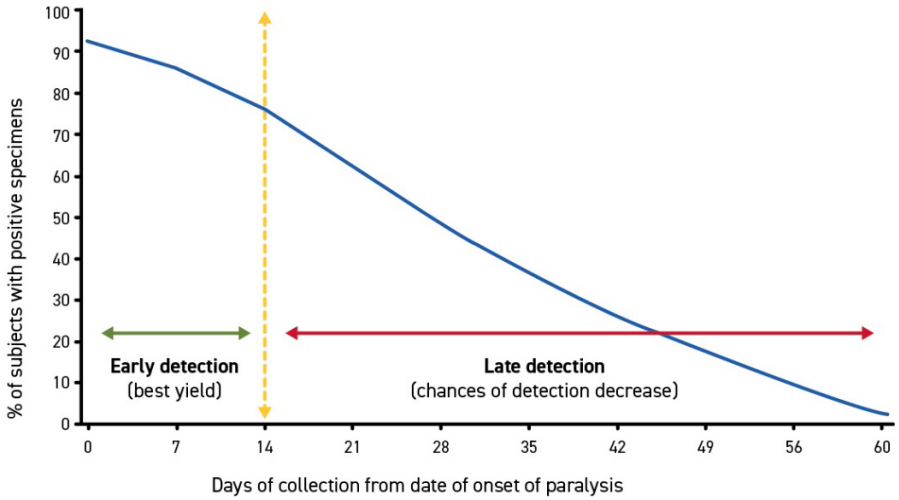
- are collected as soon as possible after onset of paralysis (the first specimen should therefore be collected at the time of the investigation or as soon as possible thereafter);
- are collected within 14 days of paralysis onset and no later than 60 days;
- are collected at a minimum of 24 hours apart from each other's collection; and
- arrive at a WHO-accredited laboratory within three (3) days of collection with good reverse cold chain.

Virus shedding is intermittent, hence the need to collect two specimens at least 24 hours apart. It is also most intense during the first two weeks after paralysis onset, hence the need to collect the two

[17] Case validation ranges from 10% to 30% depending on the context; larger countries will tend to validate 10% of their AFP cases.

specimens as soon as possible and no later than 60 days after paralysis onset (**Fig. 7**). For cases detected after 60 days after paralysis onset and up until six months after onset, a CIF should still be completed but no stool specimens should be collected (see **Fig. 6** above).

Fig. 7. Poliovirus detection in stool specimens



Source: Adapted from Alexander JP, Gary HE, Pallansch MA, Duration of Poliovirus Excretion and Its Implications for Acute Flaccid Paralysis Surveillance: A Review of Literature, J Infect Dis 175(1):S175-82;1997 (https://doi.org/10.1093/infdis/175.Supplement_1.S176).

Stool specimens should ideally be collected at a health facility by trained personnel. If specimens cannot be collected at a health facility and must be collected by a caregiver at the home of the case, a sample collection and transport kit with frozen ice packs should be left with the caregivers. Ensure the instructions are clearly understood, using simple language if needed, with contact information in case of questions or problems arise. Make an appointment to change melted ice packs and collect both specimens.

Annex 8. AFP case investigation provides a standardized, step-by-step procedure for stool collection, including a list of materials and supplies.

Stool specimen collection needs to be adequate to maximize the laboratory's chances of isolating and confirming the presence of poliovirus (see text box to the right). **Inadequate collection of specimens** points to gaps in surveillance quality and may lead to missed detection of virus transmission.

Adequate stool collection

- Two (2) stool specimens.
- Collected at a minimum 24 hours apart from each other's collection.
- Collected within 14 days of the onset of paralysis.
- Received at a WHO-accredited laboratory in good condition (at least 8 grams, reverse cold chain maintained from collection to arrival at laboratory, with no evidence of desiccation or spillage).

Inadequate stool can be due to:

- late detection of the case (samples collected >14 days after the onset of paralysis);
- late investigation (samples collected >14 days after the onset of paralysis);
- the death of the case or loss to follow-up of the case before sample collection;
- constipation of AFP case (i.e., zero or one stool specimen collected);
- improper collection procedure or bad conditioning (such as leaks from non-recommended containers);
- poorly maintained reverse cold chain; and
- samples lost in transit.

The probability of not isolating poliovirus in inadequate stool specimens is high. **AFP contact sampling** is recommended to increase the probability of confirming polio through epidemiological linkage for all AFP cases with inadequate stool specimens (see **AFP contact sampling** and **Annex 14**).

Temperature effects on poliovirus

The properties of wild poliovirus type 1 (WPV1) show the risks of exposing stool specimens to prolonged high temperatures.

- At 25°C, WPV1 is highly stable for at least 28 days
- At 35°C, WPV1 is stable for four days but becomes undetectable by D16 days.
- At 45°C, WPV1 is undetectable by day four.

The probability of detecting virus is further reduced if the concentration of virus in the specimens is low.

To be confident the virus is retained if it is present, stool specimens must be sealed in containers and stored immediately inside a refrigerator or placed between frozen ice packs at 4-8°C in a cold box, ready for shipment to a laboratory. Undue delays or prolonged exposure to heat on the way to the laboratory may destroy the virus.

4.2 – Store and transport specimens

In many countries, the WHO and the Ministries of Health (MOH) have contracts with commercial courier companies to provide ground transport and/or air transport service to expedite and/or facilitate specimen transport. Based on established indicators, transport time from collection of the second stool specimen to arrival to the WHO-accredited laboratory should not exceed three (3) days for countries with domestic laboratory capacity and not more than seven (7) days for countries without domestic laboratory capacity. Specimens should always be kept in reverse cold chain.

Stool specimens should arrive at the laboratory in good condition with the following criteria met:

- adequate quantity (8–10 grams in each container, the size of two adult thumbnails);
- no leakage and no desiccation or drying out of the specimens;
- appropriate temperature and reverse cold chain maintained; and
- complete documentation (CIF and laboratory request form).

4.2.1. Maintain the reverse cold chain during storage and transport

Reverse cold chain refers to a system of storing and transporting samples at a temperature between 4° and 8° C from the moment of collection until arrival at the laboratory. It is critical as an interruption of the reverse cold chain through prolonged exposure to higher temperatures or repeated freezing and thawing may decrease the ability of the laboratory to isolate the poliovirus.

Specimens must be stored at precise temperatures determined by when they can be sent to the laboratory (**Table 4**). "Batch send-off," or delayed shipping to the laboratory until several specimens have been collected, should be avoided as it increases the risk of interrupting the reverse cold chain and inactivating the poliovirus so that virus detection is delayed or impossible.

Table 4. Storage requirements based on transport schedule

If transport occurs	Storage mechanism and temperature requirement
≤72 hours after collection	Store samples in specimen carriers with frozen ice packs 4°–8°C.
>72 hours after collection	Store samples in a freezer at or below -20°C until transport to the laboratory is ready. Do not freeze with vaccines or food.

C = Celsius

5. AFP contact sampling

The sensitivity of an AFP surveillance system to detect ongoing circulation of WPV1 or VDPVs can be increased by collecting and examining stool specimens from children who have been in direct contact with the AFP case as they are likely to have subclinical or asymptomatic infection.

AFP contact sampling is the collection and testing of **one (1) stool specimen** from **three (3) children** who have been in direct contact with an AFP case in the week prior to the onset of paralysis and/or in the two-week period after onset.

The recommended criteria to define AFP contacts are:

- children preferably younger than 5 years of age;
- children in contact with the AFP case within the week prior to or two weeks after onset of paralysis;
- children with frequent contact with the AFP case, such as siblings and other children living in the same household and/or neighbouring children who played with the AFP case during the period of interest (e.g., touching, sharing toys and food).

5.1 – Determine if AFP contact sampling should be conducted

Select circumstances may warrant conducting AFP contact sampling to increase the sensitivity of the surveillance system.

- **Initial case investigation:** AFP contact sampling should be conducted during the initial AFP case investigation if it is known that two stool specimens cannot be collected in a timely manner (within 14 days of paralysis onset). The contact sampling should ideally be conducted within seven (7) days of case notification. It can be done up to 60 days (two months) after onset of paralysis of the AFP case, though it should be noted that the longer the wait to conduct the investigation, the lower the probability of detecting virus (if present) in the stool specimens.
- **Follow-up based on inadequate stool specimens:** AFP contact sampling should be conducted if the laboratory reports the stool specimens of the AFP case were received in poor condition and if there is no chance of collecting, once more, adequate stool specimens from the AFP case.

AFP contact sampling can also be performed as a part of regular AFP surveillance activities or as a part of outbreak response activities (**Table 5**). However, any decision to expand AFP contact sampling must be made in close consultation among regional and national polio teams and the laboratory to ensure that the expansion is justified and that the increase in laboratory workload can be accommodated.

Table 5. AFP contact sampling during field surveillance and outbreak response

Recommended conditions for AFP contact sampling	
Field surveillance	• All AFP cases with inadequate specimens – i.e., in one or more of the following situations: - 0 or 1 stool specimen was collected from the AFP case (not 2) - At least one specimen was collected late, >14 days after paralysis onset - Two specimens were collected less than 24 hours apart - Specimens arrived in the laboratory in poor condition. • All AFP cases reported in security-compromised or hard-to-reach areas to expand the limited opportunity to reach such communities and strictly by exception
Outbreak response	For a limited period in specific geographic areas (outside the outbreak area and in specific at-risk areas) to enhance the probability of detecting poliovirus. Implemented only under special circumstances and with prior approval of both the regional and global polio teams.

AFP = acute flaccid paralysis

AFP contact sampling should <u>not</u> be done when the AFP case has already been confirmed as WPV or VDPV, as contact sampling will not provide additional information, or when the onset of paralysis of the AFP case occurred more than 60 days earlier.

5.2 – Conduct AFP contact sampling

Annex guidance
A job aid to support contact sampling is available in **Annex 14. AFP contact sampling**.

AFP contact sampling should be done adhering to a standardized procedure:

1. Identify potential contacts. Give priority to younger children (under five years of age) who are in frequent, direct contact with the AFP case.

Include siblings, household members or playmates. If the AFP case stayed in other locations one week prior to and/or two weeks after paralysis onset, then identify additional contacts at these locations.

2. Explain the purpose of collecting samples to parents or guardians of the selected contact.
3. Collect one stool sample each from three separate contacts.
4. Follow AFP surveillance protocols for collection, storage, and transport of stool specimens.
5. Fill out a separate laboratory request form for each contact.
6. Each specimen should be labelled clearly as a contact of the AFP case, using the EPID number of the AFP case with an added contact indicator ("C") and number; that is, the suffixes: -C1, -C2, -C3 (**Figs. 8** and **9**).

Fig. 8. Nomenclature for EPID of contacts

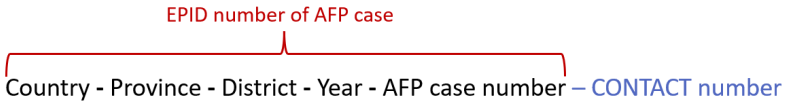
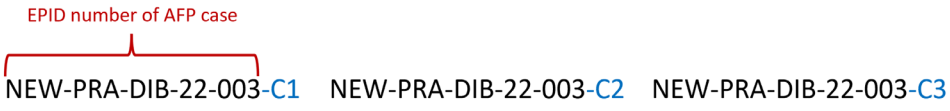


Fig. 9. Example of EPIDs for the three contacts of AFP case "NEW-PRA-DIB-22-003"



5.3 – Interpret AFP contact sampling results

Table 6 summarizes how laboratory results of AFP contacts should be interpreted to link AFP cases to poliovirus epidemiologically.

Table 6. AFP case and contact epidemiological link

AFP case info			AFP contact	Interpretation and final classification		
Days since paralysis onset	Recommend stool specimen collection?	Specimens adequate?	AFP contact sampling recommended?	If poliovirus detected from stool of AFP case	If poliovirus detected from stool of AFP contact	If no poliovirus detected from stool of AFP case or contact
Days 0 - 14	Yes	Adequate	No (See remark)	Case: Confirmed polio		Case: Discarded
Days 0 - 14	Yes	Inadequate	Yes	Case: Confirmed polio	Case: Confirmed polio Contact: polio positive, human source	Case: NPEC review recommended for all AFP cases and required for those with residual paralysis after 60 days post paralysis onset, and for those with no 60-day follow-up result (died or lost to follow-up)
Days 15 -60 (See remarks 3)	Yes	Inadequate	Yes	Case: Confirmed polio	Case: Confirmed polio Contact: polio positive, human source	Case: NPEC review recommended for all AFP cases and required for those with residual paralysis present after 60 days post paralysis onset, and for those with no 60-day follow-up result (died or lost to follow-up)

AFP = acute flaccid paralysis; NPEC = National Polio Expert Committee

Further details to support interpreting laboratory results on AFP contact sampling:

1. If the AFP case was WPV-negative or VDPV-negative, the isolation of WPV or VDPV from a contact confirms the AFP case as a WPV or VDPV case, even if the AFP case had adequate stool specimens.
2. If the AFP case was WPV-positive or VDPV-positive, the isolation of WPV or VDPV from a contact still represents a programmatically valuable information. However, the virus-positive contacts of AFP cases are **not** classified as confirmed poliovirus cases because they do not meet the case definition, which requires AFP. Results are included as "others" or "other human" in the poliovirus isolation count.
3. AFP stool specimens collected after 60 days will be considered as inadequate, and no AFP contact sampling should be conducted. A positive isolate found in the AFP stool specimen will not confirm the case as polio and will be interpreted as an *incidental finding*, and any polio positive isolate found in the specimen of a contact collected 60 days after the onset of paralysis of the AFP case will not be used as epidemiological link to confirm polio in the AFP case.

6. Laboratory testing and reporting

Sensitive surveillance to detect polioviruses requires effective collaboration between clinicians, epidemiologists, immunization programmes and laboratories at the national, regional and global levels.

6.1. – The Global Polio Laboratory Network

The Global Polio Laboratory Network (GPLN) was established by the WHO to ensure that high-quality diagnostic services are available to all countries. The GPLN processes over 233 000 stool samples and more than 16 000 sewage samples per year. As of 2025, the network consists of 144 active WHO-accredited laboratories in 91 countries across the 6 WHO regions (**Fig. 10**).

Fig. 10. Laboratories within the GPLN by laboratory role

Source: GPLN, 2021.

WHO-accredited polio laboratories are laboratories that conform to GPLN standards or codes of practice. The accuracy and quality of testing is monitored by WHO through an annual accreditation programme that includes onsite reviews of infrastructures, equipment, standard operating procedures, work practices, performance and external proficiency testing. To be included in the network, laboratories must have the proven capability and capacity to detect, identify and promptly report WPVs and VDPVs that may be present in clinical and environmental specimens.

The primary roles of GPLN laboratories are to:

- detect poliovirus from stool specimens and sewage samples by isolation using cell culture;
- identify and differentiate isolated polioviruses using intratypic differentiation (ITD);
- genetically characterize poliovirus using sequencing methods, which also determine whether isolated viruses are wild, vaccine-like or vaccine-derived;
- trace the origin of polioviruses isolated from AFP cases and contacts or from sewage samples;
- maintain a reference bank of nucleotide sequences of known viruses to allow rapid tracing of the geographic origin of new isolates;
- assess vaccine potency and efficacy if circumstances indicate possible failure;
- develop, validate and implement new testing methodologies for poliovirus detection (e.g., ongoing validation of two direct detection methods for testing stool samples and sequencing isolated viruses: direct detection with intratypic differentiation (DD-ITD) and direct detection by nanopore sequencing (DDNS));
- conduct serosurveys if knowledge of the antibody status of the population is important; and
- provide evidence that polio has been eradicated.

All national, regional and global polio laboratories in the GPLN follow WHO-recommended procedures for detecting and characterizing polioviruses from stool specimen and sewage samples derived from AFP cases/contacts and environmental surveillance, respectively.

Laboratory tools for polio eradication

Molecular detection and comparative genomic sequencing are major surveillance tools for eradication.

- Poliovirus patterns of transmission can be inferred from analysing patterns of poliovirus evolution. Poliovirus is a rapidly evolving virus with approximately 1% substitutions per year in the genome of the capsid region. Viral strain evolution is analysed to estimate the extent and duration of infections and virus circulation.
- Molecular epidemiological analysis provides additional information to link cases and identify persistent reservoirs. Sequence comparisons can also determine the source of a poliovirus infection and distinguish among viruses imported into a new area or country, endemic virus circulation, re-introduction of poliovirus to a population, and VDPV strains, all of which help to inform eradication efforts. All WPV and VDPV isolates are subjected to partial (viral protein 1 [VP1] or capsid) or full genomic sequencing and phylogenetic analysis.
- While interpreting genetic trees, long horizontal branches indicate missing information. Viral sequences at ends of long branches are called “orphans” if isolates are >1.5% different in the VP1 capsid nucleotide sequence from any isolate previously detected. Isolation of an orphan virus suggests silent circulation or no detection for an extended period, both of which indicate potential gaps in surveillance.

At a basic level, results from genomic sequencing help to:

- ✓ confirm a polio diagnosis;
- ✓ characterize the poliovirus isolates at the molecular level;
- ✓ define and monitor how poliovirus is spreading by comparing the nucleotide sequences of different poliovirus isolates detected over time and in different localities; and
- ✓ detect specimen or sample cross-contaminations as part of a GPLN quality assurance system.

6.2 – Coordination between field and laboratory surveillance

Polio field and laboratory surveillance teams work closely to:

- collaborate on surveillance activities that affect workload and testing capacities, such as AFP contact sampling and targeted healthy children sampling;
- ensure that the laboratory is notified in advance of the shipment of stool specimens;
- ensure that the laboratory provides feedback on the condition of stool specimens, particularly if there is a need to recollect specimens;
- collaborate on data sharing to ensure accurate case details (e.g., EPID numbers), with corrective action taken when there are problems;
- share epidemiological findings, laboratory results, classification and genomic sequence results;
- coordinate so there are no discrepancies between the data held by the field team and laboratory to support the calculation on indicators; and
- reduce the period between the identification of an AFP case and final laboratory results so new positive cases can be responded to as swiftly as possible. The duration of specimen transport is used as one of the key indicators for timeliness: **≥80%** of stool specimens should arrive at a WHO-accredited polio laboratory under reverse cold chain conditions **within three (3) days (domestic laboratory capacity) or seven (7) days (no/limited domestic laboratory capacity) of collection** of the second stool specimen collection.

6.3 – Possible laboratory results

Possible laboratory results can include: OPV-like, Sabin-like (SL), nOPV2-like (nOPV2-L), WPV, VDPV, non-polio enteroviruses (NPEV), non-enteroviruses (NEV), or no virus isolated (NVI) (**Table 7**).

Table 7. Possible laboratory results from the testing of stool and environmental samples

Lab results	Type of virus	Reported as
OPV-like or Sabin-like (SL), nOPV2-like	Vaccine strain poliovirus type 1, 2 or 3	SL1, SL2, SL3, nOPV2-L
Wild poliovirus	Wild poliovirus type 1, 2 or 3	WPV1, WPV2, and WPV3
Vaccine-derived poliovirus	Vaccine-derived poliovirus type 1, 2 or 3, further classified as: ● circulating VDPVs (cVDPVs) ● immunodeficiency-associated VDPVs (iVDPVs) ● ambiguous VDPV (aVDPV) This is done by combining laboratory results with epidemiological and clinical information.	VDPV1, VDPV2*, VDPV3, further reported as: ● cVDPV1, cVDPV2*, cVDPV3 ● iVDPV1, iVDPV2*, iVDPV3 ● aVDPV1, aVDPV2*, aVDPV3 * To differentiate Sabin from nOPV origin, VDPV2 can be further classified as VDPV2-n (when it is from nOPV2 origin).
Non-polio enteroviruses	Non-polio enteroviruses	NPEV or NPENT
Non-enteroviruses	Non enteroviruses	NEV
No virus isolated	No virus isolated	NVI

aVDPV = ambiguous vaccine-derived poliovirus; cVDPV = circulating vaccine-derived poliovirus (types 1,2,3); iVDPV = immunodeficiency-associated vaccine derived poliovirus (types 1,2,3); NEV = non-enterovirus; nOPV = novel oral polio vaccine; nOPV2 = novel oral polio vaccine type 2; nOPV2-L = novel oral polio vaccine type 2-like; NPENT = non-polio enterovirus; NPEV = non-polio enterovirus; NVI = no virus isolated; OPV = oral polio vaccine; SL = Sabin-like (types 1,2,3); VDPV = vaccine-derived poliovirus (types 1,2,3); VDPV2-n = vaccine-derived poliovirus type 2 origin; WPV = wild poliovirus (types 1,2,3)

A combination of findings is possible for: OPV-like, SL, nOPV-like; WPV; VDPV (including VDPV-n); and NPEV. Results that fall under the second or third categories (i.e., WPV or VDPV) may indicate an event or outbreak and should be followed by appropriate response. All results should be communicated to all relevant administrative levels of the polio eradication programme, as well as the submitting physician or health facility. If available, further clinical management can be offered by the attending physician, or a polio rehabilitation programme in some countries.

6.3.1 Investigating an orphan poliovirus

Poliovirus evolves rapidly, at approximately 1% substitutions per year in the VP1 region of the viral genome. Orphan viruses are defined as isolates that are > 1.5% different in the VP1 region from any previously detected isolate. When a laboratory flags a virus as “orphan,” it provides both the nucleotide difference from the parent strain (for VDPV) and the difference from the nearest relative. Sequencing data indicate that the virus has circulated undetected for a certain period, but do not reveal where this circulation occurred.

Orphan viruses are a critical signal, suggesting gaps in population immunity, weaknesses in surveillance and undetected community transmission. The only geographic reference points are the location of the nearest ancestor and the site of the new orphan detection. Surveillance and immunity gaps may exist anywhere between these two points.

Each orphan poliovirus detection should trigger a structured, time-bound investigation designed to systematically identify surveillance and immunity gaps, assess potential undetected transmission, and recommend interventions to strengthen surveillance sensitivity and population immunity.

The objective of the investigation (or surveillance response) of an orphan poliovirus is threefold:

1. identify the area or population where circulation may have been missed,
2. intensify surveillance activities, and
3. strengthen coordination across all levels. Where necessary, this includes initiating sub regional or cross border collaboration to ensure a timely and effective response.

Areas of interest that should be considered for inclusion in the investigation:

- area where the virus was detected (area of the AFP case or catchment area of the ES site)
- neighbouring areas (including across border if applicable)
- areas with known movements to and from where the virus was detected
- any additional areas identified during the desk review and risk assessment

The following steps provide an overall approach to investigating an orphan virus and are further described below:

1. Immediate coordination and situation analysis.
2. Detailed field investigation.
3. Root cause analysis and corrective measures.
4. Documentation and follow up.

1. Immediate coordination and situation analysis

Establish an investigation team among staff from the national and relevant subnational surveillance teams, immunization teams, and the testing polio laboratories within 24 to 48 hours of laboratory confirmation. This coordination team will conduct a situation analysis to identify the area for intervention for strengthening surveillance and possible vaccination response.

1.1 Detailed case investigation

If the virus was detected in an AFP case or contact, conduct a detailed case investigation. If it was detected in an ES sample, describe and assess the catchment area of (‘drained’ by) the ES site.

1.2 Rapid desk review

Perform an epidemiologic and genetic analysis to include:

- verify the epidemiological details obtained to date;
- review and interpret the consolidated genetic sequencing analysis, including divergence from known poliovirus strains and identification of the closest relative;
- review and interpret any related poliovirus isolates detected nationally, regionally, or internationally to identify possible epidemiological links.

- review population immunity data including routine immunization and supplemental immunization activity (SIA) coverage, including historical data to assess birth cohorts that may be under- or unimmunized. Be sure to assess geographies and population subgroups with immunity gaps
- review the general profile of the areas under investigation, including populations residing in the area. This should include a review of detailed maps of the area; review of inaccessible areas for polio activities (and the reasons behind), population demography, population groups living in the area, population movement (including migration and cross border) and health seeking behaviour that may influence poliovirus transmission.

Assess the AFP surveillance system and quality overall in the country and more granularly in the area/population of concern.

- Assess AFP and environmental surveillance using key quality and process indicators (see **Annex 3. Indicators for AFP surveillance**). Review the surveillance network to ensure its geographic and demographic comprehensiveness and coverage. Pay particular attention to surveillance coverage in high risk and hard to reach geographies and populations.
- Perform an analysis of suspected missed polio cases, possible misclassification and over discarding of cases. For example, clusters of AFP cases, clusters of discarded cases with residual paralysis, and clusters of compatible cases that were discarded. These provide possible signals of where there may be gaps in surveillance and possibly missed transmission.
- Conduct a geographic and demographic analysis of surveillance and vaccination performance by area (e.g. accessibility, hard to reach) and population subgroups. This will help identify population subgroups that may be routinely missed by surveillance or vaccination.

1.3 Risk assessment

Using the information gathered from the rapid desk review and the detailed case investigation, conduct a risk assessment of the area where the virus was detected and of the “areas of interest”. The assessment should include findings from the surveillance performance review, population immunity, and population profile. After the review, the team will need to classify the risk of ongoing, undetected transmission as low, medium, or high risk to determine the depth and scope of subsequent field investigations.

2. Detailed field Investigation

Within two weeks of laboratory confirmation and building on the findings of the situation analysis:

- Deploy multidisciplinary teams to conduct field investigations in the area the orphan virus was detected and additional areas identified during the desk review and risk assessment. Note: If the area is inaccessible, engage a partner agency (local or international NGO) to conduct the investigation, even if only a partial investigation.
- Validate findings from the desk review on surveillance sensitivity by direct observation, local data, and community information.
- Engage and sensitize local authorities (administrative and health) to the situation and its associated risks for the community.
- Reinforce surveillance practices by sensitizing and retraining health workers and surveillance personnel at every point of contact to heighten surveillance sensitivity.
- Conduct a rapid active case search, if appropriate and feasible:
    - Communities in the area where the case was detected (which may/may not be location of residence): visit 10-20 households asking about any possible AFP case. Record the vaccination status of each child under the age of 5.
    - Health facilities: interview healthcare providers and conduct a retrospective records review (6 months) of the health registers. In addition, verify timeliness and completeness of routine surveillance weekly reporting in each heath facility visited.

- Interview informal healthcare providers, if available
- Compile and summarize the findings from the field investigation into a report.

3. Root cause analysis and corrective measures

- Review the findings from the field investigations to identify the underlying causes of surveillance and immunity gaps.
- Implement immediate corrective actions, which may include, but not are not limited to reviewing and updating the surveillance network to ensure coverage of high risk, marginalized, and hard to reach populations; conducting refresher training in areas where knowledge gaps were identified; and addressing delays in specimen collection and transport. See **Monitoring AFP surveillance** and **Annex 12. Special population groups** for more guidance on challenges and mitigation strategies.
- Coordinate with immunization colleagues to integrate findings into immunization planning if population immunity gaps are confirmed.
- Optimize environmental surveillance sites where feasible, based on investigation results.[18]

4. Documentation and Follow-Up

- Develop a concise investigation report within 30 days of orphan virus notification, summarizing findings, conclusions, and recommended actions.
- Disseminate the report to national, regional, and global surveillance teams, as appropriate.
- Establish a follow up mechanism to monitor and track the implementation of recommended actions.

The most likely scenario for orphan viruses involves a combination of gaps in surveillance and population immunity, particularly among population subgroups (e.g., ethnic groups, underserved population, mobile population, population living in inaccessible areas, etc). These gaps lead to continuous undetected transmission. However, additional considerations may apply in certain contexts:

- Areas with high IPV vaccination coverage: When the paralysis to infection ratio is low (<1:200), like in areas with high IPV coverage, AFP surveillance may not detect paralytic cases. In such settings, environmental surveillance may be more efficient in detective virus transmission.
- Areas with specific environmental factors: Poor sanitation, high population density, and high prevalence of enteroviruses can reduce vaccine efficacy (as demonstrated from serosurveys). Combined with weak surveillance, this may result in patchy detection and orphan virus emergence. This is a consideration if the polio vaccination coverage (OPV and IPV) is reportedly high.

6.4 – Monitoring laboratory timeliness

The GPLN routinely measures the timeliness of the laboratory testing with the following indicators for stool specimen processing and their targets (see also **Annex 3**. **Indicators for AFP Surveillance**).

- ≥80% of specimens with virus isolation results within 14 days of their receipt at a WHO-accredited laboratory.
- ≥80% of specimens with ITD results within 7 days of virus isolation results.
- Countries with full laboratory capacity: ≥80% of specimens with sequencing results from a WHO-accredited polio sequencing laboratory within 7 days of ITD results.
- Countries without full laboratory capacity: ≥80% of poliovirus specimens with sequencing results from a WHO-accredited polio sequencing laboratory within 7 days of receipt of the isolate.

The overall target and indicator for the timeliness of obtaining final laboratory results (interval from paralysis onset to specimen testing and result) is:

- ≥80% of WPVs and VDPVs final laboratory results reported within 35 days of AFP onset for countries with full laboratory capacity and within 46 days of AFP onset for countries without full

[18] Global Polio Eradication Initiative (GPEI). Field guidance for the implementation of environmental surveillance for polio (accessed 17 Dec 2025, Field Guidance for implementation of environmental surveillance for poliovirus).

laboratory capacity.

Note that both direct detection methods under assessment remove the virus isolation step. This could save 7-14 days in laboratory processing time for positive samples. However, the removal of the screening step (virus isolation) and the consequential increase in number of samples tested by ITD and/or sequenced may necessitate increasing the sequencing target from the current seven days.

7. 60-day follow-up investigation

7.1 - Determine which cases should undergo a 60-day follow-up examination

The hallmark of poliomyelitis is that most paralytic cases will not fully recover but will suffer permanent residual neurological sequelae, or residual paralysis. All surviving AFP cases should therefore be examined again for residual paralysis between the 60th and the 90th day after the onset of paralysis. The presence of residual paralysis at that time could be further evidence that the cause of paralysis was due to the poliovirus.

The 60-day follow-up examination is especially important for AFP cases with no stool specimen collected or inadequate specimens, for which reliable laboratory results may not be available. The presence of residual paralysis upon follow-up will be a key element for the National Polio Expert Committee (NPEC) to consider in their final case classification. The programme therefore strongly recommends that **all** AFP cases with **inadequate** specimens receive a 60-day follow-up examination.

When is a follow-up exam required?

Ideally, all AFP cases should undergo a 60-day follow-up examination. However, a follow-up exam is required for the following:

- AFP cases without stool specimen collection or for which only inadequate stool specimens could be collected; and
- AFP cases with isolation of vaccine-type (Sabin-type, nOPV-type) poliovirus.

Likewise, given the programmatic importance of vaccine viruses (e.g., Sabin, Sabin-like viruses, nOPV2, nOPV2-like viruses), the programme strongly recommends that **all** AFP cases with **vaccine-type (Sabin-type, nOPV2 type) poliovirus in their stool specimens** receive a 60-day follow-up examination. This facilitates a later possible diagnosis of vaccine-associated paralytic polio (VAPP).

In some WHO regions, such as the Region of the Americas and the Eastern Mediterranean Region, a 60-day follow-up examination is required for **all** AFP cases, irrespective of stool specimen's condition, as the exam provides valuable information to allocate a final diagnosis to those non-polio AFP cases.

7.2 – Conduct a 60-day follow-up examination

The result of the 60-day follow-up examination depends considerably on the experience and clinical skills of the person conducting the exam. This examination should ideally be conducted by a paediatrician experienced in examining children. Well-trained paediatricians will detect even small degrees of residual weakness which less trained health workers may not be able to find. It is also preferred to have it done by the physician/surveillance officer who initially examined the case.

A 60-day follow-up examination is conducted using both the original CIF and the 60-day follow-up examination form (**Annex 7. Examples of forms**). During the exam, the clinician or surveillance officer should systematically assess the patient.

60-day follow-up examination process

1. Verify with the family that all information on the previously documented CIF is correct.
2. Inquire if the paralysis or weakness has improved, has remained the same, or has progressed.
3. Observe how the child moves their limbs or affected areas of the body. Watch the child walk, or move arms, and look for signs of atrophy.
4. Examine muscle tone, power, and reflexes. Verify sensation.
5. Even mild residual weakness should be considered as 'residual paralysis.'

6. Complete the 60-day follow-up examination form and send it to the national polio eradication programme or the national Expanded Programme on Immunization (EPI).

8. Final AFP case classification

Once laboratory results have been received, all AFP cases undergo final case classification. The target is to classify all cases within 90 days of the onset of paralysis.

The final classification of cases with inadequate stools is done by the NPEC. Depending on the region, this committee may also be known as National Polio Expert Group, National Polio Expert Panel, or National Polio Expert Review Committee (with the acronyms NPEG or ERC). (See **Annex 17. Polio committees and commissions.**)

National Polio Expert Committee (NPEC)

The NPEC is an honorary, volunteer group of paediatricians, neurologists, virologists and epidemiologists that meets regularly and on an ad hoc basis, generally between once a month to four times a year. The committee's membership varies in size and composition. Its role is to:

- classify all AFP cases but, at a minimum, all AFP cases with inadequate stool specimens that have residual paralysis at 60-day follow-up, that have died or are lost to follow-up;
- review cases with suspected VAPP, which is assigned after excluding all possible diagnoses;
- provide technical advice pertaining to AFP cases and final diagnosis (if appropriate); and
- monitor the quality of the AFP surveillance system in general.

8.1 – Determine final AFP case classification

In reviewing all AFP cases, the NPEC provides final case classification (**Fig. 11**).

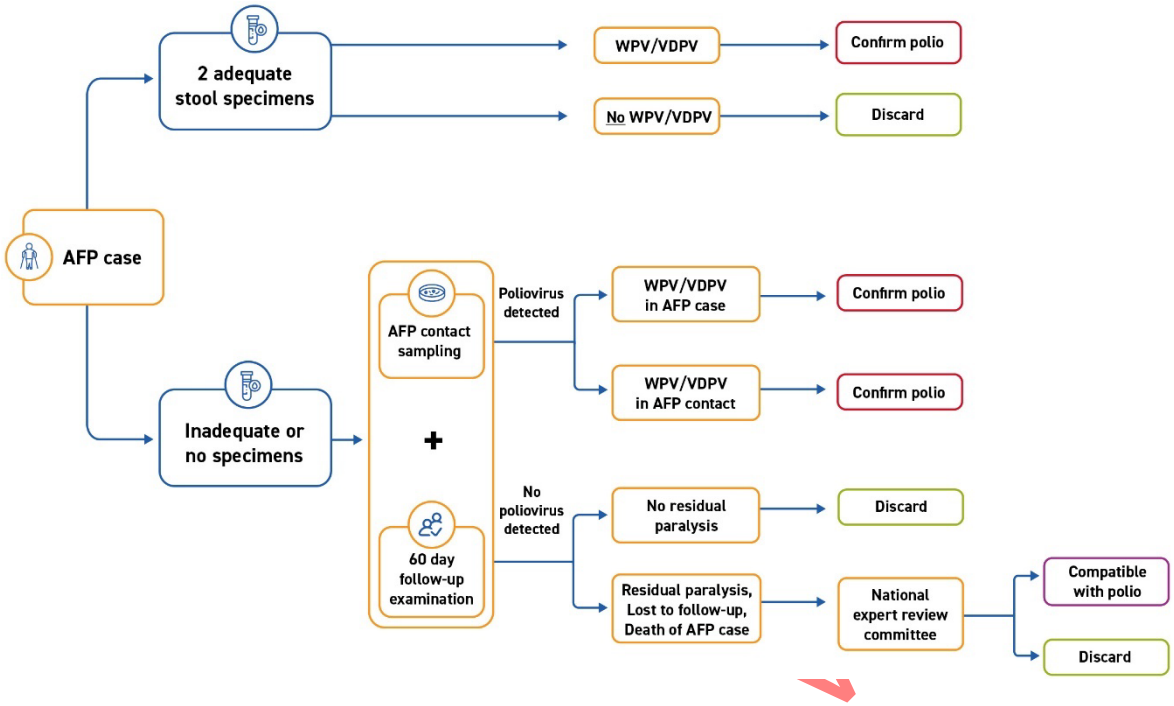
AFP cases with **adequate** specimens are either:

- *confirmed* as polio, if WPV or VDPV was detected in any stool specimens from either the case or contacts;
- *discarded* as non-polio AFP, if no WPV or VDPV was detected in adequate stool specimens from either the case or contacts.

AFP with **inadequate** specimens will be:

- *confirmed* as polio if WPV or VDPV was detected in any stool specimens from either the case or contacts;
- *compatible* if concluded by the NPEC after reviewing that (1) no WPV or VDPV was detected in any stool specimen from either the case or his/her contacts, and that (2) there is residual paralysis (or weakness) at the time of the 60-day follow-up visit, or that the follow-up was not done due to death or loss to follow-up of the case, and (3) upon review, the possibility of polio could not be ruled out;
- *discarded* as non-polio AFP, if no poliovirus was detected from the case or his/her contacts, and no residual paralysis was observed at the 60-day follow-up visit of the case, or if the NPEC concludes after reviewing that (1) no poliovirus was detected in any stool specimens from either the case or contacts, and that (2) even though there was residual paralysis, or the case was lost to follow-up, or had died, there was sufficient evidence (clinical evidence and supportive documentation) to discard the case as non-polio.

Fig. 11. Virologic AFP classification scheme



AFP = acute flaccid paralysis; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus
Source: WHO.

Non-polio and polio-compatible cases

For cases classified as non-polio AFP and for which no prior working diagnosis was given, the NPEC will be expected to assign a final diagnosis based on all information at its disposal, such as the initial investigation, the 60-day follow-up examination results, and other clinical evidence.

Polio-compatible cases can only be classified by the NPEC. Those cases are neither confirmed as polio nor discarded as non-polio. Such cases are important because they indicate a surveillance failure in any of the steps required to collect adequate specimens, from delays in the AFP case seeking health care to specimens received at a WHO-accredited polio laboratory in good condition. A cluster of polio compatible cases in a short period of time is worrisome as the programme cannot rule out polio as one of the reasons for this cluster of AFP cases. Regular mapping and review of polio-compatible cases will help to find areas with poor surveillance to address the underlying problem that has caused the late specimen collection.

8.2 – Further investigate, if needed

Certain critical situations require further investigation to supplement the initial case investigation and to gain a better understanding of the context and circumstance of the case or cluster of cases. This is important to uncover possible reasons for the occurrence and assess the risk of virus spread, if present.

Any one of the following situations warrants a prompt detailed case investigation:

- a single isolate of WPV in an AFP case, AFP contact, healthy child
- a single isolate of VDPV1, VDPV2 or VDPV3 in an AFP case, AFP contact, healthy child
- any SL2 or nOPV2-like poliovirus in an area with no recent vaccination campaign with type 2-containing vaccine;
- a clustering of AFP cases classified as polio-compatibles, i.e., usually defined as two or more cases in either a single district or two neighbouring districts within four weeks (refer to **Table 11b** in **Monitoring**);
- a clustering of AFP cases within a district or in neighbouring districts, i.e., at least twice the number of expected AFP cases reported within a month, in a limited geographical area (refer to **Table 11b** in **Monitoring**); and

- in some cases, a “hot” AFP case in advance of laboratory confirmation.[19]

The main elements to include in a detailed case investigation are in the Detailed Case Investigation Form or Report (**Annex 7. Examples of Forms**). The form compiles information on the case as well as information about the community (or catchment area).

The objectives of detailed investigations are to:

- define characteristics of the case(s), including demographics and socio-cultural aspects to better identify and address possible risk factors;
- identify possible origins or causes for the virus transmission or source of importation of poliovirus;
- assess the potential spread of the virus by looking for unreported cases in the area and the immunity/vaccination profile of the local community; and
- formulate control measures (immunization and surveillance) to interrupt the transmission and prevent spread or improve the ability to detect transmission.

Following the detailed case investigation of any polio event or outbreak, it is critical to assess and enhance poliovirus surveillance (see **Annex 18. Surveillance activities in outbreak settings**).[20]

[19] A “hot” AFP case is a case that looks clinically like polio (rapid progression of paralysis; asymmetrical paralysis; fever at onset) plus or minus any of the following criteria as defined by the country or region: less than five years of age; fewer than three doses of polio vaccine or unknown vaccination status, contact with infected area. See Table 11a in Monitoring for further information on “hot” cases.

[20] See the GPEI Resource Hub for the most current surveillance guidance on Strengthening Polio Surveillance during a Poliovirus Outbreak. https://polioeradication.org/resource-hub/?rh_tools=surveillance-resources&rh_policy_and_report_types=&rh_multimedia=&rh_sort= and outbreak response standard operating procedures https://polioeradication.org/resource-hub/?rh_tools=outbreak-preparedness-and-response (accessed 17 Dec 2025)

MONITORING AFP surveillance

1. Data management

Data that are complete, accurate and timely are key to monitoring progress toward eradication. For data to be of use, data collection and processing tools must be used correctly, and the data must be analysed on a regular basis and interpreted properly to produce information to support decision making.

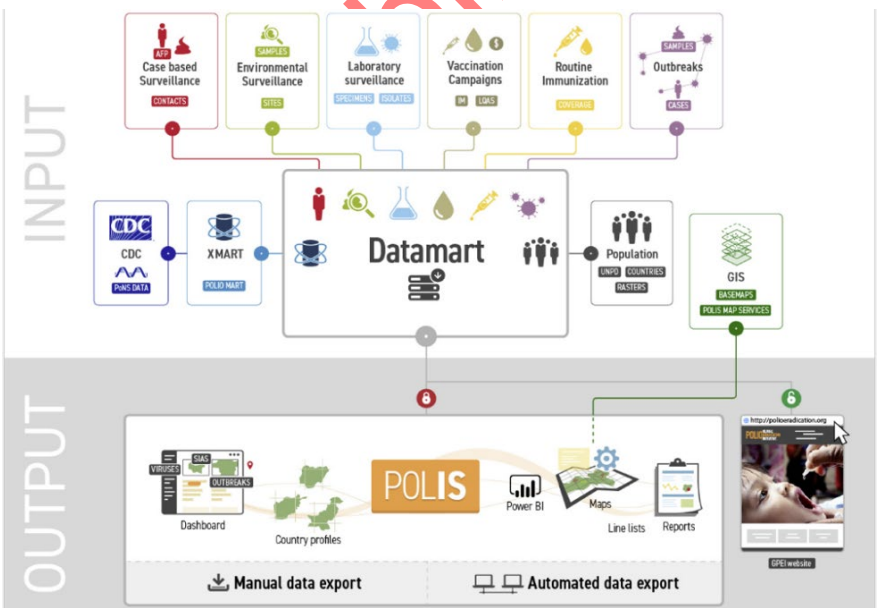
The programme gathers data for acute flaccid paralysis (AFP) surveillance from several sources.

- Case-based AFP data is collected through case investigation forms (CIFs) and 60-day follow-up examinations, compiled in a database and shared weekly with WHO regional offices and headquarters. It is also placed on an online platform, the Polio Information System (POLIS).
- Specimen-based data on AFP cases, case contacts and targeted healthy children stool specimens is gathered from the laboratory, compiled in databases and shared weekly with both WHO regional offices and headquarters. It is also placed on POLIS.
- Genetic sequencing results for poliovirus isolates also provide a source of data for AFP surveillance, some of which are placed on POLIS.
- Routine surveillance data ("zero-reporting") is collected from all reporting sites and compiled at the national level.
- Active surveillance (AS) data is collected from AS visits conducted by surveillance officers and should be compiled at the national level

1.1 – Polio Information System (POLIS)

Hosted at the WHO headquarters, POLIS consolidates, harmonizes, performs quality checks and analyses data from AFP surveillance, environmental surveillance (ES), supplemental immunization activities (SIAs), and laboratory testing.[21] POLIS thus offers a central repository that permits access to standardized data, reports and outputs by country programmes and partners (**Fig. 12**).

Fig. 12. POLIS visualization



AFP = acute flaccid paralysis; CDC = U.S. Centers for Disease Control and Prevention; GIS = geographic information systems; GPEI = Global Polio Eradication Initiative IM = intra-campaign monitoring; LQAS = lot quality assurance system; POLIS = polio information system; PONS = poliovirus nucleotide sequence (database); UNPD = United Nations Procurement Department; SIAs = supplementary immunization activity.

[21] POLIS can be accessed online at: https://extranet.who.int/polis/Help (log-in required).

Broadly, AFP surveillance data management is indispensable to support decision-making (**Table 8**). The role of data manager is to ensure that:

- AFP data is collected and shared in a timely manner;
- AFP data is complete and free of data entry errors (data quality checks);
- AFP data is accurate (e.g., logical chronology of dates); and
- AFP data is filed and archived properly.

Together with surveillance officers, data managers ensure that:

- accurate and up-to-date data is analysed, and information is presented clearly to best support data-driven decision making; and
- reports and feedback are complete and provided in a timely manner, particularly as they support monitoring surveillance performance.

Table 8. The uses of AFP surveillance data to programme decision-makers

Country context	Use of AFP surveillance data
All countries	• Calculate standard AFP surveillance quality and timeliness indicators • Focus corrective efforts on low-performing areas • Provide evidence on surveillance quality to national and regional certification bodies as the basis for regional and global polio-free certification
Endemic countries, outbreak areas	• Track WPV, VDPV circulation to inform immunization activities and monitor progress towards interrupting transmission

AFP = acute flaccid paralysis; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

1.2 – Mobile applications and mobile data collection

New technologies can help improve surveillance processes and data management. Such innovations have traditionally been used to improve timeliness in the collection, storage and dissemination of data and to improve monitoring and supervision activities. Innovation can also be used to locate populations and get a better understanding of the scope of the surveillance network.

The widespread use of mobile devices facilitates cleaner, faster and more reliable data capture and increases communication between surveillance officers and the healthcare network. Many successful innovations with mobile devices are currently in use across the polio programme (**Table 9**). Country programmes should consult with WHO regional offices to make sure certain data standards are met when using mobile application and ensure data can be captured in POLIS.

Table 9. Examples of successful polio programme innovations

Innovation	Definition	Benefits	Tool
E-surv Electronic surveillance	Real-time monitoring and reporting system on active surveillance (AS) visits.	• Registers time, location and record data on AS visits. • Tracks the coverage of AS visits	Mobile phone or tablet
ISS Integrated supportive supervision	Real-time monitoring and reporting system on supervisory visits for essential immunization, cold chain and vaccines, and incidence of VPDs.	• Registers time, location and record data on supervisory visits • Tracks coverage of supervisory visits • Displays trends across time and geographies	Mobile phone or tablet

AS = active surveillance; E-surv = electronic surveillance; ISS = integrated supportive supervision; VPD = vaccine-preventable disease

Table 9 (continued)

Innovation	Definition	Benefits	Tool
AVADAR Auto-Visual AFP Detection and Reporting* ***(retired system)***	Reporting and monitoring tool for CBS to enable community members (i.e., birth attendants, traditional healers, village healers) to detect and report AFP cases	• Reminder to look for AFP cases • Time and location of notification of "suspected AFP case" • Directs electronic notification of suspect AFP case to supervisor(s)	Mobile phone or tablet
Geo-localization	Mobile devices with global positioning system (GPS) receivers can allow geolocation of cases	• Allows exact localization of AFP cases or health facilities	Mobile phone or tablet
WebIFA Web Information for Action	Designed to collect and report surveillance data using a mobile device	• Centralized and harmonized data from field collection and laboratory reporting for AFP, environmental, and iVDPV surveillance • Improves data quality, streamlines workflow between surveillance teams	Mobile phone or tablet, computer
Barcode (optional)	QR code system to track samples from collection to testing	• Real-time tracking of samples • Avoids data entry errors • Linked to WebIFA for tracking and data verification	Mobile phone or tablets
WhatsApp	Chat groups	• Improves communication within surveillance teams, strengthens and connects teams • Supports direct information dissemination and issue resolution. • Motivates frontline surveillance efforts, provides training opportunities by taking and sharing pictures of their work.	Mobile phone

*Information on AVADAR is available online (https://www.ehealthafrica.org/avadar), as well as in Diallo M, Traore A, Nzioki MM et al. Auto Visual AFP Detection and Response (AVADAR) Improved Polio Surveillance in Lake Chad Polio Outbreak Priority Districts. J. Immunological. Sci. (2021); S (002): 73-85 (https://doi.org/10.29245/2578-3009/2021/S2.1101).
AFP = acute flaccid paralysis; CBS = community-based surveillance; GPS = global positioning system; iVDPV = immunodeficiency-associated vaccine-derived poliovirus; QR code = quick response code; WebIFA = web-based information-for-action system

1.3 – Geographic information system (GIS) mapping

GIS mapping and satellite imagery are also useful to identify and locate populations and catchment areas. GIS is now widely used by the programme for vaccination campaigns but also for surveillance to:

- map surveillance network and AFP cases to ensure that populations are covered by the surveillance network; and
- better understand population movements and where populations are located. This helps to understand the performance of the surveillance system (indicators) and areas where surveillance strategies need to be adapted (e.g., hard-to-reach populations).

The wider deployment and use of GIS mapping and satellite imagery is encouraged (where feasible), including to capture the GPS coordinates of where AFP cases reside, health facilities, and reporting sites to better visualize catchment areas.

2. Monitoring

Monitoring should be conducted on a regular basis and should highlight both trends and anomalies in the performance and quality of surveillance.

2.1 – Collect, analyse, and use data

Data should be consolidated and analysed at district, provincial and national levels to assess the sensitivity, timeliness and quality of surveillance. All data should be updated promptly in the event of an error. Data should also be updated after laboratory results are received and once a final case classification is assigned.

Monitoring should be done:

- for case- and specimen-level data (line listing) ⇨ monitor the quality of case investigations (including completeness of forms) and ensure accurate and up-to-date case- and specimen-based data is available to perform analyses;
- for site visits, including AS and supervisory ⇨ monitor completeness and timeliness of AS and supervisory visits and related data; and
- for reports, including AS and zero-reporting ⇨ monitor completeness of data and timeliness.

Data should be disaggregated by space and time:

- within and/or across geographies: local, district, province, national; and
- over time: by month, by quarter, semi-annually, yearly.

Data should also be stratified, where possible and whenever a more descriptive analysis is required:

- by sex (e.g., “number of unreported AFP cases by sex identified during AS visits”);
- by special population group (e.g., “number of AFP cases reported by category of special population”); and
- by health-seeking behaviour (e.g., “number of AFP cases with ≤2 health encounters between onset and notification / number of AFP cases (stratify by sex)”).

Routine analyses include the following set of reports and products:

- graph of confirmed polio cases by year (indicates progress made towards eradicating polio);
- graph of confirmed polio cases by month (indicates the seasonality of high and low polio transmission and is useful for planning SIAs);
- dot map of confirmed polio cases (shows where poliovirus is circulating and high-risk areas to be targeted with special strategies);
- dot map of AFP cases and compatible cases (identifies possible areas of low performance);
- table showing the key indicators by the first administrative level (see **Annex 3. Indicators for AFP surveillance**);
- disaggregation of indicators by sex and by special population/high-risk groups or areas (helps pinpoint possible reasons for suboptimal performance or gaps in surveillance and can direct to possible solutions); and
- graph of OPV/IPV status of non-polio AFP cases aged 6-59 months (indicates if immunization efforts should be intensified and areas of possible risk of virus emergence and/or spread).

AFP surveillance indicators

Performance indicators are used to monitor the quality of disease surveillance and laboratory performance. For a comprehensive list, see **Annex 3. Indicators for AFP surveillance**.

Two indicators remain the gold standard to assess overall AFP surveillance quality:

- ✓ non-polio AFP rate, and
- ✓ stool adequacy.

Indicators for the timeliness of activities are of particular importance as the programme has established operational targets to expedite the speed of virus detection to quickly trigger response efforts to interrupt transmission (**Table 10**). Delays in detection can happen at any stage of field, logistic, and laboratory activities. Countries must monitor timeliness at every stage of the process. **Annex 16** provides insight into causes of delays and ways the programme can address them.

Table 10. AFP surveillance indicators related to timeliness (refer to Annex 3)

Timeliness of	Indicator
Detection	% of AFP cases with WPV/VDPV final laboratory results ≤ 35 days of paralysis onset for countries with full laboratory capacity *(the target is ≤ 46 days for countries without full laboratory capacity)*
Notification	% of AFP cases reported within 7 days of paralysis onset
Investigation	% of AFP cases investigated within 48 hours of notification
Stool collection	% of AFP cases with 2 samples collected ≥ 24 hours, both within 11 days of paralysis onset

AFP = acute flaccid paralysis; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

Translating findings from analyses into action

Both data managers and surveillance officers should monitor and analyse AFP data routinely and go *beyond the regular indicators* to identify issues that may point to gaps in surveillance and allow the early detection of outbreaks. Issues may include anomalies, such as a sudden drop in performance or an increase in the number of AFP cases reported, or unusual trends or patterns, such as repeated, periodical drops in the timeliness of reporting (**Tables 11a** and **11b**). **Annex 3** lists all recommended and topic-specific indicators to monitor, which provides an additional means of looking at available data *beyond the regular indicators*.

Table 11a. Poliovirus and performance triggers for responding to AFP surveillance data

Situation	Description	What to do
Underperforming areas	Areas that record low performance in key indicators such as NPAFP rates or stool adequacy (or experience a sudden increase in the number of AFP cases reported); areas whose performance intermittently falls below expectations such as repeated drops in timeliness of reporting.	• Follow-up by visits, telephone, e-mail to identify reasons for the performance issue. • Address any problems immediately (e.g., re-training, lack of resource)
Silent areas	The definition of "silent" is country-specific and usually refers to an administrative level that should have but did not report at least one AFP case (based on time and under 15-year-old population). That is, an area (usually a district) that did not report a single AFP case in a period from 6–12 months or more, depending on the population size and expected number of AFP cases based on the targeted NPAFP rate (e.g., high-risk, endemic, outbreak country).	• Issue an alert or other communication to the district team that highlights the potential gap • Review surveillance performance and process (including AS) and conduct sensitization activities • Conduct full surveillance review (if required) • Trigger an ad hoc AFP case search in health facilities
Data "too good to be true"	Indicators that show unusually and unexpectedly high performance, e.g., close to 100% of AFP cases have 2 stools collected ≤14 days of paralysis onset. Possible reasons include cases detected more than 14 days after onset are not being reported or the reporting date is being changed to ≤14 days after onset.	• Check for manual errors or issues with data manipulation or migration. • Seek confirmation with the data manager (and surveillance officer) who collected and entered the data • Review CIFs and proceed to field validation of cases/questionable CIFs.

AFP = acute flaccid paralysis; AS = active surveillance; NPAFP = non-polio AFP

Table 11a. (continued)

Situation	Description	What to do
"Hot" cases	AFP cases that clinically looks like polio by meeting all three signs of poliomyelitis: rapid progression of paralysis; asymmetrical paralysis; and fever at onset. Additional criteria, as defined by the country or region depending on epidemiology, may include less than five years of age; fewer than three doses of polio containing vaccine or have an unknown vaccination status; cluster of AFP cases (see next table); or contact with areas/groups with recent virus circulation. The identification of a "hot case" must trigger the fast-tracking of specimen testing by the laboratory.	• Ensure the stool specimens reach the laboratory as quickly as possible, and priority is given for testing. • Prioritize field investigation • Check for possible clustering of (other) "hot cases." In the event of a cluster, follow instructions for clustering (see table below).
Over-discarding cases and "potential compatible" cases	AFP cases that may be considered as "potentially polio compatible" have inadequate stools specimens and either a) have a 60-day follow-up finding as residual paralysis or "lost to follow-up" or "died before follow-up", or b) have not received any 60-day follow-up visit and have not been classified or have been "discarded" by the NPEC. The existence of such cases may flag an "over-discarding" of cases by the NPEC, which rejected these cases as "non-polio" when there was potentially a justification to classify them as "polio compatible." A clustering in time and space of such cases is of concern (i.e., cases with inadequate specimens, residual paralysis that were discarded) and should be investigated promptly.	• Check for possible clustering of (other) "potentially compatible" cases (using the AFP line list). In the event of a cluster, follow instructions for clustering (see table below). • Consider having the NPEC members re-oriented.

AFP = acute flaccid paralysis; CIF = case investigation form; NPEC = National Polio Expert Committee

Table 11b. Cluster-specific triggers for responding to AFP surveillance data

Description of clusters	What to do
The detection of at least twice the number of expected AFP cases occurring in a district (or province in small countries) within a one-to-two-month period. Look out for clusters of polio-compatible cases, "hot" cases, "potential compatible" cases, or "zero-dose" cases. Possible reasons for clusters: • new importation or emergence of poliovirus • increased sensitization or search for AFP cases	Cluster investigations are similar to polio outbreak investigations. It includes: • Detailed case investigation: validating information, dates, doses, further details on movement, visitors, links with other cases. • Looking for more cases. • Active case search in community and health facilities. • Raise awareness through meeting and interpersonal communication. • Assess surveillance performance, identify possible gaps, take corrective action. • Ensure that all the high-risk groups are included in surveillance and that their health-seeking behaviour is taken into consideration. • Assess the risk for virus emergence or importation as well as possible spread and its direction: review of immunization activities and coverage which is in favour of possible VDPV emergence/WPV1 importation, investigating the sociocultural characteristics of the area, population density and population movement in and out of the area. • It is important to flag specimens of hot cases and their contacts for fast tracking in the laboratory and continue sensitization and enhancement of surveillance activities in the district and connected areas.

AFP = acute flaccid paralysis; NPAFP = non-polio AFP; VDPV = vaccine-derived poliovirus; WPV1 = wild poliovirus type 1

2.2 – Report on progress and provide feedback

Progress reports: Weekly, monthly and/or quarterly reports on AFP surveillance sensitivity and quality are critical to maintaining effective surveillance and keeping health staff and concerned parties (both local and international) engaged.

A **monthly polio surveillance report** (or a polio update in an integrated surveillance report) should be produced at the national level and shared with the entire surveillance network, including programme partners at the regional and global-level and reporting sites.

Similarly, periodic progress reports to local, regional, and global actors, as well as the media, are needed to maintain awareness of polio and a commitment to the wider goal of eradication.

Feedback: Providing written feedback within a week of receiving reports and conducting supervisory visits is crucial to address identified gaps in surveillance, some of which can be due to insufficient training or dwindling motivation. If no issues are noted, supervisors should provide feedback in the form of acknowledging receipt of the report with thanks.

Furthermore, providing feedback information to all designated reporting sites is needed to:

- report progress and problems;
- compare performance across the country;
- facilitate discussions on inaccuracies in data, surveillance gaps, and ways to close gaps;
- encourage complete, timely reporting and inform concerned parties of programme progress;
- engage their continued support on eradication efforts by directly seeing their contributions; and
- motivate health staff.

3. Evaluation

Evaluations can take the form of audits and desk or field reviews. For outbreak-affected countries, outbreak response assessments (OBRAs) are also conducted.

3.1 – Conduct audits

All countries benefit from internal annual audits of their AFP surveillance system to assess, identify and respond to subnational performance gaps. The findings of an audit are particularly useful for annual surveillance planning.

Audits involve carrying out detailed analyses on data that has been disaggregated by high-risk status, sex and health-seeking behaviour. They also explore context-specific risk factors, such as special populations or hard-to-reach geographies. Audits should include all components of the AFP surveillance system including routine surveillance, AS visits and coverage, CBS, special strategies that have been implemented, staffing, funding, etc. Audits assess the quality of the data (e.g., timeliness, completeness, accuracy) and triangulate the data with other data sources to obtain a more accurate picture of the overall surveillance system. Performance and process indicators need to be included in an audit, as well as gender analyses to ensure implementation of a surveillance system that is responsive to gender needs. Additionally, the surveillance workplan should be assessed with programme operations to ensure necessary resources (e.g., staffing, funding, logistics) are available. Findings should be used to advocate for more resources and to prioritize activities within the workplan. Audits are typically performed internally by the national team and may be a stand-alone exercise or a component of a desk and/or field assessments.

3.2 – Conduct desk and field surveillance reviews

Periodic evaluations of AFP surveillance systems are done through desk reviews, often followed by field reviews.

- **Desk reviews** thoroughly review all existing surveillance data and analyse indicators to assess overall AFP surveillance performance. Desk reviews provide an overview of surveillance sensitivity

over a defined period, usually three years, and aim to highlight possible gaps. These reviews can be done at the office (i.e., at a “desk”) unlike field reviews that involve site visits.

- **Field reviews** build upon desk reviews by targeting a set of provinces or districts for visits to better understand findings from the desk review. Field reviews are conducted by a team of peer (internal) reviewers or a mix of internal and external (international) reviewers to assess the performance of the surveillance system and the quality of the surveillance network.

Recommendations from desk and field reviews are translated into a surveillance plan to either maintain the level achieved or to strengthen where gaps were identified. Depending on the purpose and scope of these reviews, special attention may be paid to high-risk, access-compromised and hard-to-reach areas and populations as these areas and populations require special strategies and added resources, which should be the object of periodical assessments.

3.3 – Conduct outbreak response assessments (OBRAs)

Poliovirus surveillance quality is a key component of outbreak response assessments (OBRAs), conducted by the GPEI for all polio outbreaks.[22] OBRAs assess whether vaccination and surveillance activities are robust enough to detect and stop poliovirus transmission. They also identify further activities to address remaining gaps and interrupt transmission of the outbreak virus.

OBRAs are conducted regularly throughout an outbreak until an OBRA mission declares the outbreak to be over. Closure of the outbreak can only be done if there is evidence of high-quality surveillance sensitivity.[23]

[22] Aide memoire, version 5 – 2025 - Poliovirus Outbreak Response Assessment, (accessed 17 Dec 2025, Polio-Outbreak-Response-Assessment-Aide-Memoire-version-5-20251111.pdf)
[23] For outbreak related resources, see:
GPEI outbreak page (accessed 17 Dec 2025, https://polioeradication.org/polio-today/outbreaks/)
Standard operating procedures: responding to a poliovirus event or outbreak, version 4; Geneva: World Health Organization; 2022; (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2024/05/9789240049154-eng.pdf), Revisions in progress.

SUSTAINING AFP surveillance

1. Building a skilled workforce

To ensure that all AFP surveillance stakeholders have up-to-date technical, interpersonal and gender-mindful skills, human resources administrators should work together with surveillance supervisors and managers to select, train, support and retain an effective and motivated gender balanced surveillance workforce. Within the reporting sector, the healthcare provider or informer plays a critical role as the first point of contact between the AFP case and the public health system and therefore it is vital that they are also well trained and supported to detect and report the AFP case to the surveillance system.

1. Selection: The selection of surveillance officers, supervisors, active and routine surveillance focal points and community-based surveillance (CBS) informants should be based on a candidate's ability to perform the role and their potential for development. Gender balance and appropriateness to culture and norms should be prioritized and upheld for all roles (see **Annex 10. Gender and polio surveillance**).

2. Capacity building: While capacity building is a larger function that represents a shared responsibility between managers and staff, it is fundamentally rooted in training. All surveillance staff should be equipped with an initial training and advanced formal trainings, offered either in-person or virtually, at least every two years and with regular refresher trainings, preferably with certificates that reference a validity period, such as an annual certification.

3. Maintaining performance: Managers should follow through on training and capacity building to make sure field staff are supported in their roles, so their skills are applied and further developed.

- **Effective supportive supervision**: AFP surveillance activities must be monitored and supervised to ensure the system remains highly sensitive. Such continuous supervision should follow a predefined plan, using checklists for staff performance and including staff feedback and follow-up on potential corrective actions. Regular on-the-job supportive supervision visits for provincial and district surveillance teams should focus not on fault-finding, but on sensitization, training, problem-solving and two-way communication. Structured tools should be used to cover activities and present findings. Visits should review different surveillance components such as a surveillance plan, regularly updated reporting network, an updated list of active surveillance sites, prioritization criteria, site visit schedule, and site visit procedures. Evaluating supervision is equally important and should be made from the national to the province or state level, and from the province/state level to the district level.

Six signs of effective supportive supervision

1. Surveillance officers have the appropriate technical knowledge and skills to conduct surveillance activities.
2. Surveillance officers are – and feel – supported in their job.
3. Feedback is provided to surveillance officers.
4. Reporting procedures for cases are correctly followed.
5. Cases are investigated in a thorough and timely manner.
6. Active surveillance visits are of high quality.

- **One-on-one mentoring** helps to build field staff capacity and confidence. As part of their mentoring and monitoring roles, managers should regularly conduct active surveillance visits and case investigations with field staff, where they can provide on-the-job demonstration and real-life examples. Ad hoc mentoring opportunities should also be offered, based on needs.
- Managers should hold **review meetings** – both regular group review meetings (ideally quarterly) and one-on-one personal reviews – to discuss performance, provide updates, and set objectives and goals.

4. Staff retention: Retention among staff is bolstered when managers prioritize supportive supervision, reward and recognize good performers, advocate for career development, add motivational inputs during meetings (focusing on contribution to the "big picture"), and sometimes involve celebrities and well-known figures to elevate the public perception of the programme.

Staff retention is also dependent on managers and supervisors being sensitive and responsive to gender-related issues. Supervisors and managers must ensure that a gender lens is applied to the programme both by promoting gender equality and addressing any gender-related barriers or other factors that may impact the staff safety and performance as well as their career advancement. For more details, see **Annex 10. Gender and polio surveillance.**

Ways to improve supportive supervision

- Include regular (monthly or at least quarterly) supervisory visits in workplans and plan for them as a recurring, funded cost.
- Arrange observations in the field by accompanying staff on a visit to a high-priority large hospital.
- Structure visits by sharing objectives, following up on previous recommendations, and preparing updates or refresher trainings.
- Identify gaps and solve problems, making sure to give positive feedback in public and performance tips in private conversation.
- Openly discuss findings and recommendations.

Not all staff tasked with supervision are trained on supportive supervision. Country teams should include a supervisor training that details the role and responsibilities of supervisors. Up-to-date training modules that cover all aspects of polio surveillance are available online and aligned with the current guidelines. ***Download AFP surveillance training modules*** *(requires POLIS access).*

2. Integrating disease surveillance, the future of polio surveillance

As the world prepares for polio eradication, the WHO and other GPEI partners are actively working to transition the polio programme to ensure key assets and capacities, including surveillance, are successfully integrated into other programmes. It is imperative that polio surveillance continues beyond global WPV eradication and OPV cessation. Successful integration in national surveillance systems will sustain polio surveillance and also strengthen other surveillance programmes by building on the polio platform where it proves beneficial.[24]

Table 12 lists specific deliverables of a well-functioning AFP surveillance system that must be maintained, as well as potential steps that can be taken to ensure integration of AFP surveillance with other programmes. These activities are foundational of AFP surveillance and must continue to support broader, comprehensive VPD surveillance efforts, including outbreak-prone disease and syndromes.

[24] WHO Global strategy for comprehensive Vaccine-Preventable Disease (VPD) surveillance. Geneva: World Health Organization; 2020 (accessed 17 Dec 2025, https://www.who.int/publications/m/item/global-strategy-for-comprehensive-vaccine-preventable-disease-(vpd)-surveillance).

Table 12. Components of AFP surveillance that should be addressed by integration efforts

Specific deliverables of a well-functioning AFP surveillance	• Weekly reporting from health facilities including "zero-reporting." Where necessary, regular reporting from informal health service providers • Active surveillance including physical visits of priority health facilities and informal service providers • Community-based surveillance in selected areas • Active case search, if triggered by events • Investigation of ALL AFP cases including collection of stool samples and 60-day follow-up examinations; AFP contact sampling, if indicated • Testing of all stool samples at a WHO-accredited polio testing laboratory • Meet surveillance standards at national and subnational levels
Steps that can be taken to support integration at the country level	• One comprehensive surveillance operational workplan at country-level • Core team of trained human resources at the national and subnational level • Harmonized data collection tools and data management infrastructure • Integrated stool specimen shipment into an established transport system (disease surveillance program or pharmaceuticals network) • Integrated active surveillance visits and integrated supportive supervision visits. • Integrated community-based surveillance.

AFP = acute flaccid paralysis; WHO = World Health Organization

Resources to support integration and transition efforts

As the GPEI approaches certification, new guidance related to planning for the post-certification era will be needed to address the latest challenges to eradication including surveillance. All stakeholders of the polio eradication effort are encouraged to consult the resources below.

- Consult the GPEI website for the latest information: polioeradication.org.
- GPEI dedicated webpage on integration: https://polioeradication.org/what-we-do-2/integration/
- GPEI dedicated webpage on transition planning: https://polioeradication.org/who-we-are/transition-planning/
- To support post-certification planning, the GPEI has updated the Polio Post-Certification Strategy (2018), now referred to as Sustaining Polio-free world.[25] A draft version is available online and consult the GPEI website for the finalized document: https://polioeradication.org/who-we-are/transition-planning/polio-post-certification-strategy/.

Annex guidance

Annex 19 provides further resources for GPEI programme information, as well as dedicated resources for AFP surveillance, community-based surveillance, poliovirus laboratory testing, gender training and surveillance for integrated VPD platforms.

[25] Global Polio Eradication Initiative Sustaining a Polio-free World: a strategy for long-term success (Draft v3.5) Geneva: World Health Organization; 2025 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2025/12/Sustaining-a-Polio-free-World-Draft-v3.5-20251212.pdf). Pending finalization.

ANNEXES

Annex 1. Poliovirus

Poliovirus is a member of the enterovirus subgroup of the family *Picornaviridae*. Enteroviruses are transient inhabitants of the gastrointestinal tract and are stable at an acidic pH. *Picornaviruses* are small, ether-insensitive viruses with a ribonucleic acid (RNA) genome. Heat, formaldehyde, chlorine and ultraviolet (UV) light rapidly inactivate the poliovirus.

Poliovirus has three serotypes: type 1, type 2 and type 3. All three serotypes of poliovirus cause paralytic disease.

Epidemiology

Reservoir

Humans are the only known reservoir of poliovirus, which is transmitted most frequently by persons with inapparent infection. There is no asymptomatic carrier state except in immune-deficient persons.

Transmission and temporal pattern

Poliovirus is spread by both the faecal-oral route (i.e., the poliovirus multiplies in the intestines and is spread through the faeces) and by the respiratory route. Infection is more common in infants and young children. Polio occurs at an earlier age among children living in poor hygienic conditions. In temperate climates, poliovirus infections are most common during summer and autumn. In tropical areas, the seasonal pattern is less pronounced.

The time between infection and onset of paralysis is 7–21 days. The virus spreads rapidly to non-immune persons and transmission is usually widespread by the time of paralysis onset. The virus is intermittently excreted for one month or more after infection. The heaviest faecal excretion of the virus occurs just prior to the onset of paralysis and during the first two weeks after paralysis onset.

Communicability

Poliovirus is highly infectious with seroconversion rates in susceptible household contacts of children nearly 100% and of adults over 90%. Individuals are most infectious 3-4 days before the symptoms appear to about 10 days after onset of symptoms. Faecal shedding of infectious viruses continues for an average of three weeks.

Immunity

Protective immunity against poliovirus infection develops by immunization or natural infection. Immunity to one poliovirus type does not protect against infection with other poliovirus types. Immunity following natural infection or administration of a live oral poliovirus vaccine (OPV) is believed to be lifelong. The duration of protective antibodies after administration of an inactivated poliovirus vaccine (IPV) is unknown but likely lifelong after a complete series.[26] Infants born to mothers with high antibody levels against poliovirus are protected for the first several weeks of life.

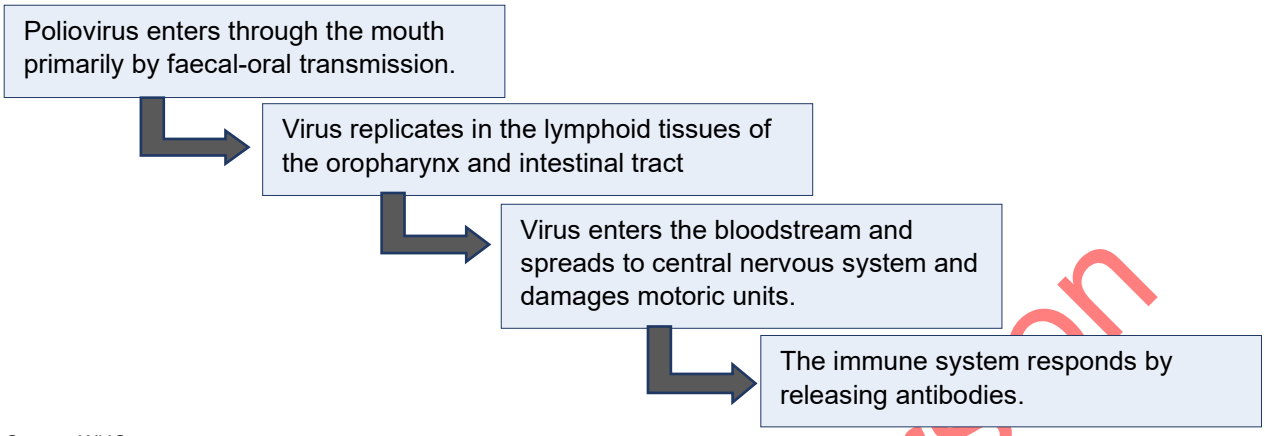
Pathogenesis

The virus enters the body through the mouth from faecal-oral contact, saliva, or respiratory droplets. Primary multiplication of the virus occurs at the site of implantation of the poliovirus receptor in tissues: tonsils, intestinal cells, gut or ‘Peyer’s patches’ that line the small intestine, and lymph nodes. The virus is usually present in the throat and in the stools before the onset of illness. One week after onset, there is little virus in the throat, but virus continues to be excreted in the stools for several weeks. The virus invades local lymphoid tissue, enters the blood stream, and then rarely may infect cells of the central nervous system. The virus has “tropism” for nerve tissue and is thought to spread back along nerves (“axons”) to the spinal cord. Replication of poliovirus in motor neurons of the anterior horn and brain

[26] Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Hall E, Wodi AP, Hamborsky J, et al., eds. 14th ed. Chapter 18: Poliomyelitis. Washington, D.C.: Public Health Foundation; 2021 (accessed 17 Dec 2025, https://www.cdc.gov/pinkbook/hcp/table-of-contents/chapter-18-poliomyelitis.html#cdc_report_pub_study_section_8-poliovirus-vaccines).

stem results in cell destruction and causes the typical manifestation of paralytic poliomyelitis. Paralysis extent depends on proportion of motor neurons lost. See **Fig. A1.1**.

Fig. A1.1. Pathogenesis of poliomyelitis



Source: WHO.

Clinical manifestations of infection (symptoms)

The incubation period of non-paralytic poliomyelitis is 3–6 days. For the onset of paralysis in paralytic poliomyelitis, the incubation period is usually 7–21 days (with a range from 3–35 days).

Infection with poliovirus results in a spectrum of clinical manifestations from inapparent infection to non-specific febrile illness, aseptic meningitis, paralytic disease and death. Poliovirus infection is not apparent in 90–95% of infected individuals.

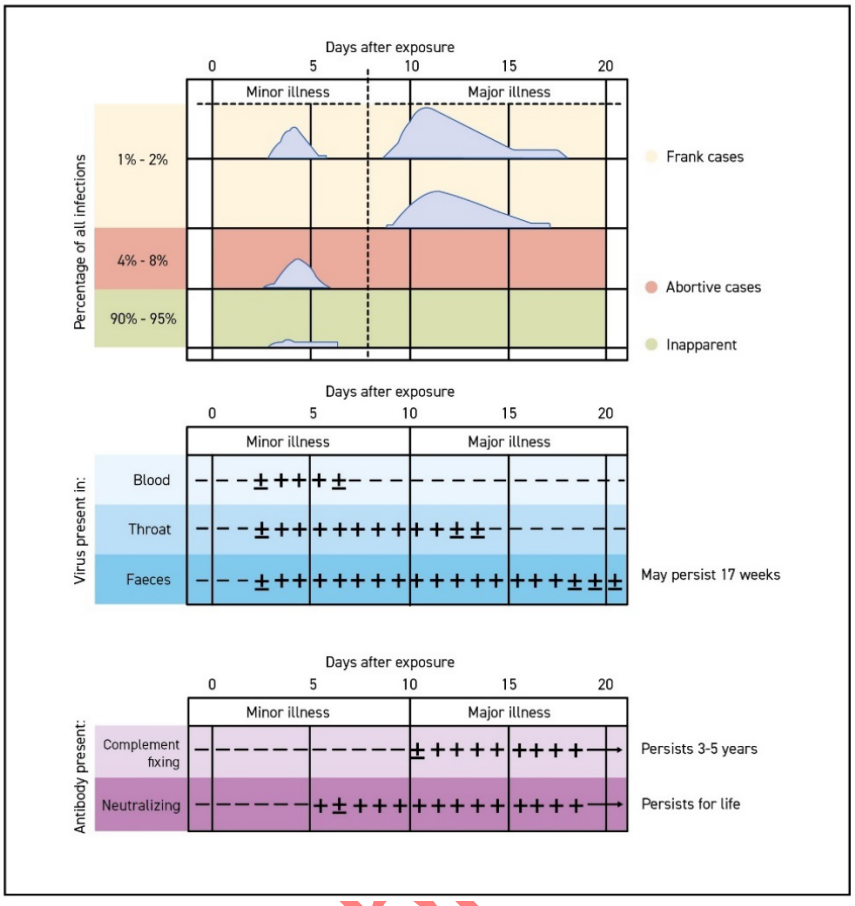
The following clinical pictures may present the disease (**Fig A1.2**):

- **Abortive polio** follows infection by a poliovirus and occurs as a non-specific febrile illness in 4–8% of cases characterized by low-grade fever, sore throat, vomiting, abdominal pain, loss of appetite and malaise. Recovery is rapid and complete with no paralysis. Clinically, it cannot usually be distinguished from other mild viral illnesses with mild respiratory tract or gastrointestinal manifestations. Only laboratory testing can confirm or negate the poliovirus infection.
- **Non-paralytic aseptic meningitis** occurs in 1–2% of infections with symptoms of headache, neck, back, abdominal, and/or extremity pain, fever, vomiting, lethargy and irritability after a prodromal illness like abortive polio. Cases recover within 2–10 days. It cannot be clinically distinguished from other causes of aseptic meningitis. Only laboratory testing can confirm or negate poliovirus infection.
- **Paralytic poliomyelitis** occurs in <1% of cases following a minor illness, sometimes separated by several days without symptoms (biphasic). Paralytic symptoms generally begin 1–10 days after prodromal symptoms and progress for 2–3 days. It begins with muscle pain, spasms and return of fever, followed by rapid onset of flaccid paralysis with diminished deep tendon reflexes that is usually complete within 72 hours**.** Patients do not experience sensory loss or changes in cognition. Only laboratory testing can confirm or negate poliovirus infection.

Depending on the site(s) of paralysis, poliomyelitis can be classified as spinal, bulbar or spino-bulbar disease. Classically, certain groups of muscles are affected in an asymmetrical pattern**.** The lower limbs are affected more often than the upper limbs, and one leg or one part of the leg may be involved. The affected muscles are weak and floppy (flaccid). In a very small number of cases the virus also attacks the motor nerve cells that control the muscles of the face, throat, and tongue, and muscles of respiration. The ability to swallow, speak and breathe becomes affected. This is known as bulbar polio and may be fatal. Of paralytic polio cases, 2–10% are fatal due to affection of respiratory muscles, 10% recover completely, and the remainder of cases show some residual paralysis or permanent disability.

Prognosis for recovery can usually be established within six (6) months after onset of paralytic manifestations.

Fig. A1.2. Phases of occurrence of symptoms in poliomyelitis Infection



Source: WHO. Field guide for supplementary activities aimed at achieving polio eradication, Rev. 1996. Geneva: World Health Organization; 1996;4 (accessed 17 Dec 2025, https://apps.who.int/iris/bitstream/handle/10665/63478/WHO_EPI_GEN_95.01_REV.1.pdf).

Prevention

Polio vaccines provide the best protection against polio.

Poliovirus vaccines

The Global Polio Eradication Initiative (GPEI) maintains descriptions of polio vaccines.[27]

1. Oral poliovirus vaccines (OPVs)

OPVs are the predominant vaccine used in the fight to eradicate polio (**Table A1.1**). The attenuated poliovirus(es) contained in OPV can replicate effectively in the intestine, but it is around 10 000 times less able to enter the central nervous system than the wild virus. This enables individuals to mount an immune response against the virus. Virtually all countries which have eradicated polio used OPV to interrupt virus transmission.

Advantages

- OPVs are safe, effective and inexpensive, and their oral administration does not require health professionals.

[27] Global Polio Eradication Initiative. Oral polio vaccine (webpage). (accessed 17 Dec 2025, https://polioeradication.org/about-polio/the-vaccines/opv/). Inactivated poliovirus vaccine (webpage) (accessed 17 Dec 2025, https://polioeradication.org/about-polio/the-vaccines/ipv/)

- For several weeks after vaccination, the vaccine virus replicates in the intestine, is excreted and can be spread to others in close contact. In areas with poor hygiene and sanitation, immunization with OPV can therefore result in "passive" immunization of people who have not been vaccinated.

Disadvantages

- OPV is safe and effective. However, in extremely rare cases (at a rate of approximately 2–4 events per 1 million births), the live attenuated vaccine virus in OPV can cause paralysis.[28] In some cases, it may be triggered by an immunodeficiency. The extremely low risk of vaccine-associated paralytic poliomyelitis (VAPP) is well accepted by most public health programmes.
- Very rarely, when there is insufficient immunization coverage in a community, the vaccine virus may be able to circulate, mutate and, over the course of 12 to 18 months, reacquire neurovirulence. This is known as a circulating vaccine-derived poliovirus (cVDPV).

Once polio has been eradicated, all OPV use will be stopped to prevent re-establishment of transmission due to vaccine-derived polioviruses (VDPVs).

Table A1.1. Use for OPVs by serotype

OPV type	Serotype	Use
Monovalent oral poliovirus vaccines (mOPVs)	Type 1 (mOPV1) Type 2 (mOPV2) Type 3 (mOPV3)	Elicits the best immune response against the targeted serotype. mOPV2 has been replaced by nOPV2.
Novel oral polio vaccine type (nOPV)	Type 2 (nOPV2)	Provides comparable protection against poliovirus as mOPV2 while being more genetically stable, therefore making it less likely to be associated with the emergence of VDPV2 in low-immunity settings. nOPV2 is the vaccine of choice to respond to cVDPV2 outbreaks.
Bivalent oral poliovirus vaccine (bOPV)	Type 1 and type 3 (bOPV)	Contains attenuated virus of serotypes 1 and 3. bOPV elicits a better immune response against poliovirus types 1 and 3 than tOPV, but it does not give immunity against serotype 2. Since April 2016, the trivalent oral poliovirus vaccine (tOPV) has been replaced with bOPV in essential immunization programmes and for outbreak response against types 1 and 3 outbreaks.
Trivalent oral poliovirus vaccine (tOPV)	Type 1, type 2 and type 3 (tOPV)	Withdrawn in April 2016 from essential immunization programmes and replaced with bOPV. tOPV may still be used in outbreak response under specific circumstances, such as co-circulation of type1 and type 2 polioviruses.

bOPV = bivalent oral poliovirus vaccines (types 1 and 3); cVDPV2 = circulating vaccine-derived poliovirus type 2; mOPV1 = monovalent oral poliovirus vaccine type 1; mOPV2 = monovalent oral poliovirus vaccine type 2; mOPV3 = monovalent oral poliovirus vaccine type 3; nOPV2 = novel oral poliovirus vaccine type 2; tOPV = trivalent oral poliovirus vaccines (types 1, 2, 3); VDPV2 = vaccine-derived poliovirus type 2; WHO = World Health Organization

2. Inactivated poliovirus vaccine (IPV)

IPV consists of inactivated (killed) poliovirus strains of all three poliovirus types. IPV is given by intramuscular or intradermal injection by a trained health worker. It produces antibodies in the blood to

[28] This rate is expected to have significantly declined, as the type 2 component of oral polio vaccine was removed from essential immunization worldwide in April 2016; this type was responsible for approximately 40% of all VAPP cases.

all three types of polioviruses. In the event of infection, these antibodies prevent the spread of the virus to the central nervous system and protect against paralysis.

IPV is used in essential immunization programmes and in outbreak response. As IPV does not stop transmission of the virus, OPV is the vaccine of choice for outbreak response activities, but IPV may be used under certain conditions.[29]

Advantages

- As IPV is not a 'live' vaccine, it carries no risk of VAPP. It is one of the safest vaccines in use.
- IPV triggers an excellent protective immune response in most people.
- IPV provides a strong boost to intestinal mucosal immunity in those previously vaccinated with OPV.

Disadvantages

- IPV induces very low levels of immunity in the intestine in those who have never received OPV. As a result, when a person immunized with IPV is infected with poliovirus, the virus can still multiply inside the intestines and be shed in the faeces, thereby risking continued virus transmission.
- Administering the vaccine requires trained health workers, as well as sterile injection equipment and procedures.
- IPV is over five times more expensive than OPV.

Laboratory diagnosis

Poliovirus isolation in culture is the most sensitive method to diagnose poliovirus infection. Poliovirus is most likely to be isolated from stool specimens. It may also be isolated from pharyngeal swabs. Isolation is less likely from blood or cerebral spinal fluid.

To increase the probability of isolating poliovirus, two stool specimens are collected at least 24 hours apart from patients with suspected poliomyelitis, ideally within 14 days after paralysis onset.

Real-time reverse transcription polymerase chain reaction (RT-PCR) is used to differentiate possible wild strains from vaccine-like strains ("intratypic differentiation"), using virus isolated in culture as the starting material.

Molecular techniques are done to fully characterize the poliovirus. Maintaining a reference bank of the molecular structure of known viruses allows the geographic origin of new isolates to be traced.

Differential diagnosis

The differential diagnosis of acute flaccid paralysis (AFP) includes paralytic poliomyelitis, Guillain-Barré syndrome (GBS) and transverse myelitis. Less common etiologies are traumatic neuritis, encephalitis, meningitis, other enterovirus infections and tumours (**Table A1.2**).

Distinguishing characteristics of paralytic polio are asymmetric flaccid paralysis, fever at onset, rapid progression of paralysis, residual paralysis after 60 days and preservation of sensory nerve function.

Clinical case management

There is no specific treatment for poliomyelitis. Suspected AFP cases should be referred to a hospital immediately for medical care. Any problem with respiration suggesting involvement of the diaphragm requires immediate attention. Supportive care should be given to paralytic cases under physician management.

[29] WHO Weekly Epidemiological Record. Meeting of the Strategic Advisory Group of Experts on Immunization, September 2024: conclusions and recommendations. (accessed 17 Dec 2025, https://iris.who.int/bitstream/handle/10665/379717/WER9949-eng-fre.pdf?sequence=1).

Table A1.2. Differential diagnosis of poliomyelitis

Key features	Poliomyelitis	Guillain-Barré syndrome	Traumatic neuritis	Transverse myelitis
Progression of paralysis	24–72 hours onset to full paralysis	From hours to 10 days	From hours to 4 days	From hours to 4 days
Fever at onset	High, always present at onset of flaccid paralysis, gone the following day	Not common	Commonly present before, during, and after flaccid paralysis	Rarely present
Flaccid paralysis	Acute, usually asymmetrical, principally proximal	Generally acute, symmetrical and distal	Acute, asymmetrical and affecting only one limb	Acute, lower limbs, symmetrical
Muscle tone	Reduced or absent in affected limb	Global hypotonia	Reduced or absent in affected limb	Hypotonia in lower limbs
Deep-tendon reflexes	Decreased to absent	Globally absent	Decreased to absent	Absent in lower limbs early, hyperreflexia late
Sensory symptoms and sensation	Severe myalgia, backache, no sensory changes	Cramps, tingling, hypoesthesia of palms and soles	Pain in gluteus, hypothermia	Anaesthesia of lower limbs with sensory level
Cranial nerve involvement	Only when bulbar involvement is present	Often present, affecting nerves VII, IX, X, XI, XII	Absent	Absent
Respiratory insufficiency	Only when bulbar involvement is present	In severe cases, enhanced by bacterial pneumonia	Absent	Sometimes
Autonomic signs and symptoms	Rare	Frequent blood pressure alteration, sweating, blushing, body temperature fluctuations	Hypothermia in affected limb	Present
Cerebrospinal fluid	Inflammatory	Albumin-cytologic dissociation	normal	Normal or mild in cells
Bladder dysfunction	Absent	Transient	Never	Present
Nerve conduction velocity: third week	Abnormal: anterior horn cell disease (normal during the first two [2] weeks)	Abnormal: slowed conduction, decreased motor amplitude	Abnormal: axonal damage	Normal or abnormal, no diagnostic value
Electromyography (EMG) at three weeks	Abnormal	Normal	Normal	Normal
Sequelae at two months and up to a year	Severe, asymmetrical atrophy, skeletal deformities developing later	Symmetrical atrophy of distal muscles	Moderate atrophy, only in affected lower limb	Flaccid diplegia, atrophy after years

Sources: WHO. Field guide for supplementary activities aimed at achieving polio eradication, Rev. 1996. Geneva: World Health Organization; 1996;4 (accessed 17 Dec 2025, https://apps.who.int/iris/bitstream/handle/10665/63478/WHO_EPI_GEN_95.01_REV.1.pdf). Marx A, Glass JD, Sutter RW. Differential diagnosis of acute flaccid paralysis and its role in poliomyelitis surveillance. Epidemiol Rev 2000;22(2):298-316 (accessed 17 Dec 2025, https://doi.org/10.1093/oxfordjournals.epirev.a018041).

Annex 2. Vaccine-derived poliovirus classification and response

There are three categories of vaccine-derived polioviruses (VDPVs), each with a unique classification and associated mode of response.[30]

Circulating vaccine-derived poliovirus (cVDPV): Through serial transmission of vaccine virus in an under- or unimmunized community, the attenuated polio vaccine viruses can regain neurovirulence and transmission characteristics of wild poliovirus (WPV). VDPVs that establish person-to-person transmission are classified as circulating vaccine-derived polioviruses (cVDPVs). These have become an urgent issue for the polio eradication programme as cVDPVs have been responsible for thousands of poliomyelitis cases since their first characterization in 2000.[31] Strengthening essential immunization systems and conducting supplemental immunization activities (SIAs) are necessary to avoid an emergence of cVDPV. After community transmission has become established, interrupting cVDPV requires outbreak response measures, including high-quality SIAs to reach every child in affected communities.[32]

Immunodeficiency-associated vaccine-derived poliovirus (iVDPV): A far smaller but potentially serious challenge to sustaining global polio eradication is represented by VDPVs that evolve in and are excreted by patients with inherited primary immunodeficiency disorders (PIDs) affecting B-cell immunity. Following exposure to oral poliovirus vaccine (OPV), PID patients may be unable to clear the vaccine viruses, permitting viruses to continually replicate and increasing the risk for reversion to a form that is neurovirulent and transmissible. When this occurs, the virus is referred to as immunodeficiency-associated vaccine-derived polioviruses (iVDPVs). Infected PID patients may shed iVDPV for months or years before the patient becomes paralysed. PID patients shedding iVDPVs may also theoretically spread poliovirus in communities with low immunity, posing a potential threat for the re-introduction of poliovirus and outbreaks after the eradication of WPV and cessation of OPV use. iVDPV surveillance has been set up through sentinel surveillance sites for the detection of poliovirus among asymptomatic patients with certain PID and provides strategies and treatments to mitigate both the individual and the community of the risk posed by iVDPVs.[33]

Ambiguous vaccine-derived poliovirus (aVDPV): A final category of poliovirus is the ambiguous vaccine-derived poliovirus (aVDPV), termed “ambiguous” because these viruses cannot be genetically linked to previously identified VDPVs and because the individuals excreting the virus do not have a known immunodeficiency. aVDPVs may be an early indication of the possibility of a cVDPV developing, and therefore surveillance needs to be ramped up as soon as one is detected.

[30] Global Polio Eradication Initiative (GPEI). Classification and reporting of vaccine-derived polioviruses (VDPV). Geneva: World Health Organization; 2016 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2016/09/Reporting-and-Classification-of-VDPVs_Aug2016_EN.pdf).
[31] Public Health Dispatch: Outbreak of Poliomyelitis --- Dominican Republic and Haiti, 2000. MMWR Morb. Mortal. Wkly. Rep. 2000;49(48);1094,1103 (accessed 17 Dec 2025, https://www.cdc.gov/mmwr/preview/mmwrhtml/mm4948a4.htm).
[32] Global Polio Eradication Initiative (GPEI). Outbreak Preparedness & Response (webpage) (accessed 17 Dec 20205, https://polioeradication.org/polio-today/outbreaks/).
[33] Global Polio Eradication Initiative (GPEI). Guidelines for Implementing Poliovirus Surveillance among Patients with Primary Immunodeficiency Disorders (PIDs), revised 2022. Geneva: World Health Organization; 2022 (accessed 17 Dec 2025, https://polioeradication.org/wp-content/uploads/2022/06/Guidelines-for-Implementing-PID-Suveillance_EN.pdf).

Annex 3. Indicators for AFP surveillance

The following indicators are used for **certification** purposes and for measuring the **timeliness** of activities. They have been categorized as recommended indicators for monitoring AFP surveillance at the country, regional, and/or at the global level and as topic-specific indicators. They are the most widely used indicators.

Certification standard indicators differ from timeliness-of-detection indicators

Certification standard indicators that are regularly reviewed by national, regional and global certification commissions aim to capture the **quality and performance** of the surveillance system—its sensitivity or ability to detect poliovirus (if present) or to provide a high level of confidence of the absence of poliovirus (Table A3.1). In contrast, timeliness-of-detection indicators, as introduced by the GPEI 2022–2026 Strategy[34], capture the overall capacity of the programme to rapidly identify any wild poliovirus (WPV) or vaccine-derived poliovirus (VDPV) (Table A3.2). These timeliness indicators should only be used to assess the **speed** at which surveillance activities are completed. Both categories of indicators are needed to assess surveillance sensitivity and to measure the impact of actions aimed at strengthening AFP surveillance to rapidly detect polioviruses.

Recommended indicators

Certification and performance indicators for AFP surveillance

Table A3.1. Overall indicators on AFP surveillance quality

Indicator	Calculation (expressed as a percentage – unless specified otherwise)	Target	Analysis notes
Non-Polio AFP rate (NPAFP rate)	(# of cases discarded as NPAFP in children <15 years of age / # of children <15 years of age) x 100 000	AFR, EMR, SEAR: ≥2 AMR, EUR, WPR: ≥1 Endemic countries and outbreak-affected areas^: ≥3	**Expressed as rate** For a partial year of data, calculate annualized NPAFP rate. Recommended analysis: stratify by sex of AFP case.
NPAFP rate – subnational	(# of populous districts that meet the NPAFP rate target / # of populous districts)	≥80% Outbreak-affected districts: 100%	Populous districts: population under 15-year-old ≥100,000. All high-risk districts within an outbreak affected country† must reach a NPAFP rate of ≥3
Stool adequacy	(# of AFP cases with 2 stool specimens collected ≥24 hours apart AND ≤14 days of onset AND received in good condition* in a WHO-accredited laboratory / # of AFP cases)	≥80%	For calculation: missing stool condition = good condition Recommended analysis: stratify by sex of AFP case.

^Outbreak-affected area is defined as: any administrative level within a country experiencing an outbreak of WPV or circulating vaccine-derived poliovirus (cVDPV).
†Outbreak-affected country is defined as: any country experiencing an outbreak of WPV or circulating vaccine-derived poliovirus (cVDPV) currently or in the previous 12 months or that is still classified by the program as an 'outbreak country.
* Good condition defined as at least 8 grams, reverse cold chain maintained from collection to arrival at laboratory, with no evidence of desiccation or spillage.
AFP = acute flaccid paralysis; AFR = African Region; AMR = Region of the Americas; EMR = Eastern Mediterranean Region; EUR = European Region; NPAFP = non-polio acute flaccid paralysis; SEAR = South-East Asia Region; WHO = World Health Organization; WPR = Western Pacific Region

[34] Global Polio Eradication Initiative (GPEI). Polio Eradication Strategy 2022–2026: Delivering on a promise. Geneva: World Health Organization; 2021 (accessed 17 Dec 2025, https://apps.who.int/iris/bitstream/handle/10665/345967/9789240031937-eng.pdf).

Table A3.1. (continued)

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Stool adequacy – subnational	(# of districts that reported ≥5 AFP cases that meet the stool adequacy target / # of districts that reported ≥5 AFP cases)	≥80%	Select only districts with ≥ 5 AFP cases
Stool condition	# of AFP cases with two **stool specimens** arriving in good condition* at a WHO accredited laboratory / # of reported AFP cases	≥80%	For calculation: missing stool condition = good condition
Composite index – national	Population <15 years of age living in districts that meet both targets for NPAFP rate and stool adequacy / Population <15 years of age living in all districts	≥80%	
Completeness of 60-day follow-up examinations	# of inadequate AFP cases with a follow-up visit completed ≥60 days AND ≤90 days of onset / # of inadequate AFP cases	≥80%	Include only inadequate cases with ≥90 days since paralysis onset (follow-up exams should have been completed and received)
Completeness of AFP contact sampling	# of inadequate AFP cases with contact sampling§ / # of inadequate AFP cases	≥80%	
Completeness of weekly zero reporting (WZR)	# of reporting sites that submitted a zero/weekly report / # of reporting sites	≥80%	
Timeliness of WZR	# of reporting sites that reported by the assigned deadline / # of reporting sites	≥80%	
Adequacy of active surveillance visits†	# of high-priority sites that were visited weekly / # high-priority sites	≥80%	

§ 2 or 3 contact samples per inadequate AFP case, as per regional recommendation.
†High-priority sites are facilities that have a high likelihood of seeing an AFP case; they are visited at least on a weekly basis and sometimes more often.
AFP = acute flaccid paralysis; NPAFP = non-polio acute flaccid paralysis; OB = outbreak; WZR = weekly zero reporting; WHO = World Health Organization

Timeliness indicators

The GPEI Strategy 2022-2026 set the target for all polioviruses to be reported within 35 days of paralysis onset. It became clear that this 35-day target could not be achieved for countries without "full laboratory capacity" (i.e., without in-country capacity to perform virus isolation [VI], intratypic differentiation [ITD], and sequencing). These countries required specimens to be shipped to 1-2 international laboratories to complete testing. A second operational target of ≤46 days was therefore introduced for countries without full laboratory capacity.

Table A3.2. Overall indicators on timeliness

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Timeliness of detection for WPW/VDPV	# of WPVs and VDPVs cases with final laboratory results ≤35 days (full laboratory capacity) or ≤46 days (without full laboratory capacity) of onset for AFP cases / # of WPV and VDPV cases	≥80%	Recommended analysis: examine distribution, outliers and median days.
AFP detection – system	# of AFP cases* with final laboratory results ≤35 days (full laboratory capacity) or ≤46 days (without full laboratory capacity) of onset / # of AFP cases*	≥80%	Recommended analysis: examine distribution, outliers and median days.

*Aggregated results: all lab results (AFP + contacts) used to classify AFP case as confirmed/discarded.
AFP = acute flaccid paralysis; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

Table A3.3. Indicators on timeliness of field activities

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Timeliness of notification	# of AFP cases reported ≤7 days of onset / # of AFP cases	≥80%	Recommended analysis: stratify by sex
Timeliness of investigation	# of AFP cases investigated ≤48 hours of notification / # of AFP cases	≥80%	Recommended analysis: stratify by sex
Timeliness of field activities	# of AFP cases with 2 **stool specimens** collected ≥24 hours apart AND ≤11 days of onset / # of AFP cases	≥80%	Recommended analysis: stratify by sex
Timeliness of optimized field and shipment	# of AFP cases with ≤14 days (domestic) or ≤18 days (international) between **paralysis** onset and **specimen** arrival at laboratory / # of AFP cases	≥80%	Recommended analysis: stratify by sex Meaningful for all samples, including negatives
Timeliness of stool specimen shipment	# of AFP cases with ≤3 days (domestic) or ≤7 days (international) between stool collection and arrival at a WHO-accredited laboratory / # of AFP cases	≥80%	Use second stool collection date, unless only one stool collected

AFP = acute flaccid paralysis; WHO = World Health Organization

Table A3.4. Indicators on timeliness for laboratory activities

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Timeliness of virus isolation results	# stool specimens with ≤14 days between receipt at a WHO-accredited laboratory and virus isolation results / # stool specimens	≥80%	
Timeliness of ITD results	# specimens with ≤7 days between virus isolation results and ITD results / # specimens that require ITD	≥80%	
Timeliness of shipment for sequencing	# specimens with ≤7 days between ITD results and arrival at sequencing laboratory / # specimens that require sequencing	≥80%	Only applies to laboratories without sequencing capacity
Timeliness of sequencing results	# specimens with ≤7 days between arrival at a WHO-accredited sequencing laboratory and sequencing results / # of specimens requiring sequencing	≥80%	

ITD = intratypic differentiation; VDPV = vaccine-derived poliovirus; WHO = World Health Organization

Topic-specific indicators

Table A3.5. Indicators on AFP surveillance

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Composite index – subnational	# of populous districts that meet NPAFP rate target and stool adequacy target / # of populous districts	≥80%	Populous districts = districts with ≥100,000 children <15 years old
Unreported AFP cases found during active surveillance	# of unreported AFP cases found in the register during active surveillance visits / month	0	**Expressed as a number per month**
Percentage of supervised active surveillance visits	# of active surveillance visits supervised per month / # of active surveillance visits conducted per month	≥25%	Calculated by priority site, by geography, and by quarter.
Number of supervisory visits in high-priority sites	# HP sites with ≥1 supervised visit in the last 6 months / # of HP sites	100%	Calculated by geography and quarter
AFP case field validation#	# of AFP cases validated ≤14 days of investigation / # of AFP cases	≥30%	
Timeliness of AFP contact sampling	# of contact stool specimens of inadequate cases collected ≤7 of days of investigation / # of contact stool specimens of inadequate cases	≥80%	

AFP = acute flaccid paralysis; HP = high priority; NPAFP = non-polio acute flaccid paralysis
# as opposed to a clinical validation; would be done by a supervisor of the person who reported the case

Table A3.6. Topic-specific indicators on health-seeking behaviours

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Healthcare encounters	# of AFP cases with ≤2 healthcare encounters between paralysis onset and before notification / # of AFP cases	≥80%	Recommended analysis: stratify by sex and by geography
Appropriateness of surveillance network	# of AFP cases with first health encounters with a reporting site within the AFP surveillance network / # of AFP cases	≥80%	

AFP = acute flaccid paralysis

Table A3.7. Indicators on community-based surveillance

Indicator	Calculation (expressed as a percentage)	Target	Analysis notes
Proportion of AFP cases reported by CBS	# of AFP cases (those on linelist) identified by community informant / # of AFP cases on linelist	TBD*	Recommended analysis: stratify by sex
Proportion of 'verified' AFP reported by CBS	# of 'suspect' AFP cases identified by community informant / # of AFP cases 'verified' by surveillance officers	TBD*	

AFP = acute flaccid paralysis; CBS = community-based surveillance; TBD: To be determined
*Appropriate target to be determined by the country or regional level.

Table A3.8. Gender specific indicators

Indicators	Calculation (expressed as a percentage)	Target	
Professional profile by sex (by category)	# of women [professional profile] / total # of staff or informants (by category: surveillance officer, supervisor, CBS informant)	TBD*	Recommended analysis: by category (surveillance officer, supervisor, CBS informant)
Staff with completed PRSEAH	# of surveillance staff having completed PRSEAH training / # of staff	100%	

CBS = community-based surveillance; PRSEAH = preventing and responding to sexual exploitation, abuse and harassment; TBD: to be determined.
*Appropriate target to be determined by the country or regional level.

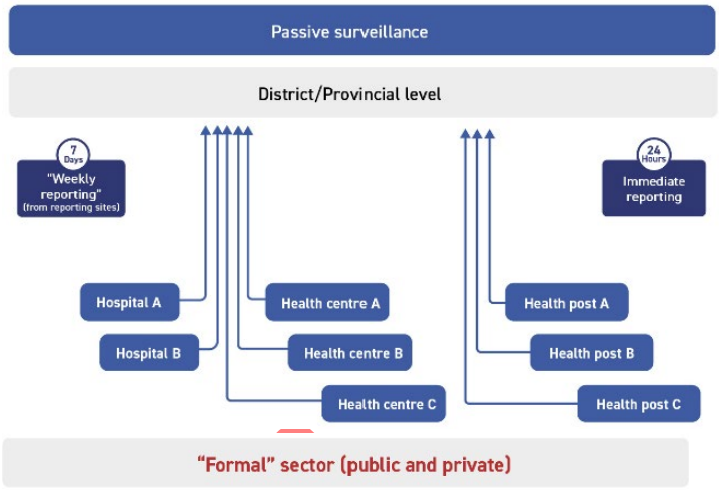
Annex 4. Routine and active surveillance

Field reviews of acute flaccid paralysis (AFP) surveillance have shown that the difference between routine (passive) and active surveillance (AS) is unclear in many countries. At the most basic level, routine surveillance relies on "*reports being sent*" while AS is the process of "*surveillance staff going physically to visit health facilities*" (**Figs. A4.1** and **A4.2**). While the AS network includes routine surveillance sites that report on AFP, the activity of prioritizing, scheduling and conducting AS visits to actively search for AFP cases in facility records distinguishes AS from routine surveillance (**Fig. A4.3**)

A. Routine surveillance

- All facilities that are part of the routine (passive) surveillance network ("reporting sites") should immediately notify any AFP case they identify to the district / provincial level.
- All facilities should also send weekly and/or monthly reports to the district / provincial level *(blue arrows)*.

Fig. A4.1. Representation of routine (passive) surveillance



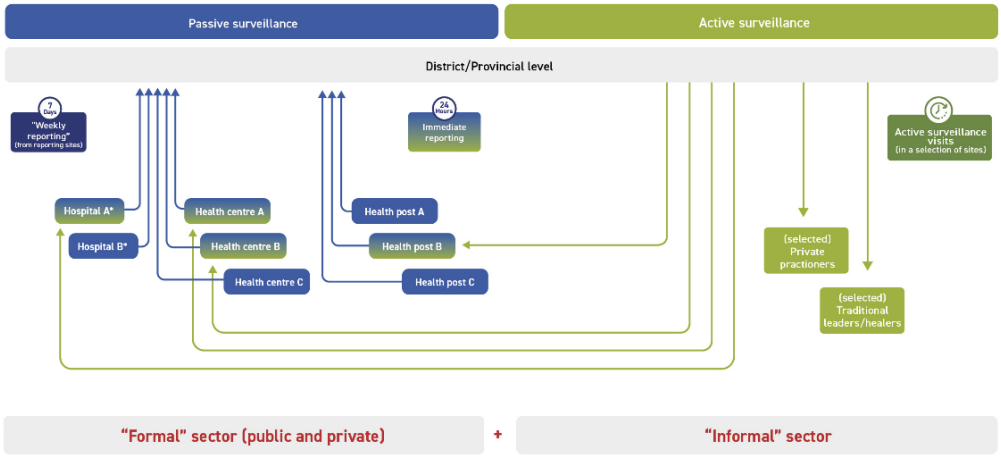
Source: WHO.

B. Active surveillance (AS)

- Reporting sites in the formal sector that are most likely to see AFP cases are selected for AS (blue-green boxes).
- Informal sector actors (not in passive surveillance reporting) are engaged for AS because of their likelihood of seeing AFP cases (green boxes).
- All AS sites, whether formal or informal, should also notify an AFP case immediately.
- District and provincial surveillance teams regularly visit all AS sites (green arrows).

Within hospitals, AS visits should be conducted in wards that are likely to see AFP cases: paediatric wards, internal medicine, inpatient, outpatient, emergency, etc.

Fig. A4.2. Representation of active surveillance



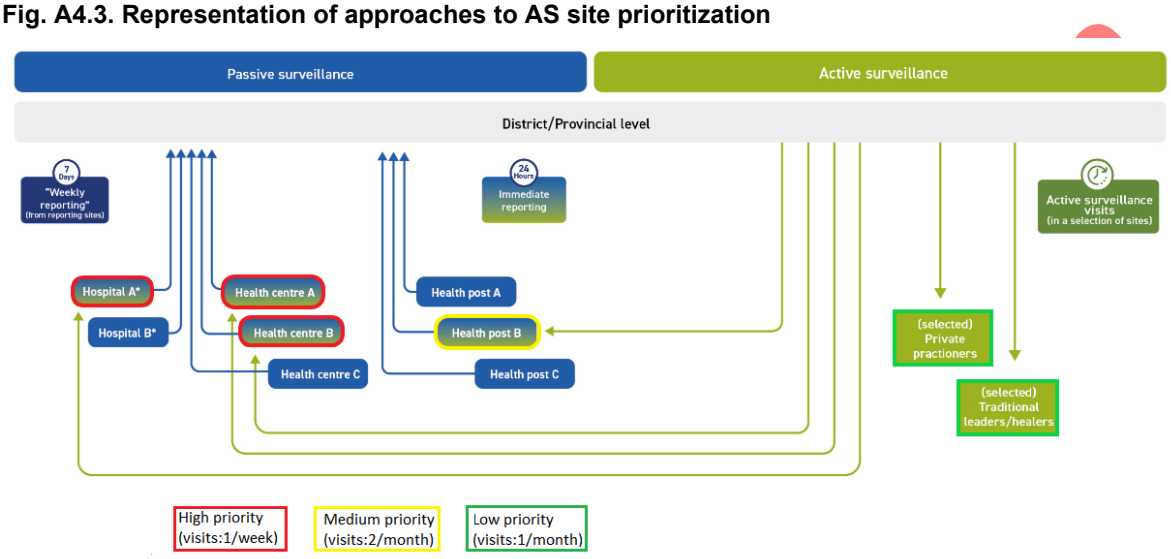
Source: WHO.

C. Prioritizing AS sites

The sites with the highest likelihood of seeing an AFP case should be prioritized over other sites. This could include large hospitals with a paediatric ward or a medium-sized health centre in a province. The red boxes highlight high-priority sites; yellow boxes, medium-priority sites; and green boxes, low-priority sites (**Fig. A4.3**).

The frequency of AS site visits depends on the priority of the facility with high-priority sites often visited weekly or twice a week, medium-priority sites visited every two weeks or monthly, and low-priority sites visited monthly or quarterly. The frequency must be adjusted based on the local epidemiological context.

Fig. A4.3. Representation of approaches to AS site prioritization



Source: WHO.

Annex 5. Active surveillance visits

The World Health Organization (WHO) has published guidance for active surveillance (AS) that includes tips on making the best use of surveillance sites and informants and for improving the overall sensitivity of active surveillance for acute flaccid paralysis (AFP).

Download "Best practices in active surveillance for polio eradication."

Steps in conducting active surveillance (AS) visits

Before you leave your office

1. Make sure you have:

- ✓ stool collection kits
- ✓ case investigation forms
- ✓ the most recent AFP line list
- ✓ communications material (e.g., posters)
- ✓ notebook and pen
- ✓ tape and thumbtacks (to put up posters or case definitions)

When you arrive at the AS site

2. Meet with the facility AFP focal person. (Note: If this is your first visit to the site, pay a courtesy visit to the director of the facility to explain the purpose of your visit and ask permission to conduct regular visits.)

3. Ask the AFP focal person if the site has received or seen a case meeting the definition of AFP since the last visit.

4. Conduct a case search by:

- ✓ visiting the children's wards and specialized services (e.g., orthopaedics, rehabilitation centres); and
- ✓ checking the patient register(s) in the inpatient, outpatient, emergency and paediatrics departments for signs and symptoms that could have caused an AFP (box to right). Check for the information in the register under diagnosis, conditions, signs and symptoms. Do this for all visits since the last visit.

Looking for the syndrome AFP

Records rarely indicate diagnoses. If there is a polio case, you may not find "polio" or "poliomyelitis" in health records. Furthermore, signs and symptoms described will rarely correspond to the AFP case definition.

Some words and phrases you might see:

- Paralysis, paresis (weakness), flaccid (soft)
- Weakness, hypotonia of a limb, weakness of unknown origin
- Frequent falls, walking distortion
- "Can no longer walk"
- "Can no longer stand up"

Keep in mind:
These can be in any language or dialect.

5. Collect in your notebook the names and addresses of AFP cases you find.

6. In the register, note the result of your search below the last registered patient (number of AFP cases found in the register, e.g., "0 AFP cases found," if none found) with today's date. Add your signature, so that supervisors will know that you have visited.

7. If you find a case in the register that looks like a missed AFP case, ask whether this case was already reported. Also, compare it to your AFP line list.

8. If you establish that the case is "new" – that is, not previously reported – plan to investigate it as soon as possible.

9. Sensitize the surveillance focal person, if new to the job, and other people likely to encounter a case, such as nurses, if they're not familiar with AFP surveillance. (Note: If the facility has no surveillance focal point yet, for example if it is a new site, make sure that a focal point is identified and trained.) See **Table A5.1** for a summary of focal point responsibilities.

Communicating with focal points

- With clinicians, "I'm looking for AFP cases, not polio. There will be no additional work for you."
- With traditional practitioners and midwives, "Your patients will remain your patients. There is no competition, and all test results will be shared with you."
- With refugee camps and at entry points, "Here's an AFP case definition, which is the purpose of my visit."

10. Give feedback on the facility's "zero reports" (routine surveillance weekly reporting), if necessary (i.e., in case of incomplete or late reports).

11. Provide the site with:

- AFP case investigation forms and stool collection kits for high priority sites; and
- case definitions, posters, flyers, etc., for all sites.
  If possible, put up the case definitions and posters yourself.

12. Thank the staff and remind them of the date of your next visit.

Note: If a country is implementing integrated surveillance, the AS visit will cover several diseases and may also involve checking the vaccine stock and cold chain. Officers conducting AS visits should receive training to build their capacities on those integrated activities. AS forms are usually modified to reflect integration of disease surveillance with other vaccine-preventable diseases (VPDs).

After you return to the district office

11. Note the salient results of the visit in the supervisory notebook (including people met and sensitized, weaknesses observed, number of cases found) for your record and reports.

12. Immediately notify any new AFP case(s) to the national level and launch AFP case investigations.

Experience has shown that suitable AFP focal points vary by facility.

- *In smaller hospitals, it may be the person already designated for reporting notifiable diseases or sending the weekly or monthly routine report.*
- *In larger hospitals, routine reporting is often carried out by an experienced nurse or infection control nurse; however, a clinician may also be designated.*
- *In hospitals with paediatric departments, paediatricians actively involved in managing patients in the emergency department or paediatric wards (not necessarily the chief of the paediatric department) should be designated as facility focal point.*

Table A5.1. Focal point responsibilities for active surveillance

Responsibility	Related duties
Immediate notification of an identified AFP case and case investigation support	• Whenever a doctor or nurse in an AS site encounters a patient with AFP, the designated AFP focal point should be immediately informed. • The AFP focal point should immediately contact the responsible district or province surveillance team to report the AFP case. • The AFP focal point may initiate stool collection. • The AFP focal point will liaise with and lend support to public health staff or surveillance officers who arrive to conduct an AFP case investigation, to include gathering pertinent information.
Coordination with public health staff during AS visits	• The AFP focal point is the primary contact for public health staff visiting regularly to conduct AS visits. • During each visit, the public health officer will contact the AFP focal point to ask whether cases have been seen and discuss recently reported cases.
Confirmation of zero reporting	• Before a routine surveillance weekly report is sent, the AFP focal point must make sure that sending a “zero report” means no AFP case was seen in the facility during the reporting period.

AFP = acute flaccid paralysis; AS = active surveillance

Annex 6. Community-based surveillance

Needs assessment

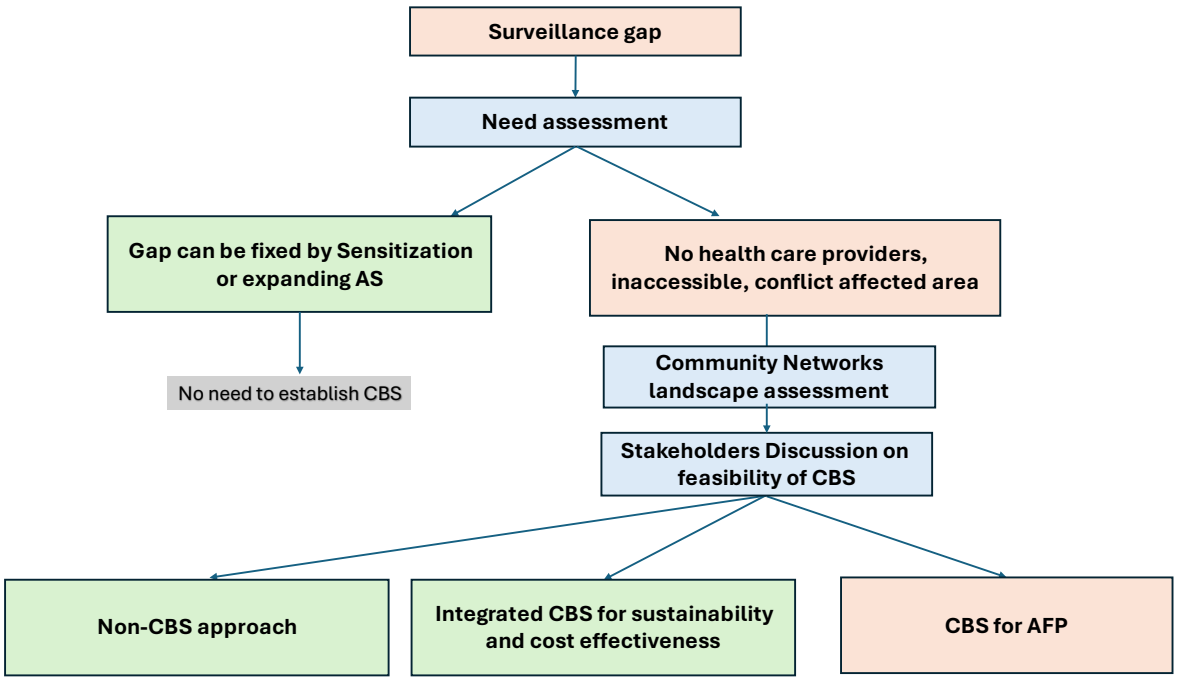
Before implementing community-based surveillance (CBS), a needs assessment must first be carried out while other potential surveillance strengthening options must be explored.

The needs assessment is a situational analysis that explores the following questions:

- How well does the current acute flaccid paralysis (AFP) surveillance system cover special populations or hard-to-reach areas?
- What are the real issues behind surveillance gaps? Are they related to healthcare access and utilization or cultural acceptability, gender norms?
- Is the current system event-based surveillance (EBS) where polio is one of the signals?
- Who are primary reporters of AFP cases in the community? Are they included in the AS network?
- Are CBS activities currently operating for other diseases?
- Is linking informants to existing health facilities an option?
- What are the health-seeking behaviours of the communities and what are the influencing factors? For example, gender, ethnicity, internally displaced population (IDP) or refugee, place of residence, etc.
- What resources in the area should be consulted, such as healthcare facilities and providers (public and private), humanitarian agencies, and nongovernmental organizations (NGOs)?
- What healthcare providers and existing community networks, particularly women's groups, professional and political networks, and grassroots organizations, could be engaged?

While needs assessment help to inform decisions, further discussions and deliberations are needed to identify the most feasible course of action. **Fig A6.1.** summarizes these additional steps and possible outcomes.

Fig.A6.1 Decision tree on establishing CBS for AFP case detection



Process to establish CBS

If the conclusion of the needs assessment and stakeholder discussions is that CBS is the most effective strategy to improve AFP surveillance sensitivity for a specific population or area, the first step to establish CBS is to decide on the modality.

CBS generally has two modalities:

- **Stand-alone CBS** has a high resource intensity modality with incentives, close supervision, and telecommunication tools. It usually functions independently of the facility-based surveillance with informants directly linked with surveillance officers.
- **Integrated CBS** has a low-resource intense modality with volunteers or informants sensitized annually and receiving minimal incentives for reporting verified true AFP cases. Informants are usually linked to focal points within nearby health facilities, so informal CBS often works more closely with facility-based surveillance.

The process to establish CBS involves the following steps:

1. **Sensitization:** Identify, sensitize and brief key community actors (local and religious leaders, traditional healers, women leaders) to engage and gain their support for leadership of CBS.
2. **Selection:** Select community informants or volunteers jointly with community leaders. Choose informants who are of good character, who are invested with community trust and acceptance, are knowledgeable of the area, and speak the local language/dialect. He/she should have an education level and age suited to the community culture and norms.
3. **Support:** Identify barriers and challenges that the community and/or informants may face, particularly related to gender, and build support to resolve them. For example, such barriers could be literacy levels or lack of training, limited decision-making power, or restricted mobility or access to transport. Issues related to security and safety should also be addressed particularly for women informants.
4. **Capacity building:** Train community informants using concise educational materials. Provide materials to support tasks, such as visual job aids, case investigation forms (CIFs), tools to record information, focal point contact information, and stool collection kits.
5. **Activities:** Community informants/volunteers will:
    - actively search for suspected AFP cases through rumours, regular (biweekly) home visits, and more frequent (weekly) visits to traditional healers and religious leaders;
    - keep records on vaccination and basic demographic data for families and children; and
    - immediately report a suspected case of AFP to the designated CBS focal point and/or the surveillance officer. The surveillance officer will follow up to confirm that the suspect AFP case meets the AFP case definition, initiate investigation and specimen collection, and notify the district health authority.
6. **Supportive supervision:** Establish an oversight structure that supports community informants/volunteers by conducting regular supervisory visits, providing feedback and periodic refresher trainings to ensure informants maintain their knowledge and skills.

Considerations for including AFP in existing CBS network

Building upon an existing CBS network begins with identifying and engaging with organisations that are already working in the community. This may include organizations involved in human health, animal health or environmental health. Activities to consider include:

- discussing the feasibility of including syndromic AFP detection in the CBS network;
- harmonising tools and approaches for interoperability and data sharing;
- training community informants including refresher trainings;
- collaborating in monitoring and evaluation.

Challenges and troubleshooting

Certain challenges should be anticipated in setting up, implementing and maintaining CBS (**Table A6.1**).

Table A6.1. Issues and possible actions to troubleshoot community-based surveillance

Issue	Possible actions
Difficulty to sustain CBS due to cost	• Build on existing local CBS networks. • Explore less resource-intensive CBS modalities to balance available funds with sufficient activities to address surveillance gaps. • Advocate for internal resources and reinforce community and government ownership of CBS (government budgets, bilateral cooperation) to ensure continuity, rather than external support which may not be sustainable. • Consider integrated surveillance (e.g., VPDs) or integrated interventions (e.g., health education and immunization) to share costs.
Difficulties finding the "right" community volunteers, as many programmes compete for suitable volunteers and may have different incentives	• Adapt case definitions, forms, protocols and training to the literacy level of the community volunteers to carry out on-the-job mentoring and motivation. • Coordinate and collaborate with other agencies and community networks and share volunteers.
Difficulty in recruiting women as community informants due to existing gender norms and rules, safety and security risks, lower literacy rates, women's restricted mobility or lack of acceptable modes of transport	• Systematically analyse and address gender-related barriers to increase women's meaningful participation, safety and job satisfaction. Engage with community/religious leaders to pave the way for women's participation. • Develop strategies to increase gender balance among volunteers, including actions for revising selection criteria, retention, equal remuneration and capacity building; address specific barriers affecting women's participation in training activities such as transport options, the timing and location of training. • Ensure that policies and training for the prevention of all forms of harassment, sexual exploitation and abuse and other forms of gender-based violence are in place, actively communicated and implemented, sharing information about existing confidential reporting mechanisms and safeguarding policies for community volunteers.
Lack of community cooperation and trust	• Build trust by engaging the community in the selection process for volunteers, in the recognition and motivation of volunteers, and in the provision of feedback – all with respect to local social/cultural norms. • Engage key influencers within communities, including women's groups, community organizations, religious leaders and other opinion influencers (based on context analysis). • Ensure the provision of observable benefits to the community (e.g., interventions, health education).
Ineffective communication with targeted communities	• Consider including popular local media (radio, mobile messaging) to respond to preferences, needs and challenges of diverse women and men in the community (e.g. different communication channels and platforms, different literacy levels). • Target both men and women as caregivers in all polio and AFP-related community outreach, encouraging men's increased participation in children's health care. • Utilize toll-free numbers or communication networks to report AFP cases.
Difficulties in quickly conducting AFP case investigation in inaccessible areas and among some special populations.	• Consider interviewing the suspected AFP case (or collection and transport of specimen) by the community volunteer; ensure appropriate training and coaching. • Consider investigating the AFP case outside of his/her residence area by the community volunteer; ensure provision for transportation cost for examination and/or specimen collection.

AFP = acute flaccid paralysis; CBS = community-based surveillance; VPD = vaccine-preventable disease

Table A6.1 (continued)

Issue	Possible actions
Limited ability or inability to perform monitoring and supportive supervision in inaccessible or hard-to-reach areas.	• Explore innovative ways of working remotely (e.g., phones, WhatsApp) or relying on local organizations. Refer to *Guidelines on Implementing Poliovirus Surveillance in Hard-to-Reach Areas & Populations*. • Ensure means of communication among community volunteers and surveillance officers: petty cash, phone or other access to means of communication. • Consider using an electronic system for connecting informants' activities and suspected AFP cases to the public health system.
Waning interest and motivation of informants over time which leads to deteriorating reporting quality and high turnover of staff	• Keep informants motivated. An integrated CBS may be more rewarding as community informants can directly observe the benefits from their work. • Provide a strong supervisory structure and regular feedback and periodic refresher trainings. • Maintain support and offer recognition for activities that are well done. • Welcome the report of suspected AFP cases, even if they do not meet the "true" AFP case definition.
Simplified AFP case definitions make CBS less specific	• Balance the sensitivity and specificity of the overall CBS system with repeated training, close supervision and feedback.
Increased workload in polio laboratory	• Coordinate on a regular basis with the laboratory and inform them if expected workload is likely to increase.

AFP = acute flaccid paralysis; CBS = community-based surveillance

Monitoring and evaluation

CBS should be well monitored and reviewed to guide timely corrective action (**Table A6.2**). Monitoring activities can be done with the help of existing partners and community networks (e.g., community mobilizers) and through engagement of local government authorities. The first three indicators can be monitored monthly with the rest monitored annually.

Table A6.2. Indicators for community-based surveillance

Indicator	Calculation (expressed as a percentage)	Target
Proportion of AFP cases reported by CBS	# of AFP cases (those on linelist) identified by community informant / # of AFP cases on linelist	TBD*
Completeness of weekly/monthly zero reporting (WZR/MZR)	# of reports received from community informants / # of expected reports from community informants	≥80%
Timeliness of WZR/MZR	# of reports received on time from community informants / # of expected reports from community informants	≥80%
Proportion of women informants	# women informants / # informants	≥50%-80%^
Proportion of informants from local area	# local informants / # informants	≥80%^

AFP = acute flaccid paralysis; CBS = community-based surveillance; MZR = monthly zero reporting; TBD = to be determined; WZR = weekly zero reporting

*Appropriate target to be determined by the country or regional-level.

^Target to be adjusted at the country level; priority countries to regularly analyse.

Table A6.2. (continued)

Indicator	Calculation (expressed as a percentage)	Target
Supervision of informants[†] [‡]	# informants who have received at least one supervisory visit in last 3 months / # of informants	≥80%
Informant training[‡] [§]	# informants with training within the last year / # of informants	≥80%
Informant turnover rate[‡] [§] [¶]	# informants who left during the previous year / # informants	TBD*

[†] To be reviewed quarterly; priority countries to regularly analyse. Suggest stratifying results by supervisor.

[‡] Results should be stratified by sex.

[§] To be reviewed annually; priority countries to regularly analyse.

[¶] Informant turnover rate is a flag; the target is to be defined at the country level. The baseline is the number of informants at the beginning of the review period.

*Appropriate target to be determined by the country.

Annex 7. Examples of forms

7.1 - Active surveillance visit form

Active surveillance (AS) for acute flaccid paralysis (AFP)

AS visit report form

Name of officer: _____ Date of visit: _____

Year _____ Month of visit: _____

Province: _____ District: _____

Name of health facility (+ another identifier): _____

No.	Item	Status			Remarks
1	Interview with:				
1.1	Doctor in charge	Yes	No	N/A	
1.2	AFP / surveillance focal point	Yes	No	N/A	
1.3	Paediatrician of the facility	Yes	No	N/A	
1.4	Neurologist of the facility	Yes	No	N/A	
1.5	Physiotherapist of the facility	Yes	No	N/A	
1.6	Other health facility staff. *Specify*: _____	Yes	No	N/A	
2	Check for new / missed AFP cases:				Details of new AFP cases:
2.1	Outpatient register (OPD) checked for AFP cases	Yes	No	N/A	
2.2	Inpatient register (IPD) checked for AFP cases	Yes	No	N/A	
2.3	Internal medicine department / ward	Yes	No	N/A	
2.4	Neurology unit	Yes	No	N/A	
2.5	Orthopaedic department	Yes	No	N/A	
2.6	Physiotherapy unit	Yes	No	N/A	
2.7	Other departments / units / wards. *Specify*: _____	Yes	No	N/A	
3	Check for supplies and material availability:				
3.1	Stool specimen kit(s)	Yes	No	N/A	
3.2	Specimen carrier(s)	Yes	No	N/A	
3.3	AFP poster(s) visible in the facility	Yes	No	N/A	
4	*Summary*: New and unreported cases *since last visit*:	New (all new)	Unreported (out of the new cases found)		If already reported, write EPID no.
4.1	Number of AFP cases found during this visit, since the last visit				
5	Feedback:	Number			EPID of cases for result pending
5.1	Number of AFP cases for which results have not reached the facility in >60 days				
6	Other checks done:				Remarks
6.1	Vaccine cold chain fully functional	Yes	No	N/A	
6.2	Polio vaccine in stock	Yes	No	N/A	
6.3	*Other*: _____	Yes	No	N/A	

Name of person in charge of facility: _____

Signature of person in charge of facility: _____ Date: _____

Signature of officer: _____ Date: _____

7.2 - Case investigation forms (version 2022 for non-endemic and endemic)

Polio Eradication – AFP Case Investigation Form (v.2022 – non-endemic)

EPID Number: _____-_____-_____-_____-_____ Received: ____/____/_____
Country Region/Prov. District Year Onset Case Number at National level

Case Investigation

Region/Province: _____ District: _____ City/Town: _____

Village: _____ Address: _____ Phone number: _____

Case coordinates (WGS 1984 format): Latitude: _____ Longitude: _____

Nearest Health Facility: _____ Type: _____ Distance (circle): <5 km / 5-10 km / >10 km

Patient's name: _____ Sex (circle): Male / Female

Date of birth (DOB): ____/____/____ Age (if DOB unknown): _____ year _____months

Father's name: _____ Mother's name: _____ OR Caregiver's name: _____

Notification / Investigation

Date Case notified: ____/____/____ Notified by (Name): _____ Title/Designation: _____

Facility (Name): _____ Type of Facility (circle appropriate option): 1=Public / 2=Private / 3=Armed Forces /
4=Informal Health Care provider / 5=NGO / 6=Other (specify) _____

Is this Facility (circle applicable option): Active Surveillance site / Zero-reporting site (not an Active Surveillance site) / Outside network

Date Case Investigated: ____/____/____ Investigated by (Name): _____ Title/Designation: _____

Hospitalized? Yes / No Date of admission to hospital, if applicable: ____/____/____

Hospital record #: _____ Hospital Name / Address: _____

Signs and symptoms

Fever at onset of Paralysis? Yes / No / Unknown Progressive Paralysis ≤3 days? Yes / No / Unknown Site of Paralysis:

Date of onset of Paralysis: ____/____/____

Is Paralysis: **Flaccid and acute?** Yes / No / Unknown **Asymmetric?** Yes / No / Unknown

Paralyzed limb(s) sensitive to pain? Yes / No

LA RA
LL RL

Was there any injection just before onset of paralysis? Yes / No If "Yes", mention the site of injection in the table below:

	Arm	Forearm	Buttocks	Thigh	Leg
Right					
Left					

Provisional diagnosis: _____

Health encounters

Did the Case seek help at any other place after parent(s) or caregiver(s) noticed paralysis or weakness in the child and before being seen at the current place? Yes / No

In chronological order, list the Place(s) and/or Person(s) the Case visited for health care between Onset and visiting this place (Notification). Please fill out the table below in chronological order, including this place:

Total Number of Health Encounters for this case:_____

Date of Visit	1: ___/___/___	2: ___/___/___	3: ___/___/___	4: ___/___/___	5: ___/___/___
Name of Facility or Person (1)					
Type of Facility or Person (2)					
Location [Address] of Facility or Person with Phone number					
Is this site a part of the reporting network?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Was the case Notified?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Action(s) taken if case was not notified					

(1) "Name of Person" if Traditional or Faith Healer, or other Individual
(2) 1=Hospital / 2=Clinic or Health Center / 3=Pharmacy / 4=Traditional or Faith healer / 4=Other (specify)

AFP?

After investigation, was this a true AFP? Yes / No If not, do not fill the rest of the form and record "6" under final classification

Immunization history

Total number of polio vaccine doses (exclude birth dose): _____

OPV dose at birth: ____/____/____ 1st dose: ____/____/____ 2nd dose: ____/____/____ 3rd dose: ____/____/____

4th dose: ____/____/____ If >4, last dose: ____/____/____

Total OPV doses received through SIA: _____ Total OPV doses received through RI: _____ [99=Unknown]

Date of last OPV dose received through SIA: ____/____/____

Total IPV doses received through SIA: _____ Total IPV doses received through RI: _____ [99=Unknown]

Date of last IPV dose received through SIA: ____/____/____ Source of RI vaccination information (circle): Card / Recall

Stool specimens

Date 1st specimen: ____/____/____ Date 2nd specimen: ____/____/____ Date specimen sent to national level: ____/____/____

Date specimen received at national level: ____/____/____ Date specimen sent to inter-country/national Laboratory: ____/____/____

Date specimen received at inter-country (I-C)/national Laboratory: ____/____/____ Adequate upon reception at Lab? Yes / No

Date combined Cell Culture Results available: ____/____/____

Final Cell Culture Results: _____ [1=Suspected poliovirus, 2=Negative, 3=NPENT, 4=Suspect poliovirus + NPENT]

Date Results sent to national EPI: ____/____/____ Date Results received at national EPI: ____/____/____

Date sent from I-C/National Laboratory to Regional Laboratory: ____/____/____

Date I-T differentiation results sent to EPI: ____/____/____ Date I-T differentiation results received at EPI: ____/____/____

Final Lab Results:

W1	W2	W3	Discordant Sabin	SL1	SL2	SL3	(R) NPENT	NEV
1=Yes, 2=No			Type 1, 2, 3	1=Yes, 2=No			1=Positive, 2=Negative	

Date isolate sent for sequencing: ____/____/____ Date sequencing results sent to program: ____/____/____

Follow-up exam

Date of follow-up examination: ____/____/____ Results of exam: _____

1=Residual paralysis
2=No residual paralysis
3=Lost to follow-up
4=Died before follow-up
5=Residual spastic paralysis

Residual Paralysis? LA RA LL RL

Final classification

Immunocompromised status suspected? Yes / No / Unknown

☐ 1=Confirmed polio
2=Compatible
3=Discarded
6=Not an AFP case

☐ 7=cVDPV
8=aVDPV
9=iVDPV

☐ Serotype: 1, 2, 3

Investigator Name: _____ Investigator Title: _____

Unit: _____ Address: _____ Telephone: _____

NB: this example of 'non-endemic country' CIF is based on the CIF used in AFRO.

Polio Eradication – AFP Case Investigation Form (v.2022 – endemic countries)

Urgent Case (i.e., clinically Polio): Y / N	EPID NUMBER	Date of onset of weakness / paralysis	Date of Notification	Date of Investigation	Notifying District / Agency / Town
	/ / / /				

Identification

AFP Case Coordinates (*WGS 1984 format*): Latitude: _____ Longitude: _____

Patient's Name: Sex: Male / Female

Date of birth (DOB): ____/____/____ or (if DOB is unknown) Age at Onset: _____ years _____ months

Father's Name: Grand Father's Name:

Mother's Name: If no Parent: Caregiver's Name:

First Language: Urdu / Punjabi / Saraiki / Sindhi / Balochi / Brahvi / Pushto / Hindko / Pahari / Shina / Other: _____

Tribe: _____ Religion: _____

Address: House No.: _____ Street / Mohalla: _____ Landmark: _____ Village: _____

Union Council: _____ UC Code: _____ Tehsil/Taluka/ Town: _____

District: _____ Mobile (cell) phone number: _____

Case lives in a: Hard-to-reach location / community: Yes / No ; Insecure location: Yes / No; Geographically difficult to reach: Yes / No; Urban slums: Yes / No ; Informal settlements: Yes / No ; IDP or Refugee Camp: Yes / No; Informal settlements: Yes / No

Case belongs to migrant / mobile community? (circle appropriate answer): Yes / No . If 'Yes', specify (circle):

1. Brick-Kiln worker 2. Agricultural/Seasonal Migrant 3. Industrial/construction workers 4. Internally displaced person (IDPs).

5. Nomads (e.g., bangle sellers, snake charmers, beggars, pawinda, bakarwal) 6. Afghan National / Returnees 7. Refugee

8. Others (please specify): _____

Notification

Notified by: Name: _____ Title / Designation: _____

Name of Health Facility/Unit: _____ Health Facility Code: _____

Type of facility: (circle 1 option): Public / Armed Forces / Private / NGO / Informal health care provider / Community based

Is this health facility (circle one option): 1. Active Surveillance Site / 2. Zero Reporting Site (not an active site) / 3. Outside network

Was case admitted to Hospital/Health facility? Yes / No .If 'Yes', Date of admission: ____/____/____

If the patient died, date of death: ____/____/____; Cause of death (+ obtain death certificate): _____

Provisional diagnosis:

Health encounters

Did the case consult (formal or informal) at any other place after parent(s) / caregiver(s) noticed the weakness/paralysis in the child and before being seen at the current place? Yes / No

In chronological order, list the Place(s) and/or Person(s) the Case visited for health care **between Onset and visiting this place** (Notification). Please fill out the table below in chronological order, **including this place**:

Date of Visit	1: ____/____/____	2: ____/____/____	3: ____/____/____	4: ____/____/____	5: ____/____/____
Name of Facility / Person (1)					
Type of Facility / Person (2)					
Location and Phone number					
Is this site a part of the reporting network?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Was the case Notified?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Action(s) taken if case was not notified					

(1) "Name of Person" if Traditional or Faith Healer, or other Individual

(2) 1=Hospital / 2=Clinic or Health Center / 3=Pharmacy / 4=Traditional or Faith healer / 4=Other (specify)

Person(s) who took the Case to the 1st health Contact (circle): Mother / Father / Caregiver / Aunt / Uncle / Grandmother / Grandfather / Other (specify): _____

Did you consult (formal/informal) for this problem **within 2 days of Onset?** Yes / No / Don't know If **'No'**, what are possible reasons for the delay? (circle all applicable options): 1. Waiting for improvement or complete recovery by itself / 2. Cost of travel and/or health care / 3. Distance to (preferred) health care / 4. Needed permission of family member to go to health facility / 5. Insecurity / 6. Other

(specify): _____ **Total Number of Health Encounters for this case:** _____

Signs & Symptoms

Is /paralysis: Acute (sudden and rapid progression, ≤3 days)? Yes / No / Unknown Flaccid (floppy)? Yes / No

*If weakness/paralysis is not acute and flaccid, **stop investigation**. Specify diagnosis (if known) for excluded cases only*

Was there fever at the onset of weakness/paralysis? Yes / No / Unknown

Is the weakness/paralysis asymmetric? Yes / No

Site of Paralysis (circle all that apply)	Right leg	Left leg	Right arm	Left arm	
	Breathing muscles	Neck muscles	Facial muscles	Ocular muscles	Others (specify, e.g., difficult swallowing):
Where is the weakness/paralysis in arms?		Proximal	Distal	Both	Neither
Where is the weakness/paralysis in legs?		Proximal	Distal	Both	Neither

Neurological Examination	Upper limb				Lower limb			
	Arm (proximal)		Forearm (distal)		Thigh (proximal)		Leg (distal)	
	Right	Left	Right	Left	Right	Left	Right	Left
Tone (Hyper/Hypo/Normal/Asent)								
Power (Grade 0-5) (0=absent, 1=visible contraction but no joint movement, 2=movement but not against gravity, 3=movement against gravity, 4=no movement against resistance, 5=full movement against resistance)								
Proximal reflexes (0=no response, 1=decreased but present, 2=normal response, 3=increased response, 4=clonus)	Biceps	Biceps			Knee	Knee		
Distal reflexes (0=no response, 1=decreased but present, 2=normal response, 3=increased response, 4clonus)			Wrist	Wrist			Ankle	Ankle
Sensation (Intact/Absent/Decreased)								
Plantars (Flexor/Extensor/No response/Not elicited)								

Injection History

Was there an injection 24 hours before the onset of paralysis/weakness? Yes / No If 'Yes', mention Site of injection in table below:

	Arm	Forearm	Buttock	Thigh	Leg
Right					
Left					

Travel History

Did patient travel from home within 35 days before weakness/paralysis onset? Yes / No If 'Yes', mention Places in table below:

Villages / UC	Tehsil	District	Country	When and for How long

Immunization History

Number of OPV doses received in Routine Immunization (exclude birth/zero-dose): _____doses or 'Unknown' (circle 'Yes'): Yes

Was routine OPV doses verified by EPI card? Yes / No

Number: OPV doses (bOPV/mOPV2/nOPV2) received in vaccination campaigns/SIAs (recall): _____doses or 'Unknown' (circle 'Yes'): Yes

Has child received any IPV? Yes / No If 'Yes', date received: ____/____/____

No. of IPV dose received in RI: _____ IPV doses from RI confirmed by Card: Yes / No

No. of IPV dose received in SIA: _____ Date of the last IPV dose received through SIA: ____/____/____

If in your assessment the child is not immunized or missed some OPV doses during the campaigns; mention the key reason (circle 1 reason):

1. Service delivery issue^ 2. Refusal 3. Area of residence inaccessible for vaccination teams due to insecurity 4. Other; please specify:

Date of last OPV dose received: Before onset of Paralysis: ____/____/____ After onset of Paralysis: ____/____/____

Stool Specimen

First stool specimen: Date of collection: ____/____/____ Date sent to Lab: ____/____/____

Second stool specimen: Date of collection: ____/____/____ Date sent to Lab: ____/____/____

Final classification

Immunocompromised status suspected? Yes / No / Unknown

Final classification (circle): Confirmed polio / Compatible / Discarded / Not an AFP / cVDPV / aVDPV / iVDPV

Serotype (circle): 1 / 2 / 3

Other AFP cases

Are there other AFP cases in patient's community within 60 days of weakness/paralysis onset? Yes / No If 'Yes', how many? _____

Name(s) and address(es) of other case/s found (add another sheet if required):

Name of Investigating Doctor:	**Signatures:**
Name of attending Child Specialist/Physician:	**Signatures:**
Name of District/ Town Surveillance Coordinator:	**Signatures:**
Name of PEO/DSO:	**Signatures:**

Please retain a copy of this form for record at Hospital and District Health Office and send a copy to the Provincial Manager – Adapted EPI. Pakistan, Jan, 2019

^ this includes reasons like "house not in the micro-plan";" house is in the micro-plan but not visited by team";" team could not reach the house due to lack of mobility support (far flung areas etc.)";" team reached the house but could not vaccinate the child";" inappropriate vaccination team (e.g., language inappropriate, male team)", etc.

7.3 - Detailed case investigation form

The main elements to include in a detailed case investigation form (CIF) or report are:

- **Case notification**
  - Name and unique epidemiological identification (EPID) number
  - Date of notification
  - Name of respondent and relationship with case
  - Name of interviewer, contact information and affiliation
  - Date of case investigation
- **Demographic**
  - Residence (province, district, village, etc.)
  - Date of birth, age
  - Sex
- **Vaccination**
  - Total number of oral polio vaccine (OPV) doses received in essential immunization (including code for unknown, i.e., 99)
  - Total number of OPV doses received during supplemental immunization activities (SIAs) (including code for unknown, i.e., 99)
  - Total number of inactivated polio vaccine (IPV) doses received in essential immunization (including code for unknown, i.e., 99)
  - Total number of IPV doses received in SIAs (including code for unknown, i.e., 99)
  - Date of last OPV dose
- **Clinical information**
  - Date of paralysis onset
  - Fever at onset of paralysis?
  - Asymmetric paralysis?
  - Neurological examination
- **Risk factors**
  - Occupation of parents/caregivers
  - Ethnicity
  - Special population (check all that apply): refugee, internally displaced population (IDP), reside in security-challenged area, migrant/mobile population
  - Travel history of case and household members (outside of district or country) within one (1) month of onset of paralysis
  - History of attendance at gathering of case and household members (large scale market/fair, other) within one (1) month of onset of paralysis
  - History of visitors to the household within one (1) month of onset of paralysis
- **Specimens**
  - Specimen numbers
  - Date of collection of stool specimens
  - Date stool specimen received in laboratory
  - Condition of stool (good, poor, unknown)
- **Laboratory results**
- **History of care-seeking prior to notification**
  - Name and location of sites / facilities visited by the case between onset and notification
  - Dates of visits
- **Other AFP cases in area?**
- **Geographic and demographic information, population size of area**
- **Rapid OPV/IPV coverage survey of area**
- **Essential immunization and Supplemental Immunization Activity coverage**
- **Map**

7.4 - 60-day follow-up examination form

60-DAY FOLLOW-UP EXAMINATION FORM FOR ACUTE FLACCID PARALYSIS CASES

(to be completed starting on the 60th day after onset of paralysis, and no later than on the 90th day)

EPID number: _____ - _____ - _____ - _____ - _____ Received on ____/____/____

Country | Region/Province | District | Year of onset of paralysis | Case number | by the nation level

IDENTIFICATION

Nome of the nearest

District: _____ Region: _____ health facility: _____

Address: _____ Nomad: _____ 1=YES; 2=NO Village: _____ Town/City: _____

Name of case: _____ Father / Mother : _____

Date of Birth (DOB): _____/_____/_____ If DOB is unknown: → Age: ____ years, and _____ months Sex: ☐ M =Male F=Female

HISTORY OF ILLNESS

Date of onset of paralysis: ____/____/____

Fever at onset of paralysis: ☐

Acute flaccid paralysis: ☐

1=YES, 2=NO, 99=UNKNOWN

Rapid onset of paralysis 0-3 days: ☐

Asymmetry: ☐

1=YES, 2=NO, 99=UNKNOWN

LA ☐☐ RA

LL ☐☐ RL

X =Paralysis

FOLLOW-UP EXAM: ____/____/____

Residual paralysis? LA ☐☐ RA LL RL

Observations during follow-up: ☐

1. Residual paralysis
2. No residual paralysis
3. Lost to follow-up
4. Died before follow-up

MEDICAL BACKGROUND

Clinical exam and Physical signs:

Other information:

INVESTIGATING OFFICER

Name: _____ Title: _____

Affiliation: _____ Address: _____ Tel.: _____

Date of investigation: _____/_____/_____

Explanatory Notes for Completing the 60-day Follow-up Examination Form for AFP Cases

1. **EPID number, Identification, History of illness, Follow-up Examination** (See instructions on the AFP case investigation form for details on how to fill out this section.)

2. **Medical history**
   Mention other information that has occurred with the patient since the last examination, such as vaccinations and other illnesses that may explain the patient's current condition.

3. **Clinical examination (current symptoms)**
   Mention all the symptoms that the patient presents at the interview with the parents/caregivers and the patient him/herself.

4. **Physical signs**
   Describe the physical signs observed during the examination, including the condition of the limbs.

5. **Other information**
   Mention any other information on the child's health status that could guide the members of the National Polio Expert Committee (NPEC) in their decision-making.

Annex 8. AFP case investigation

How to document the case history

While observing the patient for signs of paralysis or weakness, the surveillance officer should take the history of the case from the patient's caregiver (or the patient, if an older child), transcribing key elements on the case investigation form (CIF), including:

(1) Patient identification

- Patient / caregiver identification (names, address or location, mobile phone, etc.) that will be key to tracing the family back, if needed.
- Date of onset of paralysis. Key for further analyses.

(2) Immunization history

- Number of oral polio vaccine (OPV) and/or inactivated polio vaccine (IPV) doses received prior to onset of weakness, whether through supplementary immunization activities (SIA) or essential immunization (confirm with immunization card, if available).
- Siblings' vaccination status (OPV and/or IPV).

(3) History of illness

- First symptoms: date and place of onset of weakness or paralysis (key for the assignment of the epidemiological identification [EPID] number); fever or other symptoms at onset, including if the weakness progressed rapidly or not, and if the weakness affected both extremities equally or not.
- If one or more healthcare providers (formal, informal) were consulted prior to the case being notified, this should be noted, as well as the dates and the names of providers and what treatment, if any, was provided.
- The caregiver should be asked if there is anyone else in the community with similar symptoms.

(4) Travel history

- Travel by the case or anyone else in the household during the 30 days prior to onset of weakness (record details: person, place, time).
- Visitors received during the 30 days prior to onset of weakness (record details: person, place, time).

(5) Special population or high-risk group

- Nomads, internally displaced population (IDP), refugees, people living in inaccessible areas, or other special population or high-risk group should be recorded on the CIF, if applicable.

How to conduct the examination

The objective of the clinical examination in a case investigation of acute flaccid paralysis (AFP) is to *establish whether there is any degree of paralysis or paresis*, regardless of the current clinical diagnosis. It is therefore NOT to establish an exact medical-neurological diagnosis. The physical examination should then be done ideally by a person qualified to do so – either the person charged with the investigation or the attending physician in the hospital.

In AFP surveillance, the objective of the clinical examination is to establish whether there is any paralysis or paresis. It is **NOT** to establish an exact medical-neurological diagnosis.

In most cases, the investigator will have learned much about the presence or absence of flaccid paralysis just through the initial observation of the patient. Depending on the patient's age and ability to cooperate, the investigator should request the patient to walk (if there is an involvement of lower limbs) and then observe the patient's gait. If there is involvement of the upper limbs, request the patient to lift his/her arms. While the physical examination is easier with a cooperative older child, it must also be done with infants and toddlers, and thus, trust must be established.

The focus of the examination should be on simple neurological testing, including an assessment of motor power, muscle tone and reflexes. Status of sensation should be verified. A brief overall clinical examination should be conducted to assess the health status of the child, including a temperature check for a fever and any signs of malnutrition and dehydration. Where / when feasible, a neurological examination by a paediatrician or neurologist can be carried out and attached to the CIF but is *not essential*.

How to collect and store stool samples for AFP cases

Materials and supplies

- ✓ Specimen carrier
- ✓ Frozen ice packs (4)
- ✓ Case investigation form (CIF)
- ✓ Laboratory request form
- ✓ 2 screw-top specimen collection containers
- ✓ Container labels (adhesive)
- ✓ Water-resistant pen for labelling
- ✓ Absorbent material (e.g., cotton)
- ✓ Gloves
- ✓ 4 - Ziploc plastic bags (to hold containers and forms)
- ✓ Contact information of parent/guardian
- ✓ EPID number, if available

Step-by-step instructions

For a process flow on collecting stool samples for AFP cases, see **Fig. A8.1**.

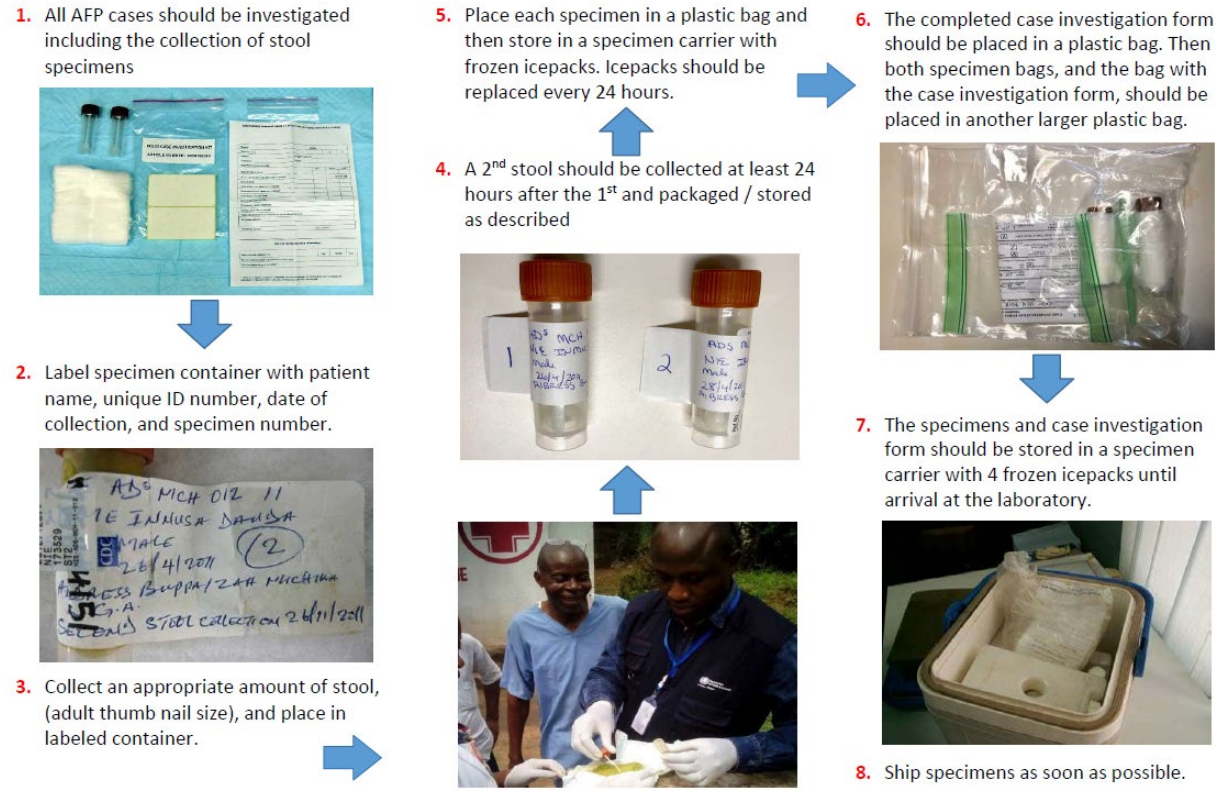
For patients who need more time to produce a specimen, leave all materials listed above in the health facility or with the family. Explain the collection procedure in simple language. Return to collect the specimens and provide new frozen ice packs.

1. Use only the designated stool carrier (not the carrier used for vaccines), which should be lined with frozen ice packs.
2. Use the designated screw-top specimen containers. Should such containers not be available, use any dry, clean, leak-proof container or bottle.
3. WEAR GLOVES DURING SPECIMEN COLLECTION!
4. Collect fresh stool from the patient's diapers or bed pan, or have the patient defecate onto a piece of paper or plastic.
5. Collect a volume of stool about the size of two adult thumbnails (approximately 8-10 grams). Note that the laboratory may reject extremely watery samples and the laboratory also considers rectal swabs inadequate.
6. Use the spatula provided in the container to place the specimen in a clean, leak-proof, screw-capped container and firmly screw the cap back on.
7. Use an indelible or permanent marker to record the following on the self-adhesive label (or a piece of tape or directly on the container, if labels are not available):
    - First and last name of the case
    - EPID number
    - Date of collection for each specimen
    - Time of collection for each specimen
    - Specimen number ("1st" or "2nd")
    - "Hot case", if appropriate
8. Stick the label to the appropriate specimen container.

9. Firmly close the container, place it in the Ziploc plastic bag, and seal the bag. If available, wrap the container in absorbent material prior to placing in the bag in case of shock or leak during transport.
10. Immediately place the specimen into the specimen carrier, in the middle of the four (4) frozen ice packs. Never store stool samples in refrigerators or freezers with vaccines or food.
11. Remove gloves and dispose of them appropriately. Wash hands with soap and water after the completion of specimen collection and glove disposal.
12. Repeat steps 1-11 for the second sample, to be collected at least 24 hours after the collection of the first specimen.
13. Replace ice packs with new, frozen ice packs every 24 hours.
14. Once both stool samples are in the carrier, pack the remaining empty space in the carrier with paper or cotton so that the containers do not move when the carrier is transported.
15. Place the completed CIF in a Ziploc plastic bag and place it in the carrier.
16. Place the completed laboratory request form for the case in a sealed Ziploc plastic bag and place inside the carrier before sending to the laboratory.

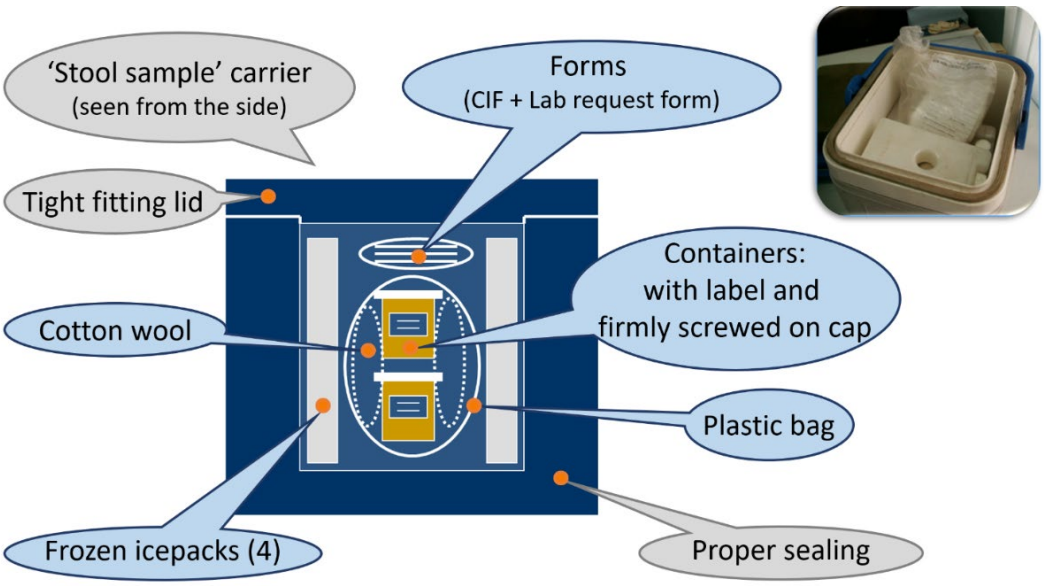
(**Fig. A8.2** offers further illustration on how to pack a specimen carrier.)

Fig. A8.1. Process flow for collecting stool samples for AFP cases



Source: WHO.

Fig. A8.2. Side view of a stool specimen carrier with the placement of material and supplies.



Source: WHO.

Additional storage information

Store specimens according to when they can be sent to the laboratory:

- ≤72 hours after collection, store in specimen carriers with frozen ice packs.
- >72 hours after collection, store in a deep freezer (-20°C) until transport. Do not freeze with vaccines or food.

Annex 9. Active surveillance for detecting AFP cases in capitals and large cities

Parents and caregivers of child facing a medical emergency, such as the sudden onset of paralysis, are likely to bypass their local health facility and go directly to well-resourced hospitals accessible to them. These hospitals are often located in national and subnational capitals and large cities.

Observations and field reviews have identified that AFP cases seen in capital and large cities are oftentimes unreported or reported late to public health officials. Surprisingly, AFP quality indicators from national and subnational capitals tend to be low. This contrasts with expectations that capitals and large cities have larger population size and tend to be aware of public health issues; presence of tertiary hospitals, teaching and specialized health facilities with highly qualified and trained staff able to recognize AFP in a patient; and sensitized to the reporting requirements of AFP to public health officials. Challenges and possible solutions to implementing AS in capitals and large cities are summarized in **Table A9.1**.

Table A9.1. AS challenges commonly encountered in capitals and large cities with possible solutions

Challenges	Possible solutions
Underestimation of AFP surveillance staff workload: Surveillance officers (SOs) often experience heavier workloads than expected due to the influx of AFP cases who reside outside the city. This increases the number and time spent visiting priority reporting sites, cases to investigate, samples to collect and transport, and cross jurisdiction notification and coordination.	**Improve workload and assessment to better allocate sufficient resources:** • Use realistic under-15 population denominators. Estimates from other population sources (e.g., UN, World Bank) and operational targets (e.g., SIAs) may be more realistic than administrative data. • Estimate referral percentages (e.g. % of AFP cases residing outside the city, % of all AFP cases in the country reported by reporting sites in the city) to better capture additional workload from non-resident cases. • Identify additional qualified staff and resources to allocate for case investigations and active surveillance visits. • Advocate that within each reporting site, a trained focal point—preferably a paediatrician or infection control lead— is appointed to promptly report AFP cases, coordinate with SOs, and submit routine reports.
Limited Financial and Human Resources: Surveillance teams often face insufficient resources (e.g., time constraints, limited qualified staff, transport means) to conduct visits to all priority sites in the AS network.	**Prioritize and focus on high priority sites:** • Prioritize in-person visits to high-priority sites. National and provincial staff who may be more experienced and may be geographically closer to sites could conduct AS visits rather than district staff. • Maintain routine communication via phone, email, or mobile tools for non-high priority reporting sites when in-person visits cannot be conducted. In parallel, closely monitor routine surveillance weekly reports from these sites. • Regularly review the list of reporting sites and visit schedules and adjust as more resources become available.

AFP = acute flaccid paralysis; AS = active surveillance; SIA = supplementary immunization activity; SO = surveillance officer; UN = United Nations

Table A9.1. (continued)

Challenges	Possible solutions
Variable levels of cooperation from health facilities: • Diversity of healthcare providers and sectors including private, public, university, and specialized facilities. Each may have different processes and procedures which can complicate organizing visits. • Resistance in participating in AS because of data access policies, concerns about patient disturbance and satisfaction, lack of awareness, fear of increased workload, and limited healthcare staff resources. • Public health in capital cities may operate independently from the public health infrastructure of the rest of the country, adding complexity to accessing cases and data.	**Take the time to introduce AS to key personnel:** • Introduce AFP surveillance and AS concepts to key facility personnel, including the director and department chiefs. • Formally introduce SOs to the reporting site management • Assign SOs to reporting sites to help build rapport and maintain consistency for the reporting site, if possible. • Negotiate access to records and request higher-level support as needed (e.g., private hospitals) • Schedule presentations and trainings, especially for new staff. • Work with senior public health staff to engage and collaborate with independent city public health offices in AS activities.
Communication barriers, especially at high priority reporting sites: • Difficulty convincing senior clinicians and specialists to use a syndromic case definition rather than a diagnosis • Senior clinicians may ignore non-medical SOs from public health offices. • Health care providers are busy and have high turnover. • Supervision, even if "supportive", may be considered negatively (e.g., checking or judging).	**Identify and train the BEST available public health staff:** • Select and train highly qualified senior SOs who have strong clinical knowledge and interpersonal skills, particularly for visits to large tertiary hospitals and other high priority sites. SOs should be well-prepared, concise, and respectful during visits. • Build rapport to establish strong relationships with both clinical staff and department heads to ensure understanding of AFP concepts and reporting. • Encourage clinician engagement and involvement in broader programme roles like expert committees. • Continuous sensitization on the concept and practice of AFP surveillance. • Mentor junior SOs through supervision and training, paying attention to communication skills and gender-related challenges, while regularly sensitizing clinicians and hospital staff on AFP surveillance and reporting requirements.
Access to patient records in facilities with electronic registers: SOs face challenges accessing digital medical records in hospitals, especially in large cities where electronic medical record systems are prevalent.	• Coordinate with hospitals to obtain printed summaries or digitally review patient data covering the period since the last AS visit to ensure comprehensive review of patient registers and records during the visit. Expect a small number of duplicate records to be identified. • Explore with hospital staff and their IT department the possibility of creating automated alerts of possible AFP cases by linking key symptoms (e.g. weakness, inability to walk) and selected diagnoses.
Dynamic nature of the AFP surveillance network and list of reporting sites: • Opening and closing of health facilities • Fluctuation in facility attendance due to population movement (e.g., conflict, natural disasters, etc.)	• Surveillance networks for AS reporting sites require reviews/updates twice a year by national, provincial, and district teams to adjust for facility openings, closures, and population changes such as migration or urban growth. The rapid expansion of private health sectors in urban areas necessitates adding or removing sites to maintain an accurate and effective surveillance system.

AFP = acute flaccid paralysis; AS = active surveillance; IT = information technology; SO = surveillance officer

Monitoring Active Surveillance in capitals and large cities

Close monitoring AFP surveillance sensitivity in capital and large cities is vital because of the high population density and movement that increases the possibility of missing poliovirus transmission. Recommended AS indicators are included in **Annex 3. Indicators for AFP surveillance.**

As described in **Table A9.1**, estimating the referral percentages is a helpful analysis specific to capitals and large cities. These are the 1) percentage of AFP cases detected and reported to public health that reside outside the city, and 2) percentage of all AFP cases in the country reported by reporting sites in the city. Findings from these analyses help to inform more accurate estimates of resource needs and the sensitivity and performance of AFP surveillance within the city.

Annex 10. Gender and AFP surveillance

The Global Polio Eradication Initiative (GPEI) published its Gender Equality Strategy 2019–2023 (extended to 2029) to provide both direction and scope for advancing equality and for strengthening gender mainstreaming across all interventions, strategies and policies.[35]

Surveillance programme and staff should be alerted to:

- gender-related barriers in surveillance detection and response; and
- gender equality in the work environment and organizational culture

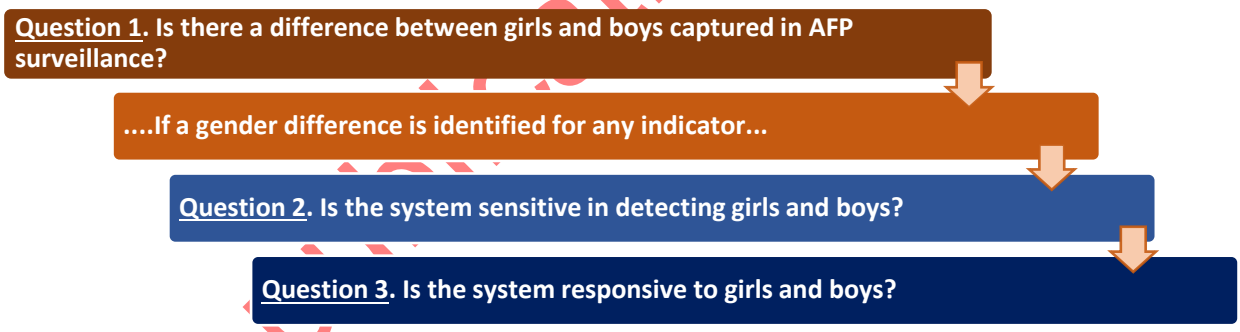
Gender-related barriers in surveillance detection and response

It is essential for every child with AFP to be detected and investigated. In any context and especially in high-risk areas and with special populations, the polio surveillance system must be able to identify the stages at which gender norms, roles and relations, as well as existing gender inequalities, may affect case detection and notification.

Programmes are encouraged to collect and analyse sex-disaggregated data on a systematic basis, including through adapted case investigation forms (CIFs) and analytic tools. These data can be used to identify gender-related barriers in AFP surveillance.

Three questions help identify gender-related barriers to ensuring all children with AFP, regardless of gender, are rapidly detected and investigated (**Fig. A10.1**). The first question is a broad, overarching question to assess if an issue with gender disparity exists in AFP surveillance while the other two questions help to guide further analytical investigation into potential underlying causes.

Fig. A10.1 Process to support the identification of gender-related barriers in AFP surveillance



AFP = acute flaccid paralysis.
Source: WHO.

Question 1. Is there a difference between girls and boys captured in AFP surveillance?

This high-level question will help to quickly identify if any differences exist, though it will not pinpoint the underlying cause for observed gender disparities. Three indicators can help to inform the answer to this question (**Table 10.1**). All three indicators should be regularly monitored, including sex-disaggregated analyses.

Small numbers

The expected number of reported AFP cases may be few in small population areas, making it challenging to compare percentages. Exercise judgement when analysing small numbers.

[35] Global Polio Eradication Initiative (GPEI). Gender Equality Strategy 2019–2023 (extended to 2026). Geneva: World Health Organization; 2019 (access 17 Dec 2025, https://iris.who.int/server/api/core/bitstreams/94ce785e-1402-493e-b0ae-e6a78579eeef/content). See also GPEI Gender and Polio Eradication [website]. Geneva: World Health Organization; 2021 (accessed 17 Dec 2025, https://polioeradication.org/gender-and-polio/gender-and-polio-eradication).

Table A10.1. High-level indicators for identifying gender differences in AFP surveillance activities

Indicator	Purpose	Calculation (expressed as a percentage)
Non-polio AFP rate *OR* AFP cases reported	Assess any sex-based differences in detecting and reporting on AFP cases	*Stratify by sex:* # cases discarded as NPAFP in children aged under 15 years divided by # population aged under 15 years[36] # AFP cases by sex divided by # AFP cases
Stool adequacy	Assess any sex-based differences in the ability to detect poliovirus among AFP cases	*Stratify by sex*: # AFP cases that met all of the following conditions (2 stool specimens collected ≥24 hours apart, within ≤14 days of paralysis onset, AND both specimens received in good condition at a WHO-accredited laboratory), divided by # AFP cases
Timeliness of field activities	Assess if any sex-based differences exist in delays in completing field activities (notification, investigation, stool collections)	*Stratify by sex:* # AFP cases with 2 stool specimens collected ≥24 hours apart and ≤11 days of paralysis onset divided by # AFP cases

AFP = acute flaccid paralysis; NPAFP = non-polio acute flaccid paralysis; WHO = World Health Organization

Despite biological and societal differences in the development of paralytic polio among girls and boys, the risk of developing AFP is assumed to be similar – and thus the distribution of AFP in girls and boys is expected to be approximately even, or 50%–50%, with small variations in the percent difference. Continuous, sizable differences (i.e. >10% over a six-month period) warrant further analyses to identify the underlying cause so that effective corrective measures may be taken, if necessary.

Special populations

When analysing population data (e.g. socioeconomics and demographics), be sure to disaggregate by sex to identify any underlying sex-based differences. Be careful when analysing data by multiple factors at once as this may lead to small numbers.

If any of the three indicators (see **Table A10.1**) suggest a gender difference, two additional questions in the analytical investigation process will facilitate understanding disparities in AFP surveillance performance (see **Fig A10.1**).

Question 2. Is the system sensitive to detecting girls and boys?

This question aims to identify any gender-related disparities in the notification of AFP cases to public health authorities. Two indicators provide insight into the answer (**Table A10.2**). If there are no differences by gender, then the issue is unlikely to be detecting and reporting AFP cases.

Table A10.2. Indicators for AFP surveillance sensitivity to detect all AFP cases, girls and boys

Indicator	Purpose	Calculation (expressed as a percentage)
Timeliness of notification	Identify if any sex-based delays exist in the notification/reporting of AFP cases to public health authorities	*Stratify by sex:* # AFP cases with ≤7 days between onset and notification divided by # AFP cases
AFP case encounters (also called health contact)	Evaluate if one sex has more visits with health entities (e.g. providers, facilities, healers) before the public health authority is notified compared with the other sex	*Stratify by sex:* # AFP cases by sex with ≤2 health encounters between onset and notification divided by # AFP cases

AFP = acute flaccid paralysis.

[36] If gender-specific denominators are available, the preference is to calculate the non-polio AFP rate. However, a simple examination of the AFP cases reported by sex is also informative if gender-specific denominators are unavailable.

Question 3. Is the system responsive to girls and boys?

This question examines if girls and boys are treated without bias once they have been reported to public health authorities and within the AFP surveillance system. The indicator timeliness of investigation provides insight into the answer (**Table A10.3**).

Table A10.3. Indicators for AFP surveillance system responsiveness to all AFP cases, girls and boys

Indicator	Purpose	Calculation (expressed as a percentage)
Timeliness of investigation	Identify if any sex-based delays exist in conducting AFP case investigations	*Stratify by sex:* # AFP cases with ≤48 hours between notification and investigation divided by # AFP cases

AFP = acute flaccid paralysis.

If gender differences are detected in the timeliness of investigating AFP cases, then issues with stool specimen collection are likely, warranting further analyses. For example, do girl AFP cases rarely have two specimens collected? Or if collected, are both specimens not collected within two days of case investigation?

Why are transport and testing not potential gender issues?

Transport companies are blinded to the gender of the AFP case. Laboratorians focus on processing samples and are generally unaware of the gender of the AFP case due to the use of lab identification numbers to test samples.

When gender-related barriers to responsiveness are identified, it is important for the programme to conduct a transparent examination of its policies and procedures to understand how discriminatory practices have impaired the surveillance programme's ability to detect polio. The inclusion of management and gender specialists in the evaluation process will help to identify appropriate corrective action.

Responding to identified gender-barriers

If differences are identified, surveillance officers and/or programme managers should conduct in-depth assessments with the support of management and gender-related organizations that can help identify locally acceptable corrective actions (**Table A10.4**). When considering actions to inform and support surveillance interventions, always:

- collaborate with women's groups, women's health committees, grassroots networks and other organizations with a strong understanding and influence around health-seeking behaviours, gender-related barriers and children's health issues;
- consult with community authorities, religious leaders, opinion influencers, and elders, including women, to sensitize and negotiate access to women or households and increase women's participation;
- sensitize and promote fathers' and men's equal participation in childcare, caregiving, and household responsibilities and tasks; and
- ensure communication channels, tools, materials, and messages are context-specific, informed by gender analysis, and free from harmful gender stereotypes.

Table A10.4. Gender-related barriers in surveillance detection and proposed responses

Stage	Possible issues & their causes	Proposed possible actions
Onset of paralysis to care-seeking	Not seeking care or delay in seeking care due to: ● women caregivers lack decision-making power and/or faces challenges or restrictions in mobility (lack of transport, money, time, multiple household duties, need of authorization to travel to health facility, and/or of a man escort/traveling companion) ● low awareness and literacy rate of women caregivers; lack of access to health information in suitable formats ● discriminatory attitude in health-seeking behaviour for women patients (e.g., men' access to health care prioritized / delays in seeking care for women, poor quality of services of health workers towards women) ● absence of local women healthcare providers	. ● Carry out gender analysis/assessment to identify specific gender barriers to the context/setting. ● Advocate with local authorities. ● Sensitize community and involve men in sensitization and outreach activities. ● Adapt services to women' need (adapt opening times for health services, outreach surveillance activities, etc.).
Notification	Late or no notification due to: ● insufficient knowledge and training opportunities provided for women healthcare workers ● unresponsive medical hierarchy when a women worker notifies an AFP case ● active surveillance visits not conducted regularly and/or adequately due to lack of suitable modes of transport, and/or men escort ● lack of women as community informants (e.g., in CBS) due to existing gender norms and roles	● Ensure availability of training for all staff. ● Engage with women workers at the forefront; address their needs and challenges, esp. safety related (e.g., timing of trainings, transport options, location). ● Review active surveillance data to determine if a disproportionate number of missed AFP cases are girls (previous 6 months) and sensitize staff as needed. ● Advocate health facility leaders to ensure all AFP cases are reported. ● Sensitize local healthcare workers (including to security/safety considerations). ● Ensure availability of safe and adequate transport for personnel. ● Reach out to and collaborate with local women's groups to find solutions. ● Adjust CBS team composition.
Case investigation and stool collection	Delayed investigation and/or stool collection due to: ● gender discriminatory practices in conducting or prioritizing AFP cases for investigation or specimen collection. ● insufficient training opportunities provided for women surveillance officers ● lack of women surveillance officers needed to enter home of the AFP case ● inability of women caregivers to stay overnight in a health facility when case is hospitalized ● safety and security risks faced by women workers	● Train surveillance officers to identify and address personal gender biases and discriminatory practices. Monitor for improvements and consider additional supportive supervision visits. ● Train healthcare worker/surveillance officers to consider gender-related challenges and barriers to women's participation (e.g., location, timing, transport, traveling companion if needed). ● Adjust surveillance team composition. ● Sensitize local health system and/or community. ● Ensure safety of women working at the forefront.

AFP = acute flaccid paralysis; CBS = community-based surveillance

Gender equality in the work environment, and organizational culture

Managers of polio surveillance programmes must ensure that a gender lens is applied within the programme to promote gender equality and to address any gender-related barriers or other factors impacting the safety and performance of staff, as well as career advancement. Below are actions to consider.

- Institutionalize the systematic and regular provision of gender analysis in all reports.
- Increase women's equal and meaningful participation in surveillance, including a gender balance among supervisors, and identify gaps in team composition that contribute to deficiencies in case investigation (e.g., all-men teams not being able to access homes in certain contexts).
- Identify specific needs and barriers faced by women frontline workers (e.g., needs or barriers related to safety, mobility/transportation, literacy (including digital literacy), and training).
- Monitor staff turnover to determine if women are disproportionately leaving programme positions. Investigate if the underlying cause is job-related and take corrective steps to address issues.
- Ensure that the gender module is included in all polio surveillance trainings, with a focus on a description of gender and gender-related barriers in surveillance. Also conduct mandatory staff training on preventing and responding to sexual exploitation, abuse and harassment (PRSEAH).
- Assess the quality of the cascade training and sensitization model to identify any deterioration in the knowledge and practices of surveillance staff, especially women staff in conservative countries.
- Share information about existing reporting and support mechanisms and systems in place to address all forms of sexual exploitation, abuse or harassment. If not already in place, set up communication mechanisms for women involved in polio surveillance to be able to voice and discuss in confidence those issues impacting their physical and emotional wellbeing at work (e.g., mentorship, staff representative).
- Ensure that training and sensitization sessions at health facilities or within communities:
  - ✓ include gender-related barriers to immunization and surveillance;
  - ✓ highlight equal parenting, shared caregiving responsibilities and fathers' equal participation in childcare, caregiving and household tasks (preferring the words "parents and caregivers");
  - ✓ try to ensure that diverse women and men are represented in training visuals and images;
  - ✓ provide sex-disaggregated data and gender analysis whenever possible, with "real life" examples and illustrations, and highlight the importance of collecting and analysing data disaggregated by sex in all monitoring and evaluation activities (**Table A10.5**); and
  - ✓ are accessible to all participants (e.g., facilities are safe and easily reached, timing is accommodating, seating arrangement is appropriate, and organizers and facilitators know how to facilitate sessions to ensure participation from all).

Table A10.5. Gender-related indicators for the work environment

Indicators	Calculation (expressed as a percentage)
Professional profile by sex (by category)	# of women [professional profile] / total # of staff or informants (by category: surveillance officer, supervisor, CBS informant)
Staff with completed PRSEAH	# of surveillance staff having completed PRSEAH training / # of staff

AFP = acute flaccid paralysis; PRSEAH = preventing and responding to sexual exploitation, abuse, and harassment

Annex 11. Health-seeking behaviour

Delays in detecting cases or missing cases may arise from a limited understanding of the health-seeking behaviour of acute flaccid paralysis (AFP) cases and their caregivers, as well as the barriers they may experience in accessing health care.

To address this, country programmes must collect health-seeking behaviour data disaggregated at the lowest possible administrative level by gender and by risk status, for example in the case of special population groups. When analysed, such data can point to possible subnational surveillance gaps and may help strengthen programme activities through a deeper understanding of the underlying causes

Case investigation forms (CIFs) should be modified to include the following:

- the number of health encounters the case had before it was notified;
- whether the reporting sites (facility/person) that saw the case before it was notified are part of the reporting network; and
- whether or not the encounter(s) led to a notification.

Countries should make sure that their case investigation forms (CIFs) are revised to collect data on previous healthcare encounters that AFP cases had before they were officially reported.

Refer to CIFs in **Annex 7** for a section on previous healthcare encounters to capture health-seeking behaviour information.

Fundamentals of health-seeking behaviour assessments

- **Why**: Health-seeking behaviour assessments aim to identify healthcare facilities or persons that AFP cases and their caregivers seek out and 1) may miss reporting AFP cases because they are not part of the AFP reporting network or 2) may report cases but are not currently in the AFP reporting network.
- **What:** Once these individuals or facilities have been identified, the programme can take the appropriate action to increase the sensitivity of the AFP surveillance system. For example, by re-training a focal point on AFP reporting or by adding a focal point to the reporting network.
- **When:** Health-seeking behaviour assessments can be coordinated as part of the periodic review of the reporting network or during outbreak response assessments (OBRAs), surveillance reviews or other activities aimed at reviewing and strengthening AFP surveillance.
- **How:** These assessments review information collected on modified CIFs; AFP cases or caregivers provide details on all their health encounters they sought for diagnosis and treatment.

Steps of a health-seeking behaviour assessment

1. Review the reporting network through analysis of CIFs to answer the following questions:
    - How many reporting sites missed reporting an AFP case? Which ones, and where?
    - What are the sites outside the reporting network (i.e., not part of the reporting network) that (a) received and (b) reported an AFP case?
2. Review for possible clusters of AFP cases that were detected late with the aim to identify geographical areas with delays in detecting AFP cases. This may be linked to habits or attitudes within a special population towards healthcare and seeking care, or where AFP surveillance may be overlooking local, more traditional service providers.
3. Identify and implement actions to close surveillance gaps based on health-seeking behaviour of a particular community (**Table A11.1**)

Table A11.1. Specific actions to close AFP surveillance gaps related to health-seeking behaviour

Situation	Action
Case went to a reporting site but was not notified	• Identify the possible reason(s) a case was not notified (e.g., staff turnover, untrained recruit, vacation, workload, case absconded) and address the gap. • Review prioritization (i.e., high-, medium-, low-priority sites); monitor and supervise closely for 6 months for any missed cases
Cases seek care in a health facility or site that is not included in the network	Conduct a visit to each health facility/site/person (if feasible) and evaluate the need for inclusion in the reporting network
Cluster of late detected AFP cases *(cases not reported from their first visit or were notified more than 7 days after onset of paralysis)*	• Conduct quick social mapping of the area to identify possible reasons (e.g., high-risk group, limited coverage of health facilities). • If feasible, visit the area. • Discuss with community the possible reasons for delays. • Sensitize communities. • Sensitize and train healthcare providers. • Consider introducing CBS (after need assessment as per **Annex 6**).

Health-seeking behaviour should be monitored to guide timely corrective action (**Table A11.2**).

Table A11.2. Health-seeking behaviour indicators

Indicator	Calculation (expressed as a percentage)	Target
Healthcare encounters	# of AFP cases with ≤2 health encounters between onset and notification / # of AFP cases	≥80%
Appropriateness of surveillance network[§]	# of AFP cases with first health encounters with a reporting site within the AFP surveillance network / # of AFP cases	≥80%

[§] This is the "percentage of first encounters by designation (e.g., doctor, nurse, traditional healer, vaccinator, other) that led to the notification of an AFP case.
AFP = acute flaccid paralysis

Annex 12. Special population groups

Special population groups	
Definition	Special populations are population subgroups that are not served or are underserved by the regular health delivery system.
Categories	1. Populations living in security-compromised areas 2. Mobile populations: nomads and seasonal migrants (e.g., agricultural or mine workers, brick kilns, construction workers, etc.) 3. (a) Refugees and IDPs in camps and (b) those living in host communities 4. Special populations in settled areas (e.g., cross-border population, urban slums, islanders, fishermen, etc.)
Identification & mapping	It is important to identify and profile these populations based on: ● geographic location, population size, movement routes, timing/seasonality of movement; ● access to health services, health-seeking behaviours, ability of the current surveillance network (health facilities, community-based) to detect AFP cases within the group; ● identification of service providers (public and private, including NGO's, faith-based organizations, etc.); ● vaccination coverage and immunity status; and ● availability of communication activities targeting these special population.
Rationale for special activities to reach special populations	These populations may have more susceptibility to disease and more likelihood of missing detection and transmitting disease. ● Underserved populations may not be covered by the surveillance system. ● There is likely lower population immunity due to low vaccination. ● High movement makes them prone to spread the virus to vulnerable populations.
Challenges and anticipated issues for surveillance among special populations	● Difficulties with mapping and population estimates ● Lack of coordination with stakeholders ● Lack of community involvement ● High cost of resources and logistics: trainings, transportation, supervision, monitoring ● Lack of security
Tips for success	Special population surveillance is facilitated by: ● Special teams dedicated to surveillance in special population ● Close coordination with partners (UNHCR, IOM, INGOs, civil society, veterinary services, etc.)
Surveillance strategies applicable to the special population	**1. Populations living in security-compromised areas** ● Access mapping and analysis that identifies key partners and factions, population dynamics and changes. ● Access negotiating ● Sensitizing and briefing armed forces, relevant partners and community members about polio and AFP case reporting. ● Revising surveillance network by identifying and training appropriate focal points for case reporting— i.e., community-based surveillance (CBS) as appropriate. ● Conducting periodic active case search in community and healthcare facilities. ● Contact sampling around AFP cases (one sample, three contacts). ● Conducting healthy children stool surveys and ad hoc environmental surveillance (ES), to be decided in coordination with WHO country and regional teams. ● Ensuring access tracking and segregated data analysis to monitor surveillance by population group.

Special population groups (continued)	
Surveillance strategies applicable to the special population	**2. Mobile populations** ● Mapping and profiling with leaders or persons identified as surveillance focal points. ● Determining itineraries of the population and mapping healthcare facilities and providers (including veterinarians) along the route. ● Sensitizing population and providers. ● Conducting market sensitization along the route and close to water points and camps. ● Establishing regular contact with focal points for reminders and feedback on reporting. ● Conducting active case search in large gatherings of nomadic groups during SIAs and mobile outreach services. ● Collecting contact sampling around AFP cases (one sample, three contacts). ● Conducting healthy children stool surveys to be decided in coordination with WHO country and regional teams. A similar approach will be used for other mobile population groups as appropriate – e.g., seasonal migrants such as agricultural or mine workers, brick kilns, or construction workers.
	3a. Refugees/IDPs in camps ● Identifying focal points in camps (IDP or refugee) to include in the surveillance network. ● Profiling new arrivals (origin and immunization status). ● Conducting active case search in health facilities of camps and during SIAs. ● Collecting contact sampling around AFP cases (one sample, three contacts). ● Collecting healthy children sampling (new children under five year), to be decided in coordination with WHO country and regional teams. ● Installing a permanent vaccination/surveillance team. **3b. Informal IDPs and refugees in host community** ● Identifying key informants from the community to include in surveillance network. ● Providing appropriate job aids. ● Initiating community IDP and refugee tracking (tracker team). ● Determining health-seeking behaviour. ● Adjusting surveillance network. ● Conducting active case search during SIAs and mobile activities. ● Collecting contact sampling around AFP cases (one sample, three contacts) ● Collecting healthy children sampling (health facilities used by IDPs or refugees), to be decided in coordination with WHO country and regional teams.

AFP = acute flaccid paralysis; CBS = community-based surveillance; ES = environmental surveillance; IDP = internally displaced population; INGO = International nongovernmental organization; IOM = International Organization on Migration; NGO = nongovernmental organization; SIA = supplementary immunization activity; UNHCR = United Nations High Commissioner for Refugees; WHO = World Health Organization

Special population groups (continued)	
Surveillance strategies applicable to the special population	**4. Special populations in settled areas (continued)** *Cross-border populations* ● Mapping official and non-official border crossings ● Mapping seasonal movements ● Estimating population flow averages ● Mapping and profiling villages/settlements, special populations, security and access, gathering places on both sides ● Mapping areas of one district/country only accessible from the neighbouring district or country ● Mapping of surveillance network on both sides ● Identifying organizations working at border entry and exit points (e.g., immigration, port health services, police) ● Providing orientation and sensitization of populations and healthcare providers on both sides ● Using supplemental strategies ● Active case search on both sides in the community (entry points, permanent vaccination sites, markets) and in health facilities ● If there are security-compromised areas or special populations such as refugees or IDPs, implement the specific proposed activities/strategies. *Urban slums* ● Profiling communities and their origin ● Studying health-seeking behaviour and modification of surveillance network ● Conducting active case search ● Consider adding ES sites
Monitoring and Evaluation	● Conduct a segregated analysis to ensure surveillance coverage and quality by population groups (starting with appropriate data collection) ● Conduct regular mapping and risk assessment ● Review/assess implementation of plans ● Engagement of partners for independent monitoring

ES = environmental surveillance; IDP = internally displaced population

Annex 13. Ad hoc active case search

Ad hoc active case search for AFP cases	
Definition	Ad hoc active case search (ACS) is an extraordinary, ad hoc activity conducted to identify unreported acute flaccid paralysis (AFP) cases. ACS is done through retrospective case search in health facility records and interviews of healthcare providers (facility-based) and community leaders and parents (community-based). As an ad hoc activity, ACS enhances active surveillance (AS) activities in the short term under certain criteria, such as a new event or outbreak or when other concerning surveillance gaps are identified.
Rationale and indications	ACS is done to enhance the sensitivity of detecting AFP cases in areas that experience either suboptimal surveillance or new epidemiological risks. This activity can help identify gaps in the AFP surveillance system when new events or outbreaks occur. Conditions that may warrant ACS include: 1. Activities where opportunities to look for AFP cases exist, such as during house-to-house searches, while canvassing to collect geospatial data, while vaccinating newly accessible populations (e.g., refugees or internally displaced populations [IDPs] from inaccessible areas), or during supplementary immunization activities (SIAs). 2. Events, outbreaks and other triggers a) In a polio event or outbreak setting i) As part of the investigation, retrospective case searches and facility-based ACS are implemented. ii) As part of enhanced surveillance by activating AFP case finding and record review b) Other trigger indications i) A disconnect between environmental surveillance (ES) and AFP surveillance findings (i.e., when wild poliovirus (WPV) or vaccine-derived poliovirus (VDPV) is detected in ES and not through AFP). ii) Clustering of polio-compatible cases in time and space. While AFP surveillance implementation or enhancements are being made, ACS can fill a surveillance gap in the short term: 1. Sizable population arrival and settlement, such as IDPs, refugees, and nomads coming from high-risk areas with a recent outbreak or polio event 2. New access to previously inaccessible areas 3. Silent districts or areas 4. Low-performing surveillance areas* 5. When surveillance reviews identify gaps in surveillance performance * While facility-based case search may be recommended in such instances, community-based case search is not recommended unless warranted by further review.
Procedure (steps)	Setting up ACS can be resource-intensive, so it is important to have clear parameters, including the geographic scope, target population and time period of interest (typically previous 6 months). Geographic scope can be defined in review of outbreak-related risk assessments, current epidemiology, genetics of new polio cases or other important risk factors to identify unreported cases. When there are positive ES samples but no AFP case, the geographic scope may be more complex because of the catchment area, requiring additional planning considerations. ACS involves all or a subset of activities, depending on the situation. The steps below can be considered in setting up ACS activities, but it is important to be focused so the search does not become larger and more resource-intensive than needed. Activities should be consistently documented throughout the entire process.

Ad hoc active case search for AFP cases (continued)	
Procedure (steps) - continued	1. Conduct an analysis of AFP surveillance indicators. 2. Conduct subgroup analysis to determine if surveillance reaches all subsets of a population. 3. Decide if the search will be facility- and/or community-based (usually both). 4. Develop tools (e.g., checklist, reporting formats) for recording ACS process and outcomes. 5. Consider enlisting help from nongovernmental organizations (NGOs) for inaccessible areas. 6. Provide training to those who will conduct searches. 7. Develop reporting channels for identified AFP cases. 8. Establish a strong supportive supervision and monitoring mechanism at the field level. *Additional steps for facility-based ACS* 1. Identify and profile all healthcare facilities within and outside the reporting network (public, private, traditional). 2. Retrospective case searches should look for unreported AFP cases up to 6 months prior to the search date. (Interview health providers, review facility registers, make visits to wards.) *Additional steps for community-based ACS* 1. Map and profile areas and populations and identify leaders or contact persons. 2. Ensure community engagement for information gathering and facilitation (e.g., IDPs/refugees: identify elders, camp management committee, host community informants). 3. Carry out house-to-house case search All AFP cases should be added to the line list and should follow case investigation guidelines, including stool specimen collection within 60 days of paralysis onset and contact sampling. *Frequency* This is generally an ad hoc activity when new events/outbreaks are identified in initial response. Other situations where this activity could be considered are (1) in fully or partially inaccessible areas when a window of opportunity opens, (2) in recently accessible areas with disrupted healthcare infrastructure.
Challenges and anticipated issues	ACS has challenges such as: ● Lack of resources: untrained personnel, poor documentation, or inadequate budget. ● Security issues. ● Lack of access to, poor quality or non-availability of health facility records. ● Logistical constraints in reaching communities and health facilities.
Enabling factors & tips for success	ACS is facilitated by: ● Community engagement. ● Presence of NGOs in inaccessible areas. ● Careful, in-depth analysis to prioritize areas, populations or health facilities. ● Knowledgeable and motivated field staff, experienced supervisors. ● Good ACS documentation.
Interpretation of results	● The detection of unreported AFP cases demonstrates gaps in the AFP reporting network. ● Retrospective review of records in facilities included in the network will reflect the quality of the active surveillance visits ● Interviewing traditional healthcare providers and/or private sector practitioners will reflect whether the local surveillance team has been orienting and contacting them. It may also highlight the need to revise the reporting network.
Monitoring & evaluation	● Number of unreported AFP cases detected through ACS (1) with onset less than 60 days and (2) with onset more than 60 days to six months (or older). ● Number of communities and health facilities that had unreported AFP cases found in the process. ● Assess impact of this activity on overall surveillance system, document any changes in active surveillance or reporting networks, and develop and implement improvement plans, where needed.

ACS = active case search; AFP = acute flaccid paralysis; AS = active surveillance; ES = environmental surveillance; IDP = internally displaced people; NGO = nongovernmental organizations SIA = supplementary immunization activity; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

Annex 14. AFP contact sampling

AFP contact sampling	
Also known as	Direct contact sampling and close contact sampling
Definition	The collection and testing of one (1) stool specimen from three (3) individuals in contact with an acute flaccid paralysis (AFP) case. Children in frequent contact with an AFP case (e.g., touching, sharing toys, and sharing food) should be identified for specimen collection. ● Children, preferably <5 years of age. ● In contact with an AFP case in the week prior to and/or two weeks after paralysis onset. ● Examples include siblings and other children living in the same household and/or neighbouring children who played with the AFP case during the period of interest. ● Stool specimens from AFP case contacts may be collected up to 60 days after paralysis onset, as poliovirus may be excreted up to two (2) months or longer. ● Stool specimens are typically collected from the community of residence of the AFP case. However, if the AFP case stayed in other communities one week prior to and/or two weeks after paralysis onset, then collection of specimens from contacts of the AFP case at these locations may also be warranted.
Purpose and rationale	AFP contact sampling is used to provide laboratory evidence of poliovirus in an AFP case. Individuals in contact with AFP cases have a higher likelihood of asymptomatic infection and virus excretion than people who have not had contact. The collection of stool specimens from contacts of AFP cases provides an additional approach to determine if poliovirus is the cause of paralysis in an AFP case. Positive laboratory results of contact specimens are used to confirm poliovirus infection in an AFP case who is not otherwise laboratory confirmed.
Indications	AFP contact sampling should be performed as part of regular AFP surveillance activities. Expanded use may also be done as part of outbreak response activities. Regular AFP surveillance activities: Recommendations per the *Global Polio Surveillance Action Plan 2025–2026* for AFP contact sampling. ● All AFP cases with inadequate stool specimens. Examples of inadequate stool specimens are: (a) 0 or 1 stool specimen collected; (b) at least one stool specimen collected > 14 days after paralysis onset; (c) two stools collected <24 hours apart; and (d) poor stool condition (e.g., specimen was hot upon arrival at laboratory). ● After close coordination with national surveillance and laboratory colleagues, consider all AFP cases who reside in security-compromised or hard-to-reach areas to take advantage of the limited opportunity to reach these individuals and communities. Outbreak response activities: Expansion of AFP contact sampling to enhance AFP surveillance may be warranted under specific circumstances. Expansion should occur in close coordination and collaboration between the national surveillance and laboratory colleagues. ● All AFP cases detected outside the subnational outbreak zone, to increase the probability of detecting virus movement beyond the designated outbreak zone. **IMPORTANT:** Results from AFP contact sampling cannot be used to confirm community-wide transmission of poliovirus; collection of stool specimens is ***not recommended*** from contacts of individuals with following classifications: (1) WPV, aVDPV, cVDPV, unclassified VDPV, SL2/nOPV-L positive; (2) poliovirus positive contacts of AFP cases; and/or (3) poliovirus positive healthy children.

AFP = acute flaccid paralysis; aVDPV = ambiguous vaccine-derived poliovirus; cVDPV = circulating vaccine-derived poliovirus; SL2 = Sabin-like type 2; nOPV2-L = novel oral poliovirus vaccine type 2 like; WPV = wild polio vaccine

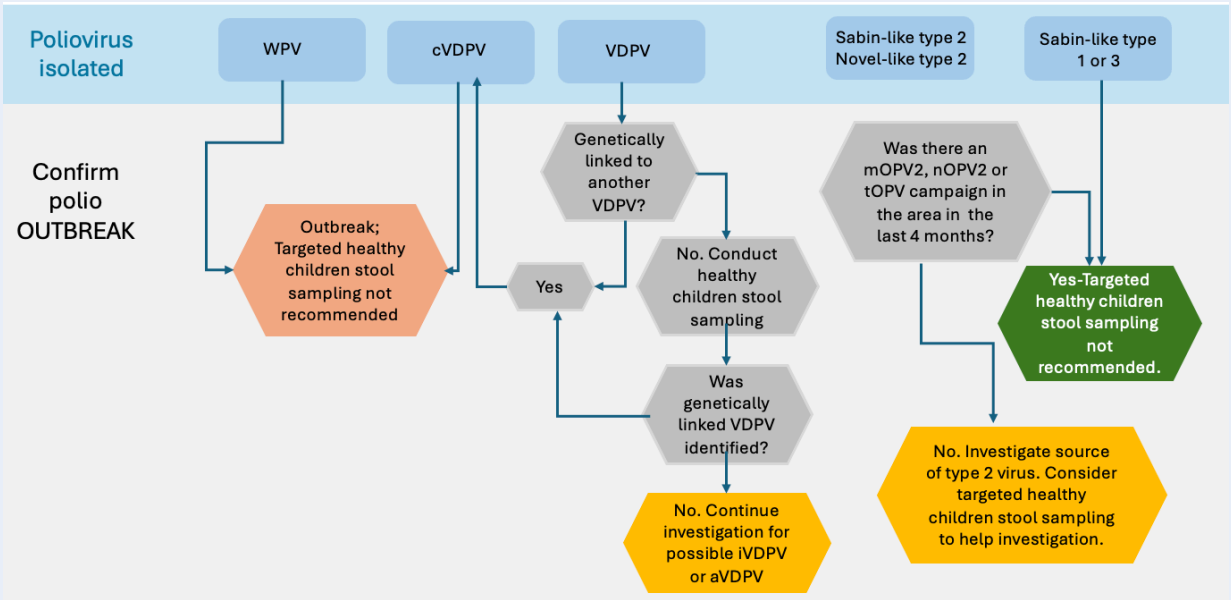
Additional important information	
When to conduct	AFP contact sampling should be conducted during the initial or follow-up activity of an AFP case investigation (i.e., before laboratory results are available). • *Initial AFP case investigation*: Conduct AFP contact sampling if it is known that two stool specimens cannot be collected in a timely manner. • *Follow-up activity*: Conduct AFP contact sampling if the laboratory reports that the AFP case's stool specimens were received in poor condition.
Specimen labelling	Each specimen should be labelled clearly as a contact of the AFP case. The unique identification number should be the same as the AFP case with an added contact indicator ("C") and number (#) suffix (e.g., C1, C2, C3).
"Other" classification	Positive AFP contacts are not classified as confirmed poliovirus cases because they do not meet the case definition, which requires acute flaccid paralysis. Results are included as "others" in poliovirus isolation counts.
Procedures	1. Explain the purpose of collecting stool samples to parents/guardians of the contact. 2. Identify potential contacts (see definition above). 3. Collect one stool sample each from three separate contacts. 4. Adhere to AFP surveillance protocols for the collection, storage, and transportation of stool specimens (see **Annex 8. AFP case investigation**). 5. Complete a separate laboratory request form for each contact. This form is sent to the laboratory along with the specimen while a copy is maintained in the AFP surveillance file of the AFP case. Each specimen should be labelled clearly as described above (see specimen labelling above).

AFP = acute flaccid paralysis; C = contact; GPEI = Global Polio Eradication Initiative

Annex 15. Targeted healthy children stool sampling

Targeted healthy children stool sampling	
Also known as	Healthy children sampling, community stool sampling and community sampling
Definition	The collection and testing of one (1) stool specimen from 20 healthy children to determine if there is community-wide transmission of poliovirus (i.e., outbreak). Healthy children who have not had contact with the confirmed poliovirus case should be targeted for specimen collection. • Ideally children <2 years old, though can be up to 5 years old; • Not in contact with the confirmed poliovirus case within the week prior to and/or two weeks after paralysis onset (i.e., not a contact); • Healthy with no evidence of acute flaccid paralysis (AFP); and • Specimens collected from the same community as the positive poliovirus case, specifically in another part of the community and not an immediate neighbour.
Purpose and rationale	Targeted healthy children stool sampling is conducted to determine if there is community-wide transmission of poliovirus. Community-wide transmission indicates an outbreak, which requires mobilization of resources to quickly launch an outbreak response. The collection of specimens from healthy children who have NOT been in contact with the positive poliovirus case is critical to establishing confirmation of community-wide transmission.
Indications	Targeted healthy children stool sampling is useful in a **very limited number of situations** when investigating an event, specifically when community-wide transmission has yet to be confirmed. In situations where an outbreak has been confirmed, the use of targeted healthy children stool sampling is not recommended as it is an inefficient and ineffective use of programme resources because it will provide no valuable or actionable information. Any decision to do a targeted healthy children stool sampling should be made in close coordination and collaboration with national surveillance and laboratory colleagues.

Fig. A15.1. Flow chart for assessing situations for targeted healthy children stool sampling



AFP = acute flaccid paralysis; aVDPV = ambiguous vaccine-derived poliovirus; cVDPV = circulating vaccine-derived poliovirus; iVDPV = immunodeficiency-associated vaccine-derived poliovirus; mOPV2 = monovalent oral polio vaccine type 2; nOPV2 = novel oral polio vaccine type 2; tOPV=trivalent oral polio vaccine; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

Additional information	
Notes on indications for targeted healthy children stool sampling **(see Fig. A15.1 above)**	× WPV: In most circumstances, one case of wild poliovirus (WPV) is an outbreak therefore targeted health children stool sampling is not recommended. However, WPV detection in an AFP case with a history of travel from an outbreak-affected area prior to paralysis onset or facility-associated exposure are classified as events. In these situations, the decision to do targeted health children stool survey should be made in close coordination and collaboration among national surveillance and laboratory colleagues. × cVDPV: Circulating vaccine-derived poliovirus (cVDPV) indicates community transmission; targeted healthy children stool sampling is not recommended. × VDPV genetically linked to another VDPV: The vaccine-derived poliovirus (VDPV) will be reclassified as a cVDPV; targeted healthy children stool sampling is not recommended. ✓ VDPV not genetically linked to another VDPV: Targeted healthy children stool sampling may be recommended as part of the initial investigation to determine if there is community-wide transmission. ○ If a healthy child has a positive VDPV laboratory result and genetic information indicates it is linked to the VDPV case, this is confirmation of community-wide transmission. The positive test result is used to reclassify the VDPV case as a cVDPV case. ○ A positive VDPV result in a healthy child is also used to reclassify an existing ambiguous vaccine-derived poliovirus (aVDPV) case as a cVDPV case, if viruses are genetically linked. This is also confirmation of community-wide transmission. ○ If no VDPV is detected among the healthy children, ongoing investigation efforts should continue to determine if the VDPV case is possibly an immunodeficiency-associated vaccine-derived poliovirus (iVDPV) or aVDPV case. × Sabin-like 2 (SL2) virus or nOPV2-like virus detected within four (4) months of an mOPV2/tOPV/nOPV2 campaign: SL2/nOPV2-L virus detection is expected during a campaign using Sabin 2/nOPV2 vaccine. Targeted healthy children stool sampling is not recommended. ✓ Sabin-like 2 (SL2) virus or nOPV2-like virus detected more than four (4) months after last mOPV2/tOPV/nOPV2 campaign, or no recent mOPV2/tOPV/nOPV2 campaign: In these instances, an investigation to the source of the SL2/nOPV2-L virus is warranted – and targeted healthy children stool sampling may be considered to help guide investigation efforts. × Sabin-like 1 or 3 viruses: Detection of Sabin-like 1 and 3 virus is expected given bOPV use in essential immunization schedules and outbreak response. Targeted healthy children stool sampling is not recommended. IMPORTANT: Positive test results from targeted healthy children stool sampling *cannot* be used as laboratory evidence of poliovirus in an AFP case (see **Annex 14**. **AFP contact sampling**).
When to conduct	Conduct targeted healthy children stool sampling after confirmation that a VDPV is not genetically linked to another VDPV (i.e., after laboratory test results and sequencing information are available).
Specimen labelling	Each specimen should be labelled clearly as a targeted healthy children stool sampling specimen. The unique identification number should be the same as the positive poliovirus case with an added targeted healthy children stool sampling indicator (“CC”) and number (#) suffix (e.g., CC1, CC2, CC3).
“Other” classification	Positive test results among healthy children are not classified as confirmed poliovirus cases because they do not meet the case definition, which requires acute flaccid paralysis. Results are included as “others” in poliovirus isolation counts.
Procedures	1. Decide on a source population a) Health facility-based sampling - when a child from the targeted area or group visits a health facility for any reason other than AFP b) Community sampling from households or camps

	2. Sensitize and brief community leaders about polio and the importance of collecting samples 3. Use the definition of “healthy child” (see definition above), to identify 20 children. 4. Collect only one stool specimen from each healthy child 5. Adhere to AFP surveillance protocols for the collection, storage, and transportation of stool specimens (see **Annex 8. AFP case investigation**). 6. Complete a specific “targeted healthy children stool survey” form for each child. This form is sent to the laboratory along with specimens while a copy is maintained with the surveillance office. Each specimen should be labelled clearly (see specimen labelling above).

aVDPV = ambiguous vaccine-derived poliovirus; bOPV = bivalent oral polio vaccine; CC = marker used to label targeted healthy children stool specimens; cVDPV = circulating vaccine-derived poliovirus; iVDPV = immunodeficiency-associated vaccine-derived poliovirus; SL2 = Sabin-like type 2; mOPV2 = monovalent oral polio vaccine type 2; nOPV2 = novel oral polio vaccine type 2; nOPV2-L = novel oral polio vaccine type 2 like; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

Annex 16. Improving timeliness of case and virus detection

Because delays in detection can happen at any stage of field, logistic and laboratory activities, countries must monitor timeliness at every stage of the process, particularly at the subnational level and especially in the collection and transport of stool specimens. Only with clear insight into delays can swift action be taken to address the identified bottlenecks (**Table A16.1**). Furthermore, anticipating issues and proactively identifying alternatives as part of preparedness is highly recommended.

Table A16.1. Delays in detection and possible mitigation measures

Stage	Target	Possible cause	Mitigation measures & solutions
Onset to care seeking	AFP cases reported ≤ 7 days of onset (ideally immediately)	• Distance to nearest facility/person • Distrust in the health system • Cost of service • Language barrier • Gender barriers (including no women nurse/doctor, no authorization to travel to health facility)	• Modify data collection tools and analyse by disaggregated data: social or linguistic profile/at-risk population group, sex and health-seeking behaviour. • Conduct periodic (six-month) social mapping as part of the active surveillance (AS) network review to identify gaps in coverage. • Based on findings, address all issues (e.g., mobile clinics, women health workers, consultation and sensitization with the community).
Care seeking to notification	AFP cases reported ≤ 7 days of onset (ideally immediately)	• Lack of awareness and sensitization of healthcare providers	• Conduct consistent, supportive supervisory visits to reporting units. • Ensure training and sensitization of every new staff member. • Provide information, education and communication (IEC) materials: case definition, reporting requirement and pathway, surveillance officer contact information.
Notification to investigation	≤ 48 hours	• Lack of training • Absence of qualified person to conduct investigation • Delay in locating the case • Case is lost to follow-up (i.e., cannot find case) • Competing priorities, challenging workloads	• Ensure case investigation kits (equipment, supplies, and materials) are readily available. • Promote clear responsibilities and reasonable workloads (i.e., back-up should be available in the absence of the main surveillance officer). • Conduct regular trainings for surveillance officers and back-ups (e.g., other public health staff) at the field level.
Investigation to stool 1 collection	≤ 1 day	• Absence of investigation kit • Inability to locate the case (e.g., discharge, travel) • Case has died	• Ensure case investigation kits (equipment, supplies and material) are readily available. • Ensure contact information and address of case is available. • Provide clear instructions on contact sampling in the event of a case with inadequate specimens.
Stool 1 collection to stool 2 collection	≥ 24 hours apart	• Case has died • Case is no longer at same location (follow-up issues)	• Provide clear instructions to nurses and caregivers on collecting the stool specimen. • Provide clear instructions on contact sampling in the event of a case with inadequate specimens.

AFP = acute flaccid paralysis; AS = active surveillance; IEC = information, education and communication

Table A16.1 (continued)

Stage	Target	Possible cause	Mitigation measures & solutions
Stool 2 collection to shipment to national level	Stools 1+2 arrival at laboratory ≤ 3 days (domestic) or ≤ 7 days (international) of collection of stool 2 (ideally immediately)	• No or poor communication on when stool 2 was collected • Poor coordination with courier services • Issues related to routes of transport (e.g., lockdowns, route closure) • Batching (samples kept until several are collected) of specimens	• Pilot electronic tracking of stool specimens. • Plan transport ahead of time, including plan for contingencies. • Obtain special permission to transport samples, if needed. • Identify alternative routes, carriers. • Increase storage capacity, identify storing points. • Don't batch specimens. • Prioritize samples for shipment in event of suspected polio case ("hot" case).
Shipment to national level to arrival at national level	Stools 1+2 arrival at laboratory ≤ 3 days (domestic) or ≤ 7 days (international) of collection of stool 2	• Poor planning for transport, shipment • Insecurity or road closures • Samples kept at national level until several are collected and shipped ("batch" send-off) • International border closures • Suspension of flights	• Pilot electronic tracking of stool specimens. • Create contingency plans with alternative routes or laboratory. • Explore and pursue ad hoc solutions in case of conflict or insecurity (e.g., using humanitarian flights for transport; sending samples to an alternative WHO-accredited lab). • Don't batch specimens.
Arrival at national level to shipment to (inter)national laboratory	Stools 1+2 arrival at laboratory ≤ 3 days (domestic) or ≤ 7 days (international) of collection of stool 2 (ideally immediately)		
Shipment to (inter)national laboratory to arrival at (inter)national laboratory	Stools 1+2 arrival at laboratory ≤ 3 days (domestic) or ≤ 7 days (international) of collection of stool 2		
Arrival at (inter)national laboratory to final results (i.e., negative results or sequencing results for positive specimens)	Stools 1+2 are processed following standard GPLN procedures within defined GPLN target times for all procedures	• International border closures • Issues with shipping isolates to sequencing laboratory • Shortage of critical reagents • Ambiguities in testing outcomes (e.g., mismatched or missing EPID numbers, suspicion of cross-contamination). • Receipt of large batches of specimens.	• Ensure a minimum buffer stock (critical consumables and reagents) for a one-year workload when placing orders for the next year. • Secure a shipping contract with several in-country couriers. • Develop an alternative domestic and international shipping plan with different sequencing laboratories.

AFP = acute flaccid paralysis; EPID = epidemiological identification; GPLN = Global Polio Laboratory Network; WHO = World Health Organization

Annex 17. Polio committees and commissions

While the following terms of reference and descriptions of core activities are generic, groups may take on additional tasks, depending on current programme needs.

1. The National Polio Expert Review Committee (NPEC or ERC)

The National Polio Expert (Review) Committee (NPEC or ERC), or National Expert Group or National Polio Expert Panel is an honorary, volunteer group that meets regularly (between once per month to four times a year). Membership of the committee varies in size. Composition is usually composed of:

- a Chair and a Secretary (usually, the Expanded Programme on Immunization [EPI] manager);
- a paediatrician;
- a neurologist;
- a virologist or microbiologist; and
- an epidemiologist.

The role of the committee is to:

- classify cases of acute flaccid paralysis (AFP) with inadequate specimens that have residual paralysis at 60-day follow-up or those who either died or were lost to follow-up;
- provide technical advice pertaining to AFP cases and ensure AFP cases have a final diagnosis;
- review cases with adequate specimens and Sabin-like excretion to decide on vaccine-associated paralytic poliomyelitis (VAPP) diagnosis; and
- monitor quality of the AFP surveillance system in general.

To enable the committee to classify as accurately as possible:

- each case must have accurate, complete investigation in their case investigation form (CIF);
- a copy of the hospital clinical notes or investigations must be included in the case file;
- a copy of the death certificate should be placed in the case file, if the AFP case died;
- a 60-day follow-up form must be included with the district paediatrician's clinical note; and
- if an AFP case needs to be discussed, the district surveillance team must gather all relevant documents, bring these to the committee meeting, and present the case.

Preparations for the committee meeting need to be planned in advanced to ensure required details are available for review.

- If the child has monoplegia, arrange for electromyography (EMG) or nerve conduction study (NCS) to be done before the NPEC meets and bring written results to meeting for discussion.
- Full information should be made available of any underlying conditions or past medical history that may have bearing on illness causing paralysis.
- A written clinical note from paediatrician describing 60-day follow-up exam with emphasis on the neurological examination is necessary for most cases.

How to present cases to the committee:

1. History of the illness
    - Presence of fever and other symptoms at onset
    - Description of progression of illness
    - Hospital course, including investigations results
2. Exam of child at initial presentation
    - Description of general physical exam
    - Site and extent of weakness
    - Reflexes and tone
3. Exam of child at 60-day follow-up exam
    - Detailed neurological exam

2. National Certification Committee (NCC)

National Certification Committees (NCCs) are groups of independent experts in disciplines relevant for the certification of polio eradication, such as public health, immunization, epidemiology, paediatrics, infectious diseases, neurology and virology. NCCs are appointed by the national government in consultation with regional offices of the World Health Organization (WHO). NCC members act in a personal capacity only and cannot have responsibility for any activities to implement polio eradication in the country.

NCCs are responsible for assessing and verifying national documentation on polio-free status, which is assembled by the Ministry of Health (MoH) with WHO support. NCCs cannot certify polio eradication in their country, which is the role of the Regional Certification Commission (RCC) and Global Certification Commission for the Certification of the Eradication of Poliomyelitis (GCC) in review of NCC-supporting documentation on the polio-free status of the country.

Certification, which is done at the regional level, requires the absence of WPV transmission from any source (AFP, community samples and sewage samples) for at least two (2) consecutive years and a timely and sensitive AFP surveillance that meets the GCC's certification standards and the following performance indicators:[37]

- Detection of at least one (1) NPAFP case annually per 100 000 children younger than 15 years.
- Collection of adequate stool specimens from at least 80% of AFP cases.
- Testing of all specimens at a WHO-accredited laboratory.

In WHO regions not yet certified as wild poliovirus (WPV)-free and for Member States where no WPV has been detected from any source for at least two (2) years under conditions of "certification-standard" surveillance, NCCs provide the RCC with documentation on all aspects related to polio eradication, including immunization activities, surveillance (including environmental surveillance of polio-essential facility wastewater), laboratory support, and containment.

Once the RCC formally accepts this documentation, signalling their agreement with the NCCs claim that WPV transmission in the country has been interrupted, the NCC will continue to provide annual reports to the RCC on the maintenance of polio-free status in the country.

Each NCC also conveys recommendations on how to improve polio activities from the RCC to their national government.

3. Regional Certification Commissions (RCCs)

RCCs are independent panels of international public health experts advising the WHO on all issues related to the certification of WPV eradication at the regional level. RCCs have the authority to certify the eradication of indigenous WPV in the region after considering all necessary evidence, including the views of NCCs and results of field visits to countries.

In WHO regions not yet certified as WPV-free, RCCs monitor progress towards interrupting WPV transmission and will eventually certify the WHO region as free of WPV, provided that a period of at least two (2) years have passed without identification of WPV.

In WHO regions already certified as WPV-free, RCCs annually review updated documentation from each Member State on the maintenance of WPV-free status, i.e., on immunization, surveillance, polio laboratory support and poliovirus containment. RCCs then report conclusions on risk assessment and any risk mitigation measures to the respective country and WHO Regional Director. Related to poliovirus containment, RCCs in certified regions work with NCCs to review national reports and documentation, specifically updating and maintaining complete inventories of facilities which previously hosted WPV or any other infectious or potentially infectious poliovirus materials.

4. Global Commission for the Certification of the Eradication of Poliomyelitis (GCC)

The GCC is the independent global oversight body which will issue a final report to the Director-General of the WHO (DG-WHO) to certify that the global eradication of WPV has been achieved. The GCC also oversees global poliovirus containment. It receives annual reports from RCCs on poliovirus survey and inventory activities in all six WHO regions, as reported by NCCs in their annual reports to the RCCs on the achievement or maintenance of WPV-free status.

The GCC is expected to eventually certify that global containment of all retained live poliovirus materials—including WPV, Sabin and vaccine-derived poliovirus (VDPV) of all types—has been achieved and maintained. It is still yet to be decided whether the GCC will exist by the time containment of all poliovirus materials (WPV, Sabin and VDPV) will be achieved.

As of 2025, five of six WHO regions have been certified WPV free; however, as long as WPV is not eradicated, NCCs and RCCs still have a role in monitoring polio surveillance performance in their respective country and in updating the GCC.

For additional information on certification, refer to GPEI webpage on Post-Polio World (https://polioeradication.org/who-we-are/polio-endgame-strategy-2019-2023/securing-a-lasting-polio-free-world/).

Annex 18. Surveillance activities in outbreak settings

The following is a checklist of surveillance strengthening activities during a poliovirus outbreak. Details are included in Strengthening Polio Surveillance during a Poliovirus Outbreak.

AFP surveillance

- ✓ Immediately notify surveillance and laboratory personnel upon polio outbreak confirmation.
- ✓ Increase the annualized non-polio acute flaccid paralysis (NPAFP) rate target to > 3 per 100,000 children <15 years old per year.
- ✓ All districts and provinces should review and update (if necessary) their polio surveillance reporting network, including prioritization of reporting sites for active surveillance visits.
- ✓ Ensure active surveillance (AS) visits are conducted regularly and monitored nationwide.
- ✓ Ensure that routine (passive) surveillance is performing optimally.
- ✓ Conduct facility-based, ad hoc active case searches to identify any unreported cases of acute flaccid paralysis (AFP).
- ✓ Use all opportunities for community-based, ad hoc active case searches to identify any unreported cases.
- ✓ Verify that special populations within the outbreak-affected, high-risk, and capital city areas are included in surveillance activities and implement tailored approaches, as necessary.
- ✓ Ensure that surveillance officers receive appropriate supportive supervision and their activities are sufficiently monitored.
- ✓ Monitor surveillance performance and use data for action.
- ✓ Prioritize investigation of silent districts or provinces within the outbreak-affected or high-risk areas.
- ✓ Establish regular mechanisms of communication with AFP surveillance partners.

AFP case investigation

- ✓ Collect key information that may not be included in the AFP case investigation form.
- ✓ Verity that AFP contact sampling for all AFP cases with inadequate stool specimens is conducted and consider expanding AFP contact sampling for all AFP cases in certain outbreak and polio high-risk settings.
- ✓ Prioritize completion of 60-day follow-up investigations for AFP cases with inadequate stool specimens.

Capacity building and sensitization activities

- ✓ Conduct re-fresher trainings on polio and polio surveillance for surveillance officers and focal points.
- ✓ Conduct AFP surveillance sensitization activities among healthcare providers.
- ✓ Conduct polio and AFP surveillance sensitization activities among communities.
- ✓ Conduct polio and AFP surveillance sensitization activities among governmental and nongovernmental organizations and engage their support.

Environmental surveillance

- ✓ Identify geographic scope of existing environmental surveillance (ES) sites and determine if adequate for monitoring the outbreak
- ✓ Determine the performance and sensitivity of existing ES sites.
- ✓ Maintain the frequency of specimen collection to monthly; or increase to every 2 weeks depending on the context and in coordination with the laboratory.
- ✓ Identify high-risk areas where additional ES activities during an outbreak may be needed, including the use of “ad hoc” ES sites.

Laboratory surveillance

- ✓ Establish regular, ongoing communication mechanisms among surveillance and laboratory personnel at all levels
- ✓ Prioritize testing of samples according to geographic area and sample source.

- ✓ Verify that stool specimens and sewage samples are collected as recommended and reverse cold chain is maintained from point of collection to arrival at a WHO-accredited laboratory.
- ✓ Review the timeliness of sample shipment from point of collection to arrival in the lab and ensure no batching of specimens to avoid delays.
- ✓ Adjust stool and sewage sample transport networks, as necessary, to ensure a well-coordinated and rapid delivery system is maintained.
- ✓ Ensure laboratory resources are available to meet the demand for increased testing and that a contingency plan is available to ensure capacity can be rapidly increased, if necessary.

Additional considerations

- ✓ Do not implement targeted healthy children stool sampling for strengthening polio surveillance; it has no use.
- ✓ Include surveillance updates in the national Polio Outbreak Situation Report (SitRep).
- ✓ Prepare for GPEI's Outbreak Response Assessment (OBRAs).

Annex 19. Scientific resources

Table A19.1. Resources to support surveillance for acute flaccid paralysis (AFP)

Focus area	Resources
Programme information	• Global Polio Eradication Initiative (GPEI): polioeradication.org The GPEI website includes updated global counts on wild and vaccine derived poliovirus cases. • Global Polio Eradication Initiative (GPEI): Resource Hub: https://polioeradication.org/resource-hub/ For additional polio publications on topics such as surveillance, outbreaks, and testing, as well as special topics such as on containment, visit the following website: • Morbidity and Mortality Weekly Report (MMWR): www.cdc.gov/mmwr/index.html • Weekly Epidemiological Record (WER): https://www.who.int/publications/journals/weekly-epidemiological-record
AFP surveillance	• Global Polio Eradication Initiative Resource Hub for Surveillance: https://polioeradication.org/resource-hub/?rh_tools=surveillance-resources&rh_policy_and_report_types=&rh_multimedia=&rh_sort= • Global Polio Surveillance Action Plan 2025-2026 https://iris.who.int/bitstream/handle/10665/382037/9789240111844-eng.pdf • Global Polio Surveillance Action Plan 2025-2026: Outputs from Polio Surveillance Subject Matter Expert Work Groups – Risks and Risk Mitigation Strategies https://polioeradication.org/wp-content/uploads/2025/01/Outputs-from-polio-surveillance-SME-work-groups-risks-and-risk-mitigation-strategies_Abridged-version.pdf • Global Polio Surveillance Action Plan 2022-2024 https://polioeradication.org/wp-content/uploads/2022/05/GPSAP-2022-2024-EN.pdf • Global Polio Surveillance Action Plan 2018-2020 https://polioeradication.org/wp-content/uploads/2024/09/GPEI-global-polio-surveillance-action-plan-2018-2020-EN-1.pdf • Guidelines for Implementing Polio Surveillance in Hard-to-Reach Areas & Populations polioeradication.org/wp-content/uploads/2020/10/Guidelines-polio-surveillance-H2R-areas.pdf • Best practices in active surveillance for polio surveillance polioeradication.org/wp-content/uploads/2018/12/Best-practices-in-active-surveillance-for-polio-eradication.pdf • Guidelines for Implementing Poliovirus Surveillance among Patients with Primary Immunodeficiency Disorders (PIDs) https://polioeradication.org/wp-content/uploads/2022/06/Guidelines-for-Implementing-PID-Suveillance_EN.pdf • Classification and reporting of vaccine-derived polioviruses (VDPV). polioeradication.org/wp-content/uploads/2016/09/Reporting-and-Classification-of-VDPVs_Aug2016_EN.pdf
Community-based surveillance	• Technical Contributors to the June 2018 WHO meeting. A definition for community-based surveillance and a way forward: results of the WHO global technical meeting, France, 26 to 28 June 2018. Euro Surveill. 2019;24(2): pii=1800681. doi.org/10.2807/1560-7917.ES.2019.24.2.1800681
Poliovirus testing	• Department of Immunization, Vaccines, and Biologicals (2004) WHO Polio Laboratory Manual 4th ed. Geneva, Switzerland: World Health Organization. WHO/IVB/04.10. apps.who.int/iris/bitstream/handle/10665/68762/WHO_IVB_04.10.pdf

Outbreak response	• Quick Reference on Strengthening Polio Surveillance during a Poliovirus Outbreak (under revision, consult the GPEI Resource Hub for Surveillance for the most up to date version (web address under AFP surveillance)). • Poliovirus Outbreak Response Assessment (OBRA) Aide-Mémoire Version 5 (2025) https://polioeradication.org/wp-content/uploads/2024/05/Polio-Outbreak-Response-Assessment-Aide-Memoire-version-5-20251111.pdf • Standard Operating Procedures: Responding to a Polio Event or Outbreak (under revision, consult the GPEI Resource Hub for outbreak preparedness and response for the most up to date version: https://polioeradication.org/resource-hub/?rh_tools=outbreak-preparedness-and-response)
Gender training	For general information on GPEI's efforts on Gender Mainstreaming: https://polioeradication.org/what-we-do-2/gender-mainstreaming/ • Gender and Polio Introductory Training: Facilitation Guide polioeradication.org/wp-content/uploads/2022/06/Gender-and-polio-introductory-training-facilitation-guide-20220620.pdf • Gender and Polio Introductory Training: Presentation Slides polioeradication.org/wp-content/uploads/2022/06/Presentation-Gender-and-Polio-Training.pdf • Gender and Polio profile polioeradication.org/wp-content/uploads/2022/06/Gender-and-Polio-Profile-20220620.pdf
VPD surveillance	• Surveillance standards for vaccine-preventable diseases, 2nd ed. Geneva: World Health Organization; 2018. www.who.int/publications/i/item/surveillance-standards-for-vaccine-preventable-diseases-2nd-edition • Surveillance standards for vaccine-preventable diseases - Poliomyelitis, 2nd ed. Geneva: World Health Organization; 2018. https://cdn.who.int/media/docs/default-source/immunization/vpd_surveillance/vpd-surveillance-standards-publication/who-surveillancevaccinepreventable-18-polio-r3.pdf?sfvrsn=aa96984f_28&download=true • Global strategy for comprehensive Vaccine-Preventable Disease (VPD) surveillance. www.who.int/publications/m/item/global-strategy-for-comprehensive-vaccine-preventable-disease-(vpd)-surveillance