

JOB AID: Use of AFP contact sampling and targeted healthy children stool sampling

The **purpose and use of collecting stool specimens** for (1) AFP contact sampling and (2) targeted healthy children stool sampling are different and should be well understood to ensure that limited resources are used efficiently and effectively.

AFP contact sampling

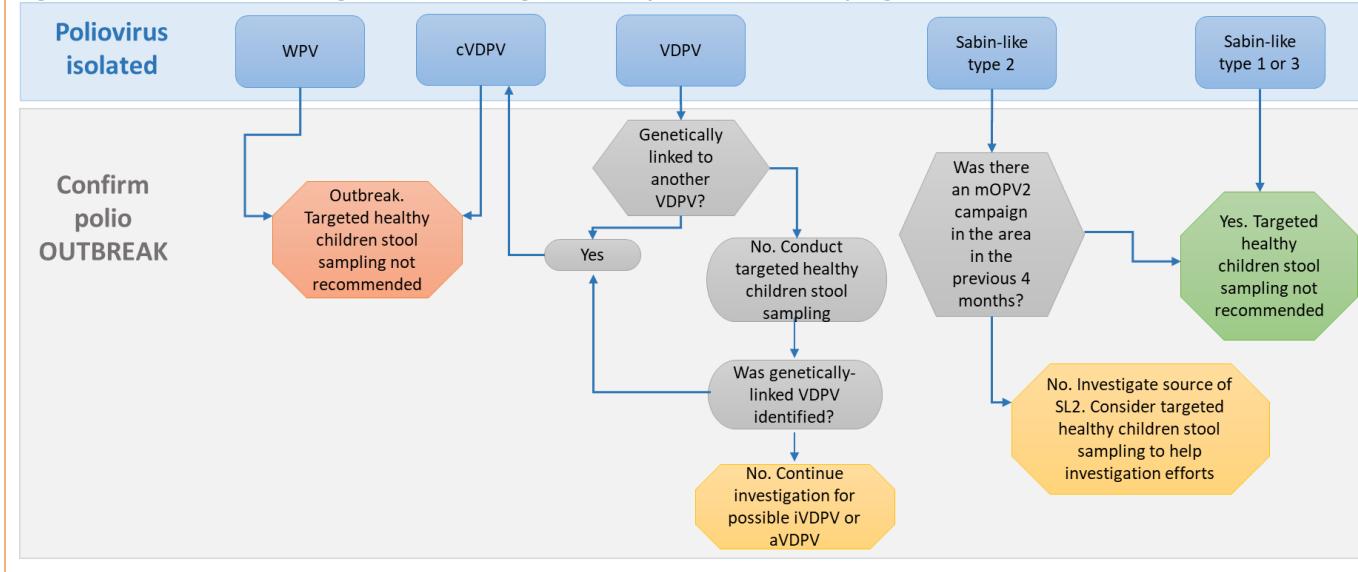
Also known as	Direct contact sampling and close contact sampling
Definition	<p>The collection and testing of one (1) stool specimen from three (3) individuals in contact with an AFP case. Children with frequent contact with an AFP case (e.g., touching, sharing toys, and sharing food) should be identified for specimen collection. Surveillance guidelines recommend:</p> <ul style="list-style-type: none"> • Children, preferably <5 years of age. • In contact with an AFP case within the week prior to and/or two weeks after paralysis onset. • Examples include siblings and other children living in the same household and/or neighboring children who played with the AFP case during the period of interest. • Stool specimens from contacts of an AFP case may be collected up to 60 days after paralysis onset, as poliovirus may be excreted up to two months and sometimes 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	<p>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.</p>
Indications	<p>AFP contact sampling should be performed as part of regular AFP surveillance activities. Expanded use of AFP contact sampling may also be done as part of outbreak response activities.</p> <ul style="list-style-type: none"> • Regular AFP surveillance activities: Recommendations per the Global Polio Surveillance Action Plan 2018-2020 for AFP contact sampling: <ul style="list-style-type: none"> ○ 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. <ul style="list-style-type: none"> ○ All AFP cases in an outbreak-affected country, to improve detection of all viruses ○ 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. Because laboratory results cannot be used to guide surveillance or outbreak response activities, collection of stool specimens is not recommended from contacts of individuals with following classifications: (1) WPV, aVDPV, cVDPV, unclassified VDPV, polio compatible, SL2 positive; (2) poliovirus positive contacts of AFP cases; and/or (3) poliovirus positive healthy children.

Additional important information	
When to conduct	<p>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).</p> <ul style="list-style-type: none"> • <u>Initial AFP case investigation</u>: Conduct AFP contact sampling if it is known that two stool specimens cannot be collected in a timely manner. • <u>Follow-up activity</u>: 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 <u>not</u> 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	Refer to the GPEI Global Polio Surveillance Action Plan 2018-2020 for further details. (http://polioeradication.org/wp-content/uploads/2016/07/GPEI-global-polio-surveillance-action-plan-2018-2020-EN.pdf)

Targeted healthy children stool sampling

Also known as	Healthy children sampling, community stool sampling, and community sampling
Definition	<p>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 <u>not</u> had contact with the confirmed poliovirus case should be targeted for specimen collection. Surveillance guidelines recommend:</p> <ul style="list-style-type: none"> • 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 or two weeks after paralysis onset (i.e., not a contact). • Healthy with no evidence of AFP. • Specimens collected from the same community as the positive poliovirus case, specifically in another part of the community and not an immediate neighbor.
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 during an event or outbreak investigation, specifically those situations 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 discouraged as it would be an inefficient and ineffective use of program resources. Any decision to do a targeted healthy children stool sampling should be made in close coordination and collaboration with national surveillance and laboratory colleagues.

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



Notes on indications for targeted healthy children stool sampling (see figure above)

- WPV: One case of WPV is an outbreak; therefore, a targeted healthy children stool sampling is not recommended.
- cVPV: Circulating VDPVs indicate community transmission; targeted healthy children stool sampling is not recommended.
- VPV genetically linked to another VDPV: The VDPV will be reclassified as a cVPV; targeted healthy children stool sampling is not recommended.
- VPV not genetically linked to another VDPV: A 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 cVPV case.
 - A positive VDPV result in a healthy child is also used to reclassify an existing aVPV case as a cVPV case, if viruses are genetically linked. Again, this is confirmation of community-wide transmission.
 - If no VDPV is detected among the healthy children, the investigation should continue to assess if the VDPV case is possibly an iVPV or aVPV case.
- Sabin-like 2 (SL2) virus detected within four (4) months of an mOPV2 campaign: SL2 virus detection is expected during an mOPV2 campaign; targeted healthy children stool sampling is not recommended.
- Sabin-like 2 (SL2) virus detected more than four (4) months after last mOPV2 campaign, or no recent mOPV2 campaign: In these instances, an investigation to the source of the SL2 virus is warranted – and targeted healthy children stool sampling may be considered to help guide investigation efforts.
- Sabin-like 1 or 3 virus: Detection of Sabin-like 1 and 3 virus is expected given bOPV use in routine 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 AFP contact sampling).

Additional important information

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 <u>not</u> 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	Refer to the GPEI Global Polio Surveillance Action Plan 2018-2020 for further details. (http://polioeradication.org/wp-content/uploads/2016/07/GPEI-global-polio-surveillance-action-plan-2018-2020-EN.pdf)