

The World Health Organization (WHO)-led Global Polio Laboratory Network (GPLN) continues to play an essential role in global polio eradication, and periodic efforts to quantify its overall value provide important information that helps to motivate financial support for GPLN laboratories. Assessing the value of the GPLN is of utmost importance at this stage of the GPEI, as the partners discuss the strategies to maintain polio laboratory functions pre- and post-certification of wild poliovirus eradication and global containment of live polioviruses. This GPLN survey aims to collect data on activities and costs of all of the GPLN laboratories to support an overall synthesis. The objectives of this survey include to: (1) update estimates of the total costs of the GPLN reported based on a [similar 2003 survey](#), (2) better understand the different cost components, including environmental surveillance, and (3) characterize the extent to which the GPLN contributes to surveillance of other diseases. The survey form should take approximately 60 minutes to complete, and we expect that collecting data and calculating some of the costs may take an additional 1-4 hours, depending on the size and complexity of the laboratory. Please start the survey as soon as possible, so if you have any questions or if you need to compile data, you will have time to do so. The survey includes questions about acute flaccid paralysis (AFP) surveillance (i.e., stool samples from AFP cases and contacts) and environmental surveillance (i.e., sewage samples).

Please note:

- we pre-filled some answers based on data collected in GPLNMS annual reports for 2016 as of June 2017, and we ask that you please check the pre-filled answers carefully and correct the information as appropriate.
- please do not leave any answers blank, because we cannot interpret these correctly, so please enter “0” for zero, “unknown” for unknown, “not applicable” for not applicable, or “data not available” or other appropriate text. If you find any question too difficult to answer, please do not quit the entire question or survey, but instead reply with “unable to answer” and please add any information that can help us understand the reason.

We provided a [glossary](#) to promote consistent interpretation of survey language. If you have any questions, please contact Dr. Radboud Duintjer Tebbens (Kid Risk), at [rdt@kidrisk.org](mailto:rdt@kidrisk.org) and Dr. Ousmane Diop (WHO), [diopo@who.int](mailto:diopo@who.int). Thank you very much for your time and effort to respond to the survey. We look forward to hearing from you - please complete your response by September 1, 2017. We will share the results with all polio laboratory directors for dissemination once they become available.

1. Please provide information about how to contact you and about your laboratory

Laboratory Name

Your Name

Phone number

Email address

City

Country

WHO Region

\* Total employee full-time equivalents (FTEs) for poliovirus surveillance employed by the laboratory

Please enter the percent (between 0-100, without the % sign) of FTEs reported for the line with the \* above supported by National/internal funds

Please enter the percent (between 0-100, without the % sign) of FTEs reported for the line with the \* above supported by GPEI external funds

Please enter the percent (between 0-100, without the % sign) of FTEs reported for the line with the \* above supported by Other external funds (non GPEI-external funds, including bi-lateral support) - This line should total 100 minus the percents on the prior 2 lines.

**Poliovirus Laboratory Survey**

Laboratory characteristics

2. What role did your laboratory play in the global polio laboratory network in 2016?

- Subnational
- National
- Regional reference
- Specialized
- Other (please specify)

3. Please list the geographic areas (country, state, region) that your laboratory served in 2016 for each laboratory capacity (enter "None" for any you do not do and please note any special activities by including the word "Special" after the name of the geographic area indicated, for example to help with overflow from another lab, if applicable for 2016):

Virus isolation	<div style="border: 1px solid black; height: 20px;"></div>
Intratypic differentiation (ITD)	<div style="border: 1px solid black; height: 20px;"></div>
Sequencing	<div style="border: 1px solid black; height: 20px;"></div>
Serology	<div style="border: 1px solid black; height: 20px;"></div>
Environmental surveillance	<div style="border: 1px solid black; height: 20px;"></div>

4. Please estimate what percentages (without including the "%" sign) of polio-supported staff time and equipment your laboratory spends on poliovirus surveillance and research activities (including methods development, serology, clinical trials, next generation or complete genome sequencing, etc.) versus surveillance and research activities for other diseases.

Poliovirus activities  
(indicate 100 here and 0 on all other answers if your lab supports poliovirus surveillance activities exclusively)

<div style="border: 1px solid black; height: 20px;"></div>	
Non-polio enteroviruses	<div style="border: 1px solid black; height: 20px;"></div>
Measles and/or rubella viruses	<div style="border: 1px solid black; height: 20px;"></div>
Rotavirus	<div style="border: 1px solid black; height: 20px;"></div>
Influenza	<div style="border: 1px solid black; height: 20px;"></div>
Japanese encephalitis	<div style="border: 1px solid black; height: 20px;"></div>
Yellow fever	<div style="border: 1px solid black; height: 20px;"></div>
Other arboviruses (e.g., Zika, dengue) or hemorrhagic fever viruses	<div style="border: 1px solid black; height: 20px;"></div>
Other (please provide percentage here and details about what this includes in Question 9)	<div style="border: 1px solid black; height: 20px;"></div>

5. Did your laboratory perform the following for poliovirus environmental surveillance in 2016 (if none indicate no for all)?

	Yes	No
Site selection	<input type="radio"/>	<input type="radio"/>
Sample collection	<input type="radio"/>	<input type="radio"/>
Sample transportation	<input type="radio"/>	<input type="radio"/>
Concentration	<input type="radio"/>	<input type="radio"/>
Virus isolation	<input type="radio"/>	<input type="radio"/>
Intratypic differentiation	<input type="radio"/>	<input type="radio"/>
Sequencing	<input type="radio"/>	<input type="radio"/>

Other (please specify)

6. Please tell us about any poliovirus serology testing you did in 2016 (if none, then enter "None" for this question).

How many serum samples did you test for poliovirus antibodies in 2016?

Approximately how many employee hours did your laboratory spend in 2016 for poliovirus serum sample processing?

What laboratory method do you use for poliovirus serology testing?

Please indicate the purpose(s) for the poliovirus serology sampling (e.g., seroprevalence assessment, support for vaccine trials, etc.)

7. Please tell us the number of samples your laboratory processed in 2016 related to other activities (i.e., non-AFP, non-poliovirus environmental surveillance, and non-poliovirus serology activities) for the following (please specify details about the methods used and your role in sample collection in Question 9)

Non-polio enterovirus surveillance

Healthy children / adult surveys (e.g., stool surveys) **that are not part of AFP surveillance**

Clinical trial support

Other (please specify the nature of these samples in Question 9)

8. What currency do you use to track laboratory costs and will you use to report costs in this survey?

9. Please specify details here if you answered "other" for Question 4 and/or 7, **please also describe any research activities conducted by your laboratory in 2016 related to polioviruses**, and please use this space to enter any other comments you would like to make related to the questions on this page.

## Poliovirus Laboratory Survey

### Acute flaccid paralysis (AFP) surveillance

10. How many samples/isolates from AFP cases and their contacts did you process in 2016?

Virus isolation	<input type="text"/>
Intratypic differentiation	<input type="text"/>
Sequencing	<input type="text"/>
Other (please enter the number here and specify the type of processing in Question 14)	<input type="text"/>

11. How many people (full-time equivalents) worked on the different steps of processing AFP samples in 2016?

Cell culture	<input type="text"/>
Virus isolation	<input type="text"/>
Intratypic differentiation	<input type="text"/>
Sequencing	<input type="text"/>
Management (including supervisors, data management, analytics, recording, and reporting)	<input type="text"/>
Other (please enter number here and specify the type of processing in Question 14)	<input type="text"/>

12. How much did your laboratory spend (in the currency you specified in Question 8) for analysis of AFP samples in 2016 for each cost category?

Personnel (costs should correspond to number of people in Question 11 plus any staff not on payroll)

Training (please exclude any costs counted in the personnel row above)

Equipment, please estimate the amortized annual cost, see Excel worksheet

Durable supplies, please estimate the amortized annual cost, see Excel worksheet

Consumable supplies attributable to each sample

Shared consumable supplies purchased by laboratory not easily attributable to each sample

Donated supplies provided by your lab to other labs (please specify the other labs you provide these to in Question 14)

Operations

Shipping/transport

Technical support (not otherwise captured)

Other (please specify in Question 14)

13. Please indicate the approximate percents of the amounts spent in Question 12 for each cost category by contribution type: 1. National/internal; 2. GPEI external; and 3. Bilateral and non-GPEI external. For example, if all support came from national sources then indicate "100; 0; 0" OR if all contributions came from the GPEI indicate "0; 100; 0" OR if approximately equal support came from each indicate "33.4; 33.3; 33.3" and please verify that the totals of all three components of the answer for each row add to 100)

Personnel	<input type="text"/>
Training	<input type="text"/>
Equipment	<input type="text"/>
Durable supplies	<input type="text"/>
Consumable supplies	<input type="text"/>
Shared consumable supplies	<input type="text"/>
Donated supplies	<input type="text"/>
Operations	<input type="text"/>
Shipping/transport	<input type="text"/>
Technical support	<input type="text"/>
Other	<input type="text"/>

14. Please specify details here about Questions 10-13 for which you answered "other" or enter any comments you would like to make related to the questions on this page.

**Poliovirus Laboratory Survey**

Poliovirus environmental surveillance

15. Did your laboratory support any poliovirus environmental surveillance or research activities in 2016 (please verify)?

- No
- Yes

**Poliovirus Laboratory Survey**

Poliovirus environmental surveillance establishment timing

16. Did your laboratory first establish its capacity to process poliovirus environmental samples between 2010 and 2016 (i.e., relatively recently)? (If yes, the survey will ask you to estimate set up costs. If your laboratory established its capacity to process environmental samples before 2010, but made significant investments in 2016 to expand its capacity, then answer yes and estimate the costs for expanding the capacity in 2016 in Question 18).

- No
- Yes

17. Please enter the dates your laboratory first began to develop the capacity to support poliovirus environmental surveillance efforts and became fully operational (if exact date unknown, please estimate month and enter "14" for day)?

Date laboratory began to develop the poliovirus ES capacity

MM      DD      YYYY

/  /

Date your lab became fully operational to support poliovirus environmental surveillance

/  /

## Poliovirus Laboratory Survey

Environmental surveillance SET UP (for capacity established AFTER 2009 OR expanded during 2016 ONLY)

18. Please estimate the costs your laboratory spent to SET UP poliovirus ES capacity between the dates you reported in Question 17 (in the currency you specified in Question 8) for each cost category.

Facility (purchase/renovation of physical facility)	<input type="text"/>
New personnel for laboratory set up	<input type="text"/>
Training	<input type="text"/>
New equipment for concentration (e.g., centrifuge, refrigerators, funnels, filtration devices, etc.)	<input type="text"/>
New equipment for expanded poliovirus processing capacity	<input type="text"/>
Durable supplies for start up	<input type="text"/>
Consumable supplies for start up	<input type="text"/>
Operations for start up	<input type="text"/>
Technical support for start up	<input type="text"/>
Other (please specify in Question 20)	<input type="text"/>

19. If you included estimates of SET UP costs in Question 18, please indicate the approximate percents of the amounts for each cost category by contribution type: 1. National/internal; 2. GPEI external; and 3. Bilateral and non-GPEI external. For example, if all support came from national sources then indicate "100; 0; 0" OR if all contributions came from the GPEI indicate "0; 100; 0" OR if approximately equal support came from each indicate "33.4; 33.3; 33.3" and please verify that the totals of all three components of the answer for each row add to 100)

Facility	<input type="text"/>
New personnel for laboratory set up	<input type="text"/>
Training for start up	<input type="text"/>
New equipment for concentration	<input type="text"/>
New equipment for expanded poliovirus processing capacity	<input type="text"/>
Durable supplies for start up	<input type="text"/>
Consumable supplies for start up	<input type="text"/>
Operations for start up	<input type="text"/>
Technical support for start up	<input type="text"/>
Other (please specify in Question 20)	<input type="text"/>

20. Please specify details here about Questions 18-19 for which you answered "other" or enter any comments you would like to make related to the questions on this page.

## Poliovirus Laboratory Survey

### Poliovirus environmental surveillance (ES) activities

21. Which organization(s) collect the poliovirus environmental samples that your laboratory receives?

22. Please enter the total number of environmental samples your laboratory received in 2016 from each of the following types of water source(s) sampled (if known). If only unknown water source(s) sampled, then please indicate the total number of environmental samples for 2016 in the second-to-last row.

Wastewater treatment plant	<input type="text"/>
Pumping station	<input type="text"/>
Open drains or canals	<input type="text"/>
Streams, rivers, or other <b>flowing</b> surface water	<input type="text"/>
Lakes, ponds or other <b>standing</b> surface water	<input type="text"/>
Access point from sewage system	<input type="text"/>
Unknown	<input type="text"/>
Other (please indicate type in Question 27)	<input type="text"/>

23. Please enter the number of environmental samples for which your laboratory took the indicated number of days between the time of sample collection and starting the process of virus isolation. Your internal data for all poliovirus ES samples should provide the sample collection date and the date your lab started sample processing.

Less than 2 days	<input type="text"/>
3 to 5 days	<input type="text"/>
6 to 10 days	<input type="text"/>
11 to 15 days	<input type="text"/>
16 to 20 days	<input type="text"/>
21 to 25 days	<input type="text"/>
26 to 30 days	<input type="text"/>
31 to 35 days	<input type="text"/>
More than 35 days	<input type="text"/>

24. How many environmental samples did your laboratory process in 2016 for each of the following?

Concentration using WHO-recommended two-phase separation	<input type="text"/>
Concentration using other methods (please specify method(s) used in Question 27)	<input type="text"/>
Virus isolation	<input type="text"/>
Intratypic differentiation	<input type="text"/>
Sequencing	<input type="text"/>
Research	<input type="text"/>
Direct detection	<input type="text"/>
Other (please specify type of processing in the comment field at the bottom of this page in Question 27)	<input type="text"/>

25. How much did your laboratory spend (in the currency you specified in Question 8) for analysis of environmental samples in 2016 (excluding any costs for SET UP that occurred in 2016, which you should have reported in Question 18) and excluding any costs already reported in Question 12 related to AFP processing that applied to processing environmental samples.

Personnel (FTEs for environmental surveillance activities)	<input type="text"/>
Training	<input type="text"/>
Equipment, please estimate the <u>amortized annual cost</u> , see Excel worksheet	<input type="text"/>
Durable supplies, please estimate the <u>amortized annual cost</u> , see Excel worksheet	<input type="text"/>
Consumable supplies	<input type="text"/>
Shared consumable supplies	<input type="text"/>
Donated supplies (please specify the other labs you provide these to in Question 27)	<input type="text"/>
Operations	<input type="text"/>
Shipping/transport	<input type="text"/>
Technical support	<input type="text"/>
Other (please specify in Question 27)	<input type="text"/>

26. Please indicate the approximate percent of the amounts spent in Question 25 for each cost category by contribution type: 1. National/internal; 2. GPEI external; and 3. Other external. For example, if all support came from national sources then indicate "100; 0; 0" OR if all contributions came from the GPEI indicate "0; 100; 0" OR if approximately equal support came from each indicate "33.4; 33.3; 33.3" and please verify that the totals of all three components of the answer for each row add to 100)

Personnel	<input type="text"/>
Training	<input type="text"/>
Equipment	<input type="text"/>
Durable supplies	<input type="text"/>
Consumable supplies	<input type="text"/>
Shared consumable supplies	<input type="text"/>
Donated supplies	<input type="text"/>
Operations	<input type="text"/>
Shipping/transport	<input type="text"/>
Technical support	<input type="text"/>
Other (please specify in Question 27)	<input type="text"/>

27. Please specify details here about Questions 21-26 for which you answered "other" or enter any comments you would like to make related to the questions on this page.

## Poliovirus Laboratory Survey

### Closing questions

28. Please list and indicate the nature and source of all in-kind contributions your laboratory receives that support AFP and/or ES sample processing (please provide a brief description that includes the amount, source, and purpose of the in-kind support). If your laboratory provides in-kind support to other laboratories, please provide details about this.

29. Did your laboratory experience any significant changes in its workload/workflow in 2016 compared to 2015, if so please describe reasons (e.g., increased/decreased AFP, contact samples, special surveys, serology or clinical trials, introduction of environmental surveillance, implementation of polio laboratory containment and GAP III requirements or other activities, and impacts of changes in financials support, etc.)?

No

Yes (please specify)

30. Does your laboratory expect to make any significant changes in its workload/workflow in the future compared to 2016, if so please describe reasons (e.g., increased/decreased AFP, contact samples, special surveys, serology or clinical trials, or other activities, introduction of environmental surveillance)?

No

Yes (please specify)

31. What other costs or issues related to poliovirus laboratories do you think we should consider? What questions should we ask that we did not ask? Please use this space to make any final comments on the survey. Thank you very much for your responses.

## Poliovirus Laboratory Survey

Final Page - Ready to Submit?

32. Are you ready to submit your completed survey?

No (if not, please make sure to select "Prev" below to go back to the prior questions)

Yes (if so, and only if so, select "Done" below, because you will not be able to make any changes after selecting "Done")