

Poliovirus Laboratory Survey

Introduction

The 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 the current 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 1) to update estimates of the total costs of the GPLN estimated using a similar survey in 2003 (published in de Gourville EM, Sangrujee N, Duintjer Tebbens RJ, Pallansch MA, Thompson KM. Global Surveillance and the value of information: The case of the global polio laboratory network. Risk Anal. 2006;26:1557-69), 2) to better understand the different cost components, including related to environmental poliovirus surveillance, 3) to better understand the extent to which the GPLN contributes to surveillance of other diseases. Assuming readily available data, the survey should take approximately 60 minutes. 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 by the GPLN annual reports for 2016 as of March 15, 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 detail that can help us understand the reason)

Thank you very much for your time and effort to respond to the survey. We look forward to hearing from you. We will share the results with all polio laboratory directors for dissemination once it becomes available.

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

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
internal/national funds

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

Please enter the percent
(between 0-100, without
the % sign) of FTEs
reported for the line with
the * above supported by
other 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 does your laboratory play in the global polio laboratory network?

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

3. Please list the geographic area (country, state, region) that your laboratory served as of the end of 2016 for each of the following as a permanent or ongoing activity (please enter "None" for any capacities you do not offer and please note any special activities for 2016 in each category by including the word "Special" after the name of the geographic area if applicable):

| | |
|----------------------------------|--|
| 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 and other surveillance activities.

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

Non-polio enteroviruses

Measles and/or rubella
viruses

Rotavirus

Influenza

Japanese encephalitis

Yellow fever

Other arboviruses (e.g.,
Zika, dengue) or
hemorrhagic fever viruses

Other (please provide
percentage here and
details about what this
includes in Question 9)

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 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)

Enterovirus surveillance

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

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 Questions 4 and 7, **please also describe the 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 AFP samples (including from contacts of AFP cases) did you process in 2016?

Virus isolation

Intratypic differentiation

Sequencing

Other (please enter the number here and specify the type of processing in Question 14)

11. How many people (full-time equivalents) do you have working on the different steps of processing AFP samples?

Cell culture

Virus isolations

Intratypic differentiation

Sequencing

Data management (including recording and reporting)

Other (please enter number here and specify the type of processing in Question 14)

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 (e.g., centrifuge, refrigerators, PCR machine, sequencer, incubators, biosafety cabinets, incubators, autoclaves, microscopes, balance, etc., please estimate the amortized annual cost, including annual maintenance costs)

Durable supplies (e.g., containers/glassware, racks, pipettes, etc., please estimate the amortized annual cost)

Consumables for sample processing purchased by laboratory (e.g., tubes, plates, growth medium, pipette tips, chemicals, and other costs attributable to each sample, etc.)

Shared consumables purchased by laboratory (e.g., bleach, gloves/PPE, paper towels, not easily attributable to each sample, etc.)

Consumables for sample processing provided by your lab to other labs (if your lab provides these, please specify the other labs you provide these to in Question 14)

Operations (e.g., utilities, security, building maintenance, etc.)

Shipping/transport (e.g.,
courier services, vehicles,
fuel, etc.)

Technical support (e.g.,
equipment maintenance
(not counted on the
Equipment line above),
consultants, etc.)

Other (please specify in
Question 14)

13. Please indicate the approximate percents of the amounts spent in Question 11 for each category supported by: 1. Internal/national contributions; 2. External contributions from the GPEI; and 3. Other non-GPEI external (including bilateral) contributions. 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 1)

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 (e.g.,
centrifuge, refrigerators,
PCR machine, sequencer,
incubators, biosafety
cabinets, incubators,
autoclaves, microscopes,
balance, etc., please
estimate the amortized
annual cost, including
annual maintenance
costs)

Durable supplies (e.g.,
containers/glassware,
racks, pipettes, etc.,
please estimate the
amortized annual cost)

Consumables for sample
processing purchased by
laboratory (e.g., tubes,
plates, growth medium,
pipette tips, chemicals,
and other costs
attributable to each
sample, etc.)

Shared consumables purchased by laboratory (e.g., bleach, gloves/PPE, paper towels, not easily attributable to each sample, etc.)

Consumables for sample processing provided by your lab to other labs (if your lab provides these, please specify the other labs you provide these to in Question 14)

Operations (e.g., utilities, security, building maintenance, etc.)

Shipping/transport (e.g., courier services, vehicles, fuel, etc.)

Technical support (e.g., equipment maintenance (not counted on the Equipment line above), consultants, etc.)

Other (please specify in Question 14)

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.

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

No

Yes

Poliovirus Laboratory Survey

Poliovirus environmental surveillance establishment timing

16. Did your laboratory establish its capacity to process poliovirus environmental surveillance samples during or after 2010?

No

Yes

17. Please enter the dates your laboratory 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 |
|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> |

Date your lab became fully operational to support poliovirus environmental surveillance

| | | |
|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> |
|----------------------|----------------------|----------------------|

Poliovirus Laboratory Survey

Poliovirus environmental surveillance SET UP

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).

Facility

(purchase/renovation of physical facility)

New personnel for laboratory set up

Training (exclude any personnel costs included in the row above)

New equipment for concentration (e.g., centrifuge, refrigerators, funnels, filtration devices, etc.)

New equipment for expanded poliovirus processing capacity (e.g., centrifuge, refrigerators, PCR machine, sequencer, incubators, biosafety cabinets, incubators, autoclaves, microscopes, balance)

Durable supplies for start up (e.g., containers/glassware, racks, pipettes, etc., please estimate the amortized annual cost)

Consumables for sample processing purchased by laboratory (e.g., tubes, plates, growth medium, pipette tips, chemicals, and other costs attributable to each sample, etc.)

Operations for start up (e.g., utilities, security, building maintenance, etc.)

Technical support for start up (e.g., consultants, etc.)

Other (please specify in the comment field at the bottom of the page in Question 20)

19. If you included estimates of SET UP costs in Question 18, please indicate the approximate percent of the amounts spent for each category supported by: 1. Internal/national contributions; 2. External contributions from the GPEI; and 3. Other non-GPEI external contributions (including bilateral contributions).

Facility

(purchase/renovation of physical facility)

New personnel for laboratory set up

Training (exclude any personnel costs included in the row above)

New equipment for concentration (e.g., centrifuge, refrigerators, funnels, filtration devices, etc.)

New equipment for expanded poliovirus processing capacity (e.g., centrifuge, refrigerators, PCR machine, sequencer, incubators, biosafety cabinets, incubators, autoclaves, microscopes, balance)

Durable supplies for start up (e.g., containers/glassware, racks, pipettes, etc., please estimate the amortized annual cost)

Consumables for sample processing purchased by laboratory (e.g., tubes, plates, growth medium, pipette tips, chemicals, and other costs attributable to each sample, etc.)

Operations for start up (e.g., utilities, security, building maintenance, etc.)

Technical support for start up (e.g., consultants, etc.)

Other (please specify in the comment field at the bottom of the page in Question 20)

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 surveillance 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 last row.

| | |
|---|----------------------|
| Wastewater treatment plant | <input type="text"/> |
| Pumping station | <input type="text"/> |
| Open drains, canals, or rivers (or other flowing surface water) | <input type="text"/> |
| Lakes or ponds (or other standing 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 samples for which your laboratory took the indicated number of days between the time of sample collection and starting the process of virus isolation (please compute this using your internal data for all poliovirus ES samples by first finding the difference between the sample collection date and the date your lab started sample processing for each sample and then summing the totals for each range given below).

| | |
|-------------------|----------------------|
| 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 surveillance samples/isolates 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 surveillance 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 surveillance samples - PLEASE avoid double counting of costs).

Personnel (costs should correspond to number of full-time equivalents for people needed for your laboratory to support environmental surveillance activities)

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

Equipment (e.g., centrifuge, refrigerators, PCR machine, sequencer, incubators, biosafety cabinets, incubators, autoclaves, microscopes, balance, etc., please estimate the amortized annual cost, including annual maintenance costs)

Durable supplies (e.g., containers/glassware, racks, pipettes, etc., please estimate the amortized annual cost)

Consumables for sample processing purchased by laboratory (e.g., tubes, plates, growth medium, pipette tips, chemicals, and other costs attributable to each sample, etc.)

Shared consumables purchased by laboratory (e.g., bleach, gloves/PPE, paper towels, not easily attributable to each sample, etc.)

Consumables for sample processing provided by your lab to other labs (if your lab provides these, please specify the other labs you provide these to in Question 27)

Operations (e.g., utilities, security, building maintenance, etc.)

Shipping/transport (e.g., courier services, vehicles, fuel, etc.)

Technical support (e.g., equipment maintenance (not counted on the Equipment line above), consultants, etc.)

Other (please specify in the comment field at the bottom of the page in Question 27)

26. Please indicate the approximate percent of the amounts spent in Question 25 for each category supported by: 1. Internal/national contributions; 2. External contributions from the GPEI; and 3. Other non-GPEI external contributions (including bilateral contributions).

Personnel costs

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

Equipment (e.g., centrifuge, refrigerators, PCR machine, sequencer, incubators, biosafety cabinets, incubators, autoclaves, microscopes, balance, etc., please estimate the amortized annual cost)

Durable supplies (e.g., containers/glassware, racks, pipettes, etc., please estimate the amortized annual cost)

Consumables for sample processing purchased by laboratory (e.g., tubes, plates, growth medium, pipette tips, chemicals, and other costs attributable to each sample, etc.)

Shared consumables purchased by laboratory (e.g., bleach, gloves/PPE, paper towels, not easily attributable to each sample, etc.)

Consumables for sample processing provided by your lab to other labs (if your lab provides these, please specify the other labs you provide these to in Question 27)

Operations (e.g., utilities, security, building maintenance, etc.)

Shipping/transport (e.g., courier services, vehicles, fuel, etc.)

Technical support (e.g., equipment maintenance, consultants, etc.)

Other (please specify in the comment field at the bottom of the page in Question 27)

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, or other activities, introduction of environmental surveillance)?

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.