Questionnaire for National MoH (other than disease program)

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Roles and responsibilities*	1. Which departments within the MoH are involved in polio eradication and which role does each play?	MoH department names and roles/responsibilities for each	
		2. Please provide name and contact details of the primary person within the MoH responsible for polio eradication	Name and email and/or phone no.	
		3. Which departments within the MoH are involved with polio specimen referrals?	MoH department names and roles/responsibilities for each	
		4. Please provide name and contact details of the primary person within the MoH responsible for polio specimen referrals	Name and email and/or phone no.	
		5. Are there other diseases besides polio that are managed under the same program as polio? Please describe	Disease program + open-ended	
	Partners and other stakeholders	6. Who are the main implementing partners that support polio eradication in-country? Please include their associated current/relevant projects	Partner org names and projects for each	
		7. Who are the main implementing partners that support polio specimen referrals specifically? Please include their associated current and relevant projects	Partner org names and projects for each	
		8. Are there any other stakeholders that you haven't mentioned yet involved in polio eradication?	Stakeholder names and roles/responsibilities for each	
	Policies and guidance	9a. Do you have guidelines for national polio surveillance? If so, can you please share a copy?	Y/N + possibly doc	
		9b. If you answered yes to question 9a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
		10a. Do you have guidelines for specimen referrals (does not have to be polio-specific)? If so, can you please share a copy?	Y/N + possibly doc	
		10b. If you answered yes to question 10a, do the guidelines cover polio specimens?	Y/N	
		10c. If you answered yes to question 10a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
		11. Are there any other policy, strategy, guidelines or implementation plans related to polio eradication or specimen referrals that you could share?	Y/N + possibly doc	
		12. Are there any policy, strategy, or implementation plans for the national laboratory that you could share?	Y/N + possibly doc	
	Coordination, communication, management	13a. Are there any technical working group (TWG)s that would cover the topic of polio specimen referrals? If so, please describe.	Y/N + open-ended	
		13b. If you answered yes to question 13a, how often does the TWG meet and who are the members? Are there written terms of reference (TORs)?	Frequency (per unit of time), member names + Y/N	
		13c. If you answered no to question 13a, are there any regular MOH-led meetings with stakeholders to discuss and review performance of polio eradication, including specimen referrals? If so, how often?	Y/N + frequency (per unit of time)	
		14. Is there a routine review meeting to review polio eradication activities? If so, how often	Y/N + frequency (per unit of time)	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
Network design	*Facility mapping and diagnostic network optimization*	3. Is there a GIS located health facility database? If not, is there an alternative ministry department or body responsible for this?	Y/N + open-ended	
		20. Has there been any general (non polio-specific) diagnostic network optimization done in-country? If so, please describe and list any disease programs and partners involved	Y/N + open-ended + name of disease programs/partners	
	Other SRSs and integration	1. Is the polio SRS integrated with other specimen-types/diseases? (Y/N) If Yes, which ones are also included?	Y/N + specimen types/diseases	
		2. Is there a national SRS? If so, please describe which programs it serves, what part(s) of the country it covers, and how it is supported. Who is the best contact if we wanted to learn more?	Y/N + disease programs + regions + support + name/email or ph#	
		3. How are specimens referred for TB testing? Who funds TB specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		4. How are specimens referred for HIV testing and monitoring? Who funds HIV specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		5. How are specimens referred for other diseases under surveillance? Who funds these other specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		6. Have any emergency networks been set up in the past such as for Ebola or any disease outbreak specimens to be referred to the national level? If so, please describe	Y/N + open-ended	
		7. Are there any specimen referral or polio-related activities under the Global Health Security Agenda in country? If so, please describe	Y/N + open-ended	
		8. What are the major barriers to integrating the polio SRS with other disease programs	Open-ended	
		9. Do you have a list of referral linkages for any other disease programs (e.g. what facility refers to what lab for what test)? If so, please provide	Y/N + possibly doc	
	Route optimization	10. Has there ever been any route optimisation modelling carried out? If so, please describe including who supported	Y/N + open-ended including org name	
	Transport and logistics	1. Are there detailed road network maps available? If so, please provide	Y/N + possibly doc	
		2. Is there a map or table that lists estimated driving times/distances between most/all towns in the country? If so, please provide	Y/N + possibly doc	
		3. Are there any areas that are insecure or difficult to access? If so, which areas?	Y/N + regions	

		4. Does public transport (bus, minibus, etc.) cover most of the country/regions? Please describe.	Y/N + open-ended	
		5. What private sector courier companies are present in-country?	Names of companies	
		6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
	Equipment and supplies	1. Are the specimen collection containers consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	
		3. Do the cooler boxes belong to a specific facility? Are there any challenges with receiving cooler boxes back for the next shipment? When was the last time you experienced any delays/gaps? Please explain	Y/N + Y/N + open-ended	
		4. Do you have access to ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Do you have any temperature monitoring devices for in transit? If so, which ones?	Y/N + device name	
Inputs	*Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)*	12. Is there a Lab information management system (LIMS) in country? If so, what does it cover (e.g. disease, tiers of laboratory system, geographic coverage)?	Y/N + disease programs + tiers + regions	
		14. What level of telecommunications connectivity exists across health facilities at central, regional and primary levels (mobile networks, internet, wireless…)?	Open-ended	
	Financing, budget	1. Who pays for sample transportation? Do you know what their annual budget is? Where more than one, please provide details for each	Name of org + Y/N + annual budget + open-ended	
		2. Who are the main donors that support polio eradication in-country? Please include their associated current and relevant projects	Donor org names and projects for each	
		3. Who are the main donors that support specimen referrals? Please include their associated current and relevant projects	Donor org names and projects for each	
		4. What is the annual budget of the polio specimen referral system?	Amount in local currency or US Dollars	
		5. How much does the polio specimen referral system cost on an annual basis?	Amount in local currency or US Dollars	
		6. What are the major gaps in funding the polio specimen referral system?	Open-ended	
		8. What is the financial contribution of the national government to the polio SRS? Please explain	Amount in local currency or US Dollars + open-ended	
		9. Is there a plan for financial sustainability of the polio SRS or polio surveillance? If so, please provide. Who within the MoH is in charge of financial sustainability for the polio SRS and polio surveillance?	Y/N + possibly doc + name of MoH contact	
		10. What are the main financial sustainability challenges/threats to the polio SRS?	Open-ended	
Outputs	*Timeliness*	2. What is the target time between when the specimen is collected to when the specimen reaches the initial testing lab?	Number of days/hours	
		4. What is the target time between when the result is available to when the result reaches the requesting facility/clinican	Number of days/hours	
		6. How long does it take for your samples to reach the sequencing laboratory?	Number of days/hours	
		7. What is the target time between when the specimen leaves the NRL to when the specimen reaches the sequencing lab?	Number of days/hours	
		8. How long does it take you to get the result back from the sequencing laboratory (from the time that you sent the specimen)?	Number of days/hours + Y/N + open-ended	
		9. What is the target time between when a sequencing result is available to when the result reaches the NRL	Number of days/hours	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for Disease Control Programs

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Roles and responsibilities*	1. Which departments within the MoH are involved in polio eradication and which role does each play?	MoH department names and roles/responsibilities for each	
		2. Please provide name and contact details of the primary person within the MoH responsible for polio eradication	Name and email and/or phone no.	
		3. Which departments within the MoH are involved with polio specimen referrals?	MoH department names and roles/responsibilities for each	
		4. Please provide name and contact details of the primary person within the MoH responsible for polio specimen referrals	Name and email and/or phone no.	
		5. Are there other diseases besides polio that are managed under the same program as polio? Please describe	Disease program + open-ended	
	Partners and other stakeholders	6. Who are the main implementing partners that support polio eradication in-country? Please include their associated current/relevant projects	Partner org names and projects for each	
		7. Who are the main implementing partners that support polio specimen referrals specifically? Please include their associated current and relevant projects	Partner org names and projects for each	
		8. Are there any other stakeholders that you haven't mentioned yet involved in polio eradication?	Stakeholder names and roles/responsibilities for each	
	Policies and guidance	9a. Do you have guidelines for national polio surveillance? If so, can you please share a copy?	Y/N + possibly doc	
		9b. If you answered yes to question 9a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
		10a. Do you have guidelines for specimen referrals (does not have to be polio-specific)? If so, can you please share a copy?	Y/N + possibly doc	
		10b. If you answered yes to question 10a, do the guidelines cover polio specimens?	Y/N	
		10c. If you answered yes to question 10a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
		11. Are there any other policy, strategy, guidelines or implementation plans related to polio eradication or specimen referrals that you could share?	Y/N + possibly doc	
	Coordination, communication, management	13a. Are there any technical working group (TWG)s that would cover the topic of polio specimen referrals? If so, please describe.	Y/N + open-ended	
		13b. If you answered yes to question 13a, how often does the TWG meet and who are the members? Are there written terms of reference (TORs)?	Frequency (per unit of time), member names + Y/N	
		13c. If you answered no to question 13a, are there any regular MOH-led meetings with stakeholders to discuss and review performance of polio eradication, including specimen referrals? If so, how often?	Y/N + frequency (per unit of time)	
		14. Is there a routine review meeting to review polio eradication activities? If so, how often	Y/N + frequency (per unit of time)	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
	Polio surveillance structure	1a. Can you please describe the polio surveillance system in the country?	Open-ended	
		1c. Can you please provide a copy of the case investigation form?	Doc	
		1d. Can you please describe how environmental surveillance works for polio?	Open-ended	
		3. Is there a GIS located health facility database? If not, is there an alternative ministry department or body responsible for this?	Y/N + open-ended	
		4. Please describe any differences in regional/district performance, especially areas that require additional focus	Open-ended	
		5. What are the main challenges of the polio surveillance system?	Open-ended	
	Polio laboratory network	1. Are there any polio labs located within the country? If so, please provide names and location of laboratories, and which analysis is available at those labs	Y/N + names, locations and test menus for each lab	
		1a. If you answered yes to question 1, What types of instruments and testing capacity does the polio (ITD) lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		1b. If you answered yes to question 1, How many facilities does the polio (ITD) lab serve? Do you have a list of those facilities (if so, please share)	Number + names of facilities	
		2. What types of specimens are accepted for polio detection/ITD? (Choices are stool (AFP and contact samples) and whatever specimen type is used for ES)	Stool, the sample type for ES, or both	
		3. Is there enough lab (ITD) capacity to meet minimum standards? And any increased surveillance or outbreak activity? Please explain	Y/N + Y/N + open-ended	
		4. Does the polio (ITD) lab also act as the reference lab for any other diseases/testing? If so, which ones?	Y/N + names of diseases	
		5. What are the days of the week/hours that the polio (ITD) lab accepts specimens?	Days of the week/hours	
		6. What are the days of the week/hours that the polio (ITD) lab tests specimens?	Days of the week/hours	
		7. Where are ITD results provided (i.e. back to the requesting facility/clinician, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		8. Are there any polio labs located outside of the country? If so, please provide names and location of laboratories, and which tests are performed at those labs	Y/N + names, locations and test menus for each lab	
		9. What types of specimens are accepted for sequencing?	Types of specimens	

		10. What types of instruments and testing capacity does the sequencing lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		11. Is there enough sequencing capacity to meet current and future demand? Please explain	Y/N + open-ended	
		12. Does the sequencing lab serve any other countries? If so, which ones?	Y/N + open-ended	
		13. What are the days of the week/hours that the sequencing lab accepts specimens?	Number + names of facilities	
		14. What are the days of the week/hours that the sequencing lab sequences specimens?	Days of the week/hours	
		15. Where are sequencing results provided (i.e. back to the requesting lab, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		16. Has there been any general (non polio-specific) diagnostic network optimization done in-country? If so, please describe and list any disease programs and partners involved	Y/N + open-ended + name of disease programs/partners	
		17. Will the polio lab accept specimens from private health facilities? If so, is there a charge for testing for these private facilities?	Y/N + Y/N	
		18. What are the main challenges of the polio lab network?	Open-ended	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	1. What types of specimens are collected for AFP surveillance? Stool only?	Types of specimens + Y/N	
		2. How/where are the specimens kept after they are collected from the patient but before they are transported? Specifically where within the facility and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how AFP specimens are referred to the testing laboratory	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the lab for testing? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that a specimen collected from a confirmed case reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time as AFP specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Does the health facility send specimens anyway even if more than 3 days has elapsed? Do you contact the patient to collect a new sample?	Open-ended + Y/N +Y/N + Y/N	
Network design		10. Are there situations where the specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Do patients ever need to travel anywhere to have their specimen collected? If so, please describe	Y/N + open-ended	
		12. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		13. Are there any regions of the country where AFP specimen referrals are particularly challenging? If so, please note the region and explain why it's challenging	Y/N + region + open-ended	
		14. What are the main challenges of AFP specimen referrals?	Open-ended	
	Tier 1 Polio SRS for ES specimens (HF to NRL)	1. What types of specimens are collected for environmental surveillance?	Types of specimens	
		2. How/where are the ES specimens kept after they are collected but before they are transported to the lab? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how ES specimens are referred to the testing laboratory - is this the same as for AFP specimens or are they referred/transported separately?	Open-ended	
		5. Who is responsible to ensure that an ES specimen collected reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do ES specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the ES specimens or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time as ES specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed? Or would a new sample be collected instead?	Open-ended + Y/N +Y/N + Y/N	
		10. Are there situations where the ES specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		12. Are there any regions of the country where ES specimen referrals are particularly challenging? If so, please note the region and explain why it's challenging	Y/N + open-ended	
		13. What are the main challenges of ES specimen referrals?	Open-ended	
	Tier 2 Polio SRS (NRL to sequencing lab)	1. What types of specimens are sent for sequencing?	Types of specimens	
		2. How/where are specimens kept at the testing lab before they are sent for sequencing? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how specimens are referred to the sequencing laboratory	Open-ended	

		4. Is there a minimum number of specimens that needs to be collected before they are referred to the sequencing lab? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that specimens reach the sequencing laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the sequencing laboratory? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens to the sequencing lab or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time to the sequencing lab? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed?	Open-ended + Y/N +Y/N + Y/N	
		10a. Are there situations where specimens are delayed during international transit (at the departure or arrival airport), and/or by customs clearance? If so, what is the procedure? Where does the samples stay until the issues are sorted?	Y/N + open-ended + location	
		10b. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		12. Please describe any challenges with shipping specimens internationally currently	Open-ended	
	Other SRSs and integration	1. Is the polio SRS integrated with other specimen-types/diseases? (Y/N) If Yes, which ones are also included?	Y/N + specimen types/diseases	
		2. Is there a national SRS? If so, please describe which programs it serves, what part(s) of the country it covers, and how it is supported. Who is the best contact if we wanted to learn more?	Y/N + disease programs + regions + support + name/email or ph#	
		5. How are specimens referred for other diseases under surveillance? Who funds these other specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		6. Have any emergency networks been set up in the past such as for Ebola or any disease outbreak specimens to be referred to the national level? If so, please describe	Y/N + open-ended	
		7. Are there any specimen referral or polio-related activities under the Global Health Security Agenda in country? If so, please describe	Y/N + open-ended	
		8. What are the major barriers to integrating the polio SRS with other disease programs	Open-ended	
	Transport and logistics	3. Are there any areas that are insecure or difficult to access? If so, which areas?	Y/N + regions	
		4. Does public transport (bus, minibus, etc.) cover most of the country/regions? Please describe.	Y/N + open-ended	
		5. What private sector courier companies are present in-country?	Names of companies	
		6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
		7. Who operates this transportation (i.e. implementing partner, professional courier, etc.)?	Names of companies/orgs	
		8. What payment method(s) are used to pay the transporter who delivers specimens to the initial testing lab? Are there any incentives? Are the payments made on time? Please describe	Payment method(s) + Y/N + Y/N + open-ended	
		9. Is there a signed contract to provide specimen transport services to the initial testing lab?	Y/N	
		10. Where are the specimens sent after collection? Do they go directly to the initial testing laboratory or have any intermediate stops?	Location + Y/N	
		11. Is there a regularly-scheduled pick-up of specimens from the collection sites (if so, please note frequency and days, i.e. once on Mondays or twice weekly on Tues/Thu) or are the specimens transported as/when necessary?	Scheduled or ad hoc + frequency/days of the week	
		11a. If you answered Yes to Q11, Do you have a printed schedule that shows which facilities send specimens on which days? If so, please provide	Y/N + possibly doc	
		11b. If you answered yes to Q11, Are these schedules met? How often do they fail? If yes, how is the communication with the health facility? What alternatives are provided, if any?	Y/N + open-ended	
		11c. If you answered yes to Q11, do you often have to change the routes from the scheduled ones? Why?	Y/N + open-ended	
		12. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles, airplane) to the ***sequencing lab***?	Vehicle types/transport modes	
		13. What payment method(s) are used to pay the transporter who delivers to the ***sequencing lab*** and are there any incentives? Please describe	Payment method(s) + Y/N + open-ended	
		14. Is there a signed contract to transport specimens to the ***sequencing lab***?	Y/N	
		15. How often are specimens sent to for ***sequencing***?	Frequency (per unit of time).	
		16. Are there specific days of the week that samples are sent to the ***sequencing lab***? If so, which days?	Y/N + days of the week	
	Equipment and supplies	1. Are the specimen collection containers consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	
		3. Do the cooler boxes belong to a specific facility? Are there any challenges with receiving cooler boxes back for the next shipment? When was the last time you experienced any delays/gaps? Please explain	Y/N + Y/N + open-ended	

Inputs		4. Do you have access to ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Do you have any temperature monitoring devices for in transit? If so, which ones?	Y/N + device name	
	Human resources and training	1. Is all triple-packaging material consistently and widely used appopriately at every level throughout the country? If not, what are the challenges?	Y/N + open-ended	
		2. Is cold chain consistently and widely used appropriately at every level throughout the country? If not, what are the challenges?	Y/N + open-ended	
		4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		5. Do the facilities follow the packaging guidelines, if they exist? Are the packaging materials readily available for the facilities to properly package? Can we please see the materials?	Y/N + Y/N + observation	
		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
		11. Can you please show us/explain how specimens are packaged for transport, including cold chain requirements?	Open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	
		5. How are samples tracked? i.e., if a specimen isn't delivered at the lab, how would you be made aware?	Open-ended	
		9. How are results tracked? i.e., if a result isn't delivered, how do you follow-up?	Open-ended	
		10. How is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Open-ended	
		11. Is there any electronic system in country to provide information/results to you directly? If so, are you connected to it?	Y/N + Y/N	
		14. What level of telecommunications connectivity exists across health facilities at central, regional and primary levels (mobile networks, internet, wireless…)?	Open-ended	
	Financing, budget	1. Who pays for sample transportation? Do you know what their annual budget is? Where more than one, please provide details for each	Name of org + Y/N + annual budget + open-ended	
		2. Who are the main donors that support polio eradication in-country? Please include their associated current and relevant projects	Donor org names and projects for each	
		3. Who are the main donors that support specimen referrals? Please include their associated current and relevant projects	Donor org names and projects for each	
		4. What is the annual budget of the polio specimen referral system?	Amount in local currency or US Dollars	
		5. How much does the polio specimen referral system cost on an annual basis?	Amount in local currency or US Dollars	
		6. What are the major gaps in funding the polio specimen referral system?	Open-ended	
		7. Are there any costs for specimen referrals to the patient? If so, how much?	Y/N + Amount in local currency or US Dollars	
		8. What is the financial contribution of the national government to the polio SRS? Please explain	Amount in local currency or US Dollars + open-ended	
		9. Is there a plan for financial sustainability of the polio SRS or polio surveillance? If so, please provide. Who within the MoH is in charge of financial sustainability for the polio SRS and polio surveillance?	Y/N + possibly doc + name of MoH contact	
		10. What are the main financial sustainability challenges/threats to the polio SRS?	Open-ended	
	Quantiative indicators from POLIS/other databases to measure coverage/access, timeliness and quality	1. Total number of health facilities in the country (end of 2021)	Number of facilities	
		2. Total number of AFP surveillance sites in the country (end of 2021)	Number of facilities/sites	
		3. Total number of ES sites in the country (end of 2021) and list of sites	Number of sites + List of sites	
		4. Number of AFP specimens collected (per month and full year 2019, 2020, 2021)	Number of specimens	
		5. Number of ES specimens collected (per month and full year 2019, 2020, 2021)	Number of specimens	
		6. Number of specimens sent to the polio (ITD) lab (per month and full year 2019, 2020, 2021)	Number of specimens	
		7. Number of unique facilities sending specimens (per month and full year 2019, 2020, 2021)	Number of facilities/sites	
		8. Number of specimens sent to the sequencing lab (per month and full year 2019, 2020, 2021)	Number of specimens	
		9. Number of polio specimens analyzed (ITD) (per month and full year 2019, 2020, 2021)	Number of specimens	
		10. Number of polio specimens sequenced (per month and full year 2019, 2020, 2021)	Number of specimens	
		11. Average number of days/hours between collection of specimen and delivery at the polio (ITD) lab (per month and full year 2019, 2020, 2021)	Number of days/hours	
		12. Average number of days/hours between pickup of specimen from testing lab to delivery at sequencing lab (per month and full year 2019, 2020, 2021)	Number of days/hours	
		13. Rejection rate at the polio (ITD) lab (per month and full year 2019, 2020, 2021)	Percentage	
		14. Rejection rate at the sequencing lab (per month and full year 2019, 2020, 2021)	Percentage	

Outputs	*Timeliness*	2. What is the target time between when the specimen is collected to when the specimen reaches the initial testing lab?	Number of days/hours	
		4. What is the target time between when the result is available to when the result reaches the requesting facility/clinican	Number of days/hours	
		6. How long does it take for your samples to reach the sequencing laboratory?	Number of days/hours	
		7. What is the target time between when the specimen leaves the NRL to when the specimen reaches the sequencing lab?	Number of days/hours	
		8. How long does it take you to get the result back from the sequencing laboratory (from the time that you sent the specimen)?	Number of days/hours + Y/N + open-ended	
		9. What is the target time between when a sequencing result is available to when the result reaches the NRL	Number of days/hours	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		3. Please describe any challenges/threats/barriers to sequencing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for WHO or Other Polio Partners

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Partners and other stakeholders*	6a. What areas of polio eradication do you support? What is your role in polio specimen referrals?	Areas of support + open-ended	
		6. Who are the main implementing partners that support polio eradication in-country? Please include their associated current/relevant projects	Partner org names and projects for each	
		7. Who are the main implementing partners that support polio specimen referrals specifically? Please include their associated current and relevant projects	Partner org names and projects for each	
	Policies and guidance	10a. Are you aware of any guidelines for specimen referrals (does not have to be polio-specific)? If so, can you please share a copy?	Y/N + possibly doc	
		10b. If you answered yes to question 10a, do the guidelines cover polio specimens?	Y/N	
		10c. If you answered yes to question 10a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
	Coordination, communication, management	13a. Are there any technical working group (TWG)s that would cover the topic of polio specimen referrals? If so, please describe.	Y/N + open-ended	
		13b. If you answered yes to question 13a, how often does the TWG meet and who are the members? Are there written terms of reference (TORs)?	Frequency (per unit of time), member names + Y/N	
		13c. If you answered no to question 13a, are there any regular MOH-led meetings with stakeholders to discuss and review performance of polio eradication, including specimen referrals? If so, how often?	Y/N + frequency (per unit of time)	
		14. Is there a routine review meeting to review polio eradication activities? If so, how often	Y/N + frequency (per unit of time)	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
	Polio surveillance structure	1a. Can you please describe the polio surveillance system in the country?	Open-ended	
		1d. Can you please describe how environmental surveillance works for polio?	Open-ended	
		3. Is there a GIS located health facility database? If not, is there an alternative ministry department or body responsible for this?	Y/N + open-ended	
		4. Please describe any differences in regional/district performance, especially areas that require additional focus	Open-ended	
		5. What are the main challenges of the polio surveillance system?	Open-ended	
	Polio laboratory network	1. Are there any polio labs located within the country? If so, please provide names and location of laboratories, and which analysis is available at those labs	Y/N + names, locations and test menus for each lab	
		1a. If you answered yes to question 1, What types of instruments and testing capacity does the polio (ITD) lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		1b. If you answered yes to question 1, How many facilities does the polio (ITD) lab serve? Do you have a list of those facilities (if so, please share)	Number + names of facilities	
		2. What types of specimens are accepted for polio detection/ITD? (Choices are stool (AFP and contact samples) and whatever specimen type is used for ES)	Stool, the sample type for ES, or both	
		3. Is there enough lab (ITD) capacity to meet minimum standards? And any increased surveillance or outbreak activity? Please explain	Y/N + Y/N + open-ended	
		4. Does the polio (ITD) lab also act as the reference lab for any other diseases/testing? If so, which ones?	Y/N + names of diseases	
		5. What are the days of the week/hours that the polio (ITD) lab accepts specimens?	Days of the week/hours	
		6. What are the days of the week/hours that the polio (ITD) lab tests specimens?	Days of the week/hours	
		7. Where are ITD results provided (i.e. back to the requesting facility/clinician, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		8. Are there any polio labs located outside of the country? If so, please provide names and location of laboratories, and which tests are performed at those labs	Y/N + names, locations and test menus for each lab	
		9. What types of specimens are accepted for sequencing?	Types of specimens	
		10. What types of instruments and testing capacity does the sequencing lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		11. Is there enough sequencing capacity to meet current and future demand? Please explain	Y/N + open-ended	
		12. Does the sequencing lab serve any other countries? If so, which ones?	Y/N + open-ended	
		13. What are the days of the week/hours that the sequencing lab accepts specimens?	Number + names of facilities	
		14. What are the days of the week/hours that the sequencing lab sequences specimens?	Days of the week/hours	
		15. Where are sequencing results provided (i.e. back to the requesting lab, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		16. Has there been any general (non polio-specific) diagnostic network optimization done in-country? If so, please describe and list any disease programs and partners involved	Y/N + open-ended + name of disease programs/partners	
		17. Will the polio lab accept specimens from private health facilities? If so, is there a charge for testing for these private facilities?	Y/N + Y/N	
		18. What are the main challenges of the polio lab network?	Open-ended	

Network design	*Tier 1 Polio SRS for AFP specimens (HF to NRL)*	***Only ask these questions if the partner is directly involved in transporting AFP specimens to the polio lab for ITD testing (more likely if the testing is done outside of the country); if not, skip to next section***		
		1. What types of specimens are collected for AFP surveillance? Stool only?	Types of specimens + Y/N	
		2. How/where are the specimens kept after they are collected from the patient but before they are transported? Specifically where within the facility and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how AFP specimens are referred to the testing laboratory	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the lab for testing? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that a specimen collected from a confirmed case reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time as AFP specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Does the health facility send specimens anyway even if more than 3 days has elapsed? Do you contact the patient to collect a new sample?	Open-ended + Y/N +Y/N + Y/N	
		10. Are there situations where the specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Do patients ever need to travel anywhere to have their specimen collected? If so, please describe	Y/N + open-ended	
		12. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		13. Are there any regions of the country where AFP specimen referrals are particularly challenging? If so, please note the region and explain why it's challenging	Y/N + region + open-ended	
		14. What are the main challenges of AFP specimen referrals?	Open-ended	
	Tier 1 Polio SRS for ES specimens (HF to NRL)	***Only ask these questions if the partner is directly involved in transporting ES specimens to the polio lab for ITD testing (more likely if the testing is done outside of the country); if not, skip to next section***		
		1. What types of specimens are collected for environmental surveillance?	Types of specimens	
		2. How/where are the ES specimens kept after they are collected but before they are transported to the lab? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how ES specimens are referred to the testing laboratory - is this the same as for AFP specimens or are they referred/transported separately?	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the lab for testing? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that an ES specimen collected reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do ES specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the ES specimens or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time as ES specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed? Or would a new sample be collected instead?	Open-ended + Y/N +Y/N + Y/N	
		10. Are there situations where the ES specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		12. Are there any regions of the country where ES specimen referrals are particularly challenging? If so, please note the region and explain why it's challenging	Y/N + open-ended	
		13. What are the main challenges of ES specimen referrals?	Open-ended	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	14. What are the main challenges of AFP specimen referrals?	Open-ended	
	Tier 1 Polio SRS for ES specimens (HF to NRL)	13. What are the main challenges of ES specimen referrals?	Open-ended	
	Tier 2 Polio SRS (NRL to sequencing lab)	1. What types of specimens are sent for sequencing?	Types of specimens	
		2. How/where are specimens kept at the testing lab before they are sent for sequencing? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how specimens are referred to the sequencing laboratory	Open-ended	

		4. Is there a minimum number of specimens that needs to be collected before they are referred to the sequencing lab? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that specimens reach the sequencing laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the sequencing laboratory? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens to the sequencing lab or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time to the sequencing lab? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed?	Open-ended + Y/N +Y/N + Y/N	
		10a. Are there situations where specimens are delayed during international transit (at the departure or arrival airport), and/or by customs clearance? If so, what is the procedure? Where does the samples stay until the issues are sorted?	Y/N + open-ended + location	
		10b. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		12. Please describe any challenges with shipping specimens internationally currently	Open-ended	
	Other SRSs and integration	1. Is the polio SRS integrated with other specimen-types/diseases? (Y/N) If Yes, which ones are also included?	Y/N + specimen types/diseases	
		2. Is there a national SRS? If so, please describe which programs it serves, what part(s) of the country it covers, and how it is supported. Who is the best contact if we wanted to learn more?	Y/N + disease programs + regions + support + name/email or ph#	
		5. How are specimens referred for other diseases under surveillance? Who funds these other specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		6. Have any emergency networks been set up in the past such as for Ebola or any disease outbreak specimens to be referred to the national level? If so, please describe	Y/N + open-ended	
		7. Are there any specimen referral or polio-related activities under the Global Health Security Agenda in country? If so, please describe	Y/N + open-ended	
		8. What are the major barriers to integrating the polio SRS with other disease programs	Open-ended	
Inputs	*Transport and logistics*	3. Are there any areas that are insecure or difficult to access? If so, which areas?	Y/N + regions	
		8. What payment method(s) are used to pay the transporter who delivers specimens to the initial testing lab? Are there any incentives? Are the payments made on time? Please describe	Payment method(s) + Y/N + Y/N + open-ended	
		9. Is there a signed contract to provide specimen transport services to the initial testing lab?	Y/N	
		12. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles, airplane) to the ***sequencing lab*** ?	Vehicle types/transport modes	
		13. What payment method(s) are used to pay the transporter who delivers to the ***sequencing lab*** and are there any incentives? Please describe	Payment method(s) + Y/N + open-ended	
		14. Is there a signed contract to transport specimens to the ***sequencing lab*** ?	Y/N	
		15. How often are specimens sent to for ***sequencing*** ?	Frequency (per unit of time).	
		16. Are there specific days of the week that samples are sent to the ***sequencing lab*** ? If so, which days?	Y/N + days of the week	
	Equipment and supplies	1. Are the specimen collection containers consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	
		3. Do the cooler boxes belong to a specific facility? Are there any challenges with receiving cooler boxes back for the next shipment? When was the last time you experienced any delays/gaps? Please explain	Y/N + Y/N + open-ended	
		4. Do you have access to ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Do you have any temperature monitoring devices for in transit? If so, which ones?	Y/N + device name	
	Human resources and training	4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
		11. Can you please show us/explain how specimens are packaged for transport, including cold chain requirements?	Open-ended	
	Data availability, flow and use, information	4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	

	systems, communication, and monitoring and assessment (M&E)	9. How are results tracked? i.e., if a result isn't delivered, how do you follow-up?	Open-ended	
		11. Is there any electronic system in country to provide information/results to you directly? If so, are you connected to it?	Y/N + Y/N	
		14. What level of telecommunications connectivity exists across health facilities at central, regional and primary levels (mobile networks, internet, wireless…)?	Open-ended	
	Financing, budget	1. Who pays for sample transportation? Do you know what their annual budget is? Where more than one, please provide details for each	Name of org + Y/N + annual budget + open-ended	
		2. Who are the main donors that support polio eradication in-country? Please include their associated current and relevant projects	Donor org names and projects for each	
		3. Who are the main donors that support specimen referrals? Please include their associated current and relevant projects	Donor org names and projects for each	
		4. What is the annual budget of the polio specimen referral system?	Amount in local currency or US Dollars	
		5. How much does the polio specimen referral system cost on an annual basis?	Amount in local currency or US Dollars	
		6. What are the major gaps in funding the polio specimen referral system?	Open-ended	
		8. What is the financial contribution of the national government to the polio SRS? Please explain	Amount in local currency or US Dollars + open-ended	
		9. Is there a plan for financial sustainability of the polio SRS or polio surveillance? If so, please provide. Who within the MoH is in charge of financial sustainability for the polio SRS and polio surveillance?	Y/N + possibly doc + name of MoH contact	
		10. What are the main financial sustainability challenges/threats to the polio SRS?	Open-ended	
Outputs	*Quantiative indicators from POLIS/other databases to measure coverage/access, timeliness and quality*	1. Total number of health facilities in the country (end of 2021)	Number of facilities	
		2. Total number of AFP surveillance sites in the country (end of 2021)	Number of facilities/sites	
		3. Total number of ES sites in the country (end of 2021) and list of sites	Number of sites + List of sites	
		4. Number of AFP specimens collected (per month and full year 2019, 2020, 2021)	Number of specimens	
		5. Number of ES specimens collected (per month and full year 2019, 2020, 2021)	Number of specimens	
		6. Number of specimens sent to the polio (ITD) lab (per month and full year 2019, 2020, 2021)	Number of specimens	
		7. Number of unique facilities sending specimens (per month and full year 2019, 2020, 2021)	Number of facilities/sites	
		8. Number of specimens sent to the sequencing lab (per month and full year 2019, 2020, 2021)	Number of specimens	
		9. Number of polio specimens analyzed (ITD) (per month and full year 2019, 2020, 2021)	Number of specimens	
		10. Number of polio specimens sequenced (per month and full year 2019, 2020, 2021)	Number of specimens	
		11. Average number of days/hours between collection of specimen and delivery at the polio (ITD) lab (per month and full year 2019, 2020, 2021)	Number of days/hours	
		12. Average number of days/hours between pickup of specimen from testing lab to delivery at sequencing lab (per month and full year 2019, 2020, 2021)	Number of days/hours	
		13. Rejection rate at the polio (ITD) lab (per month and full year 2019, 2020, 2021)	Percentage	
		14. Rejection rate at the sequencing lab (per month and full year 2019, 2020, 2021)	Percentage	
	Timeliness	2. What is the target time between when the specimen is collected to when the specimen reaches the initial testing lab?	Number of days/hours	
		4. What is the target time between when the result is available to when the result reaches the requesting facility/clinican	Number of days/hours	
		6. How long does it take for your samples to reach the sequencing laboratory?	Number of days/hours	
		7. What is the target time between when the specimen leaves the NRL to when the specimen reaches the sequencing lab?	Number of days/hours	
		8. How long does it take you to get the result back from the sequencing laboratory (from the time that you sent the specimen)?	Number of days/hours + Y/N + open-ended	
		9. What is the target time between when a sequencing result is available to when the result reaches the NRL	Number of days/hours	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		3. Please describe any challenges/threats/barriers to sequencing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for National Polio Reference Lab (if polio lab is in-country)

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Roles and responsibilities*	3. Which departments within the MoH are involved with polio specimen referrals?	MoH department names and roles/responsibilities for each	
		4. Please provide name and contact details of the primary person within the MoH responsible for polio specimen referrals	Name and email and/or phone no.	
	Partners and other stakeholders	7. Who are the main implementing partners that support polio specimen referrals specifically? Please include their associated current and relevant projects	Partner org names and projects for each	
	Policies and guidance	10a. Do you have guidelines for specimen referrals (does not have to be polio-specific)? If so, can you please share a copy?	Y/N + possibly doc	
		10b. If you answered yes to question 10a, do the guidelines cover polio specimens?	Y/N	
		10c. If you answered yes to question 10a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
		11. Are there any other policy, strategy, guidelines or implementation plans related to polio eradication or specimen referrals that you could share?	Y/N + possibly doc	
		12. Are there any policy, strategy, or implementation plans for the national laboratory that you could share?	Y/N + possibly doc	
	Coordination, communication, management	13a. Are there any technical working group (TWG)s that would cover the topic of polio specimen referrals? If so, please describe.	Y/N + open-ended	
		13b. If you answered yes to question 13a, how often does the TWG meet and who are the members? Are there written terms of reference (TORs)?	Frequency (per unit of time), member names + Y/N	
		13c. If you answered no to question 13a, are there any regular MOH-led meetings with stakeholders to discuss and review performance of polio eradication, including specimen referrals? If so, how often?	Y/N + frequency (per unit of time)	
		14. Is there a routine review meeting to review polio eradication activities? If so, how often	Y/N + frequency (per unit of time)	
		15. How is the polio SRS managed at your level of the health system?	Open-ended	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
	Polio laboratory network	1. Which analysis is available at your lab?	Test menus for (each) lab	
		1a. What types of instruments and testing capacity does your lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		1b. How many facilities does your lab serve? Do you have a list of those facilities (if so, please share)	Number + names of facilities	
		2. What types of specimens are accepted for polio detection/ITD? (Choices are stool (AFP and contact samples) and whatever specimen type is used for ES)	Stool, the sample type for ES, or both	
		3. Do you have enough lab (ITD) capacity to meet minimum standards? And any increased surveillance or outbreak activity? Please explain	Y/N + Y/N + open-ended	
		4. Does your lab also act as the reference lab for any other diseases/testing? If so, which ones?	Y/N + names of diseases	
		5. What are the days of the week/hours that your lab accepts specimens?	Days of the week/hours	
		6. What are the days of the week/hours that your lab tests specimens?	Days of the week/hours	
		7. Where are ITD results provided (i.e. back to the requesting facility/clinician, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		8. Are there any polio labs located outside of the country? If so, please provide names and location of laboratories, and which tests are performed at those labs	Y/N + names, locations and test menus for each lab	
		9. What types of specimens are accepted for sequencing?	Types of specimens	
		10. What types of instruments and testing capacity does the sequencing lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		11. Is there enough sequencing capacity to meet current and future demand? Please explain	Y/N + open-ended	
		12. Does the sequencing lab serve any other countries? If so, which ones?	Y/N + open-ended	
		13. What are the days of the week/hours that the sequencing lab accepts specimens?	Number + names of facilities	
		14. What are the days of the week/hours that the sequencing lab sequences specimens?	Days of the week/hours	
		15. Where are sequencing results provided (i.e. back to the requesting lab, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		16. Has there been any general (non polio-specific) diagnostic network optimization done in-country? If so, please describe and list any disease programs and partners involved	Y/N + open-ended + name of disease programs/partners	
		17. Will your lab accept specimens from private health facilities? If so, is there a charge for testing for these private facilities?	Y/N + Y/N	
		18. What are the main challenges of the polio lab network?	Open-ended	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	10. Are there situations where the specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		12. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		14. What are the main challenges of AFP specimen referrals?	Open-ended	

Network design	*Tier 1 Polio SRS for ES specimens (HF to NRL)*	10. Are there situations where the ES specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		13. What are the main challenges of ES specimen referrals?	Open-ended	
	Tier 2 Polio SRS (NRL to sequencing lab)	5. Who is responsible to ensure that specimens reach the sequencing laboratory?	Name of person or dept/unit	
		Proceed with the following questions only if in-country NRL is responsible for transporting specimens to the international sequencing lab; if not, skip to next		
		1. What types of specimens are sent for sequencing?	Types of specimens	
		2. How/where are specimens kept before they are sent for sequencing? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how specimens are referred to the sequencing laboratory	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the sequencing lab? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		6. Are there any intermediate stops on the way to the sequencing laboratory? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens to the sequencing lab or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time to the sequencing lab? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed?	Open-ended + Y/N +Y/N + Y/N	
		10a. Are there situations where specimens are delayed during international transit (at the departure or arrival airport), and/or by customs clearance? If so, what is the procedure? Where does the samples stay until the issues are sorted?	Y/N + open-ended + location	
		10b. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		12. Please describe any challenges with shipping specimens internationally currently	Open-ended	
	Other SRSs and integration	1. Is the polio SRS integrated with other specimen-types/diseases? (Y/N) If Yes, which ones are also included?	Y/N + specimen types/diseases	
		2. Is there a national SRS? If so, please describe which programs it serves, what part(s) of the country it covers, and how it is supported. Who is the best contact if we wanted to learn more?	Y/N + disease programs + regions + support + name/email or ph#	
		3. How are specimens referred for TB testing? Who funds TB specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		4. How are specimens referred for HIV testing and monitoring? Who funds HIV specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		5. How are specimens referred for other diseases under surveillance? Who funds these other specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		6. Have any emergency networks been set up in the past such as for Ebola or any disease outbreak specimens to be referred to the national level? If so, please describe	Y/N + open-ended	
		7. Are there any specimen referral or polio-related activities under the Global Health Security Agenda in country? If so, please describe	Y/N + open-ended	
		8. What are the major barriers to integrating the polio SRS with other disease programs	Open-ended	
		9. Do you have a list of referral linkages for any other disease programs (e.g. what facility refers to what lab for what test)? If so, please provide	Y/N + possibly doc	
		10. Has there ever been any route optimisation modelling carried out? If so, please describe including who supported	Y/N + open-ended including org name	
	Transport and logistics	6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
		7. Who operates this transportation (i.e. implementing partner, professional courier, etc.)?	Names of companies/orgs	
		Proceed with the following questions only if in-country NRL is responsible for transporting specimens to the international sequencing lab; if not, skip to next		
		12. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles, airplane) to the ***sequencing lab*** ?	Vehicle types/transport modes	
		14. Is there a signed contract to transport specimens to the ***sequencing lab*** ?	Y/N	
		15. How often are specimens sent to for ***sequencing*** ?	Frequency (per unit of time).	
		16. Are there specific days of the week that samples are sent to the ***sequencing lab*** ? If so, which days?	Y/N + days of the week	
	Equipment and supplies	***This set of questions is asking about equipment and supplies available to the collection facilities , not at the national polio lab; the next section on HR/training will ask about proper use of the equipment and supplies***		
		1. Are the specimen collection containers consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	

Inputs		3. Do the cooler boxes belong to a specific facility? Are there any challenges with receiving cooler boxes back for the next shipment? When was the last time you experienced any delays/gaps? Please explain	Y/N + Y/N + open-ended	
		4. Is there enough access to ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Are temperature monitoring devices available for in transit? If so, which ones?	Y/N + device name	
		6. Have the collection facilities and/or transporters been provided with any biosafety equipment, including a spill kit? Please list which equipment each has	Y/N + equipment list for transporters and collection facilities	
		This set of questions is asking about equipment and supplies available at the national polio lab; the next section on HR/training will ask about proper use of the equipment and supplies		
		1. What specimen containers are used to send isolates to the sequencing lab? Are they consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Open-ended + Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	
		3. What do you use as the outer (tertiary) packaging? Are these containers returned to you? Do you have any challenges with that return? Please explain	Y/N + Y/N + Y/N + open-ended	
		4. Do you have enough ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Are temperature monitoring devices available for in transit? If so, which ones?	Y/N + device name	
		6. Do you have any biosafety equipment onsite, including a spill kit? Please list which equipment you have	Y/N + equipment list	
	Human resources and training	1. Is all triple-packaging material consistently and widely **used appopriately** by the collection facilities? If not, what are the challenges?	Y/N + open-ended	
		2. Is cold chain consistently and widely used appropriately in the country? If not, what are the challenges?	Y/N + open-ended	
		4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		5. Do the facilities follow the packaging guidelines, if they exist? Are the packaging materials readily available for the facilities to properly package? Can we please see the materials?	Y/N + Y/N + observation	
		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
		11. Can you please show us/explain how specimens are packaged for international transport, including cold chain requirements?	Open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		2. What data collection tools do you have onsite to monitor these indicators? Can you please show us?	Open-ended + possibly docs	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	
		5. How are samples tracked? i.e., if a specimen isn't delivered at the lab, how would you be made aware?	Open-ended	
		8. Can you communicate by phone with every facility that you serve, or are there some facilities that do not have mobile coverage?	Y/N + open-ended	
		9. How are results tracked? i.e., if a result isn't delivered, how do you follow-up?	Open-ended	
		10. How is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Open-ended	
		12. Is there a Lab information management system (LIMS) in country? If so, what does it cover (e.g. disease, tiers of laboratory system, geographic coverage)?	Y/N + disease programs + tiers + regions	
		13. Do you have access to the LIMS at this lab?	Y/N	
		14. What level of telecommunications connectivity exists across health facilities at central, regional and primary levels (mobile networks, internet, wireless…)?	Open-ended	
	Financing, budget	6. What are the major gaps in funding the polio specimen referral system?	Open-ended	
	Timeliness	2. What is the target time between when the specimen is collected to when the specimen reaches the initial testing lab?	Number of days/hours	
		4. What is the target time between when the result is available to when the result reaches the requesting facility/clinican	Number of days/hours	
		6. How long does it take for your samples to reach the sequencing laboratory?	Number of days/hours	
		7. What is the target time between when the specimen leaves the NRL to when the specimen reaches the sequencing lab?	Number of days/hours	

Outputs		8. How long does it take you to get the result back from the sequencing laboratory (from the time that you sent the specimen)?	Number of days/hours + Y/N + open-ended	
		9. What is the target time between when a sequencing result is available to when the result reaches the NRL	Number of days/hours	
	Quality	1. Based on temperature conditions as specified by the manufacturer for each test, do the specimens require cold chain? If so, which specimens specifically? If so, do transport conditions fall within those requirements on a regular basis? If not, do you think the temperature control negatively affects the results of the analysis?	Y/N + Specimen Types + Y/N + Y/N	
		2. How often do you reject specimens received from peripheral facilities? What are the most common reasons for rejection? How do you notify the facilities of the rejection?	Frequency (per unit of time) + reasons + notification method	
		3. Do you have any way of monitoring if packages are lost or damaged in transit (even if the specimens are accepted)? If so, please describe/please show us.	Y/N + open-ended/possibly doc	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		3. Please describe any challenges/threats/barriers to sequencing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for Sub-National Health Management Teams

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Roles and responsibilities*	2. Please provide name and contact details of the primary person within the sub-national health management team (HMT) responsible for polio eradication	Name and email and/or phone no.	
		4. Please provide name and contact details of the primary person within the HMT responsible for polio specimen referrals	Name and email and/or phone no.	
	Partners and other stakeholders	7. Who are the main implementing partners that support polio specimen referrals specifically? Please include their associated current and relevant projects	Partner org names and projects for each	
	Coordination, communication, management	13a. Are there any technical working group (TWG)s that would cover the topic of polio specimen referrals? If so, please describe.	Y/N + open-ended	
		13b. If you answered yes to question 13a, how often does the TWG meet and who are the members? Are there written terms of reference (TORs)?	Frequency (per unit of time), member names + Y/N	
		13c. If you answered no to question 13a, are there any regular MOH-led meetings with stakeholders to discuss and review performance of polio eradication, including specimen referrals? If so, how often?	Y/N + frequency (per unit of time)	
		14. Is there a routine review meeting to review polio eradication activities? If so, how often	Y/N + frequency (per unit of time)	
		15. How is the polio SRS managed at your level of the health system?	Open-ended	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
Network design	*Polio surveillance structure*	1a. Can you please describe the polio surveillance system?	Open-ended	
		1d. Can you please describe how environmental surveillance works for polio?	Open-ended	
		2. What are the most common diseases under surveillance that you encounter?	Names of diseases	
		4. Please describe any differences in regional/district performance, especially areas that require additional focus	Open-ended	
		5. What are the main challenges of the polio surveillance system?	Open-ended	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	1. What types of specimens are collected for AFP surveillance?	Types of specimens	
		2. How/where are the specimens kept after they are collected from the patient but before they are transported? Specifically where within the facility and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how AFP specimens are referred to the testing laboratory	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the lab for testing? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that a specimen collected from a confirmed case reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time as AFP specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Does the health facility send specimens anyway even if more than 3 days has elapsed? Do you contact the patient to collect a new sample?	Open-ended + Y/N +Y/N + Y/N	
		10. Are there situations where the specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Do patients ever need to travel anywhere to have their specimen collected? If so, please describe	Y/N + open-ended	
		12. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		13. Are there any regions of the country where AFP specimen referrals are particularly challenging? If so, please note the region and explain why it's challenging	Y/N + region + open-ended	
		14. What are the main challenges of AFP specimen referrals?	Open-ended	
	Tier 1 Polio SRS for ES specimens (HF to NRL)	1. What types of specimens are collected for environmental surveillance?	Types of specimens	
		2. How/where are the ES specimens kept after they are collected but before they are transported to the lab? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how ES specimens are referred to the testing laboratory - is this the same as for AFP specimens or are they referred/transported separately?	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the lab for testing? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that an ES specimen collected reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do ES specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the ES specimens or are they sent on their own?	Accompany or sent on own	

		8. Are there any other specimens referred/transported at the same time as ES specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed? Or would a new sample be collected instead?	Open-ended + Y/N +Y/N + Y/N	
		10. Are there situations where the ES specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		12. Are there any regions of the country where ES specimen referrals are particularly challenging? If so, please note the region and explain why it's challenging	Y/N + open-ended	
		13. What are the main challenges of ES specimen referrals?	Open-ended	
	Other SRSs and integration	1. Is the polio SRS integrated with other specimen-types/diseases? (Y/N) If Yes, which ones are also included?	Y/N + specimen types/diseases	
		3. How are specimens referred for TB testing? Who funds TB specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		4. How are specimens referred for HIV testing and monitoring? Who funds HIV specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		5. How are specimens referred for other diseases under surveillance? Who funds these other specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
		6. Have any emergency networks been set up in the past such as for Ebola or any disease outbreak specimens to be referred to the national level? If so, please describe	Y/N + open-ended	
		8. What are the major barriers to integrating the polio SRS with other disease programs	Open-ended	
		9. Do you have a list of referral linkages for any other disease programs (e.g. what facility refers to what lab for what test)? If so, please provide	Y/N + possibly doc	
Inputs	*Transport and logistics*	1. Are there detailed road network maps available? If so, please provide	Y/N + possibly doc	
		2. Is there a map or table that lists estimated driving times/distances between most/all towns? If so, please provide	Y/N + possibly doc	
		3. Are there any areas that are insecure or difficult to access? If so, which areas?	Y/N + regions	
		4. Does public transport (bus, minibus, etc.) cover most of the country/regions? Please describe.	Y/N + open-ended	
		5. What private sector courier companies are present in-country?	Names of companies	
		6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
		7. Who operates this transportation (i.e. implementing partner, professional courier, etc.) to the initial testing lab?	Names of companies/orgs	
		10. Where are the specimens sent after collection? Do they go directly to the initial testing laboratory or have any intermediate stops?	Location + Y/N	
		11. Is there a regularly-scheduled pick-up of specimens from the collection sites (if so, please note frequency and days, i.e. once on Mondays or twice weekly on Tues/Thu) or are the specimens transported as/when necessary?	Scheduled or ad hoc + frequency/days of the week	
		11a. If you answered Yes to Q11, Do you have a printed schedule that shows which facilities send specimens on which days? If so, please provide	Y/N + possibly doc	
		11b. If you answered yes to Q11, Are these schedules met? How often do they fail? If yes, how is the communication with the health facility? What alternatives are provided, if any?	Y/N + open-ended	
		11c. If you answered yes to Q11, do you often have to change the routes from the scheduled ones? Why?	Y/N + open-ended	
	Equipment and supplies	1. Are the specimen collection containers consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	
		3. Do the cooler boxes belong to a specific facility? Are there any challenges with receiving cooler boxes back for the next shipment? When was the last time you experienced any delays/gaps? Please explain	Y/N + Y/N + open-ended	
		4. Do you have access to ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Do you have any temperature monitoring devices for in transit? If so, which ones?	Y/N + device name	
	Human resources and training	1. Is all triple-packaging material consistently and widely used appopriately at every level throughout the country? If not, what are the challenges?	Y/N + open-ended	
		2. Is cold chain consistently and widely used appropriately at every level throughout the country? If not, what are the challenges?	Y/N + open-ended	
		4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		5. Do the facilities follow the packaging guidelines, if they exist? Are the packaging materials readily available for the facilities to properly package? Can we please see the materials?	Y/N + Y/N + observation	

		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		7. Are health professionals changing very often? If so, is that a challenge? Please describe	Y/N + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
		10. Have you been provided with sample rejection criteria? If so, please may we see?	Y/N + possibly doc	
		11. Can you please show us/explain how AFP and ES specimens are packaged for transport, including cold chain requirements?	Open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		2. What data collection tools do you have onsite to monitor these indicators? Can you please show us?	Open-ended + possibly docs	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	
		5. How are samples tracked? i.e., if a specimen isn't delivered at the lab, how would you be made aware?	Open-ended	
		8. Can you communicate by phone with every facility that you serve, or are there some facilities that do not have mobile coverage?	Y/N + open-ended	
		9. How are results tracked? i.e., if a result isn't delivered, how do you follow-up?	Open-ended	
		10. How is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Open-ended	
		11. Is there any electronic system in country to provide information/results to you directly? If so, are you connected to it?	Y/N + Y/N	
		14. What level of telecommunications connectivity exists across health facilities at central, regional and primary levels (mobile networks, internet, wireless…)?	Open-ended	
	Financing, budget	6. What are the major gaps in funding the polio specimen referral system?	Open-ended	
		7. Are there any costs for specimen referrals to the patient? If so, how much?	Y/N + Amount in local currency or US Dollars	
		10. What are the main financial sustainability challenges/threats to the polio SRS?	Open-ended	
Outputs	*Timeliness*	2. What is the target time between when the specimen is collected to when the specimen reaches the initial testing lab?	Number of days/hours	
		4. What is the target time between when the result is available to when the result reaches the requesting facility/clinican	Number of days/hours	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for Referring/Collection Facility Staff (sites that refer specimens to an outside laboratory)

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Coordination, communication, management*	15. How is the polio SRS managed at your level of the health system?	Open-ended	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
Network design	*Polio surveillance system*	1b. Can you please describe what happens when a patient presents at your health facility with possible AFP?	Open-ended	
		2. What are the most common diseases under surveillance that you encounter?	Names of diseases	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	1. What types of specimens are collected for AFP surveillance?	Types of specimens	
		2. How/where are the specimens kept after they are collected from the patient but before they are transported? Specifically where within the facility and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how AFP specimens are referred to the testing laboratory	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the lab for testing? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that a specimen collected from a confirmed case reaches the laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the testing laboratory (i.e. do specimens have to stop at district or provincial/regional levels on their way)? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time as AFP specimens? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Does the health facility send specimens anyway even if more than 3 days has elapsed? Do you contact the patient to collect a new sample?	Open-ended + Y/N +Y/N + Y/N	
		10. Are there situations where the specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stays until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Do patients ever need to travel anywhere to have their specimen collected? If so, please describe	Y/N + open-ended	
		12. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		14. What are the main challenges of AFP specimen referrals?	Open-ended	
	Other SRSs and integration	1. Is the polio SRS integrated with other specimen-types/diseases? (Y/N) If Yes, which ones are also included?	Y/N + specimen types/diseases	
	Transport and logistics	6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
		7. Who operates this transportation (i.e. implementing partner, professional courier, etc.)?	Names of companies/orgs	
		11. Is there a regularly-scheduled pick-up of specimens from the collection sites (if so, please note frequency and days, i.e. once on Mondays or twice weekly on Tues/Thu) or are the specimens transported as/when necessary?	Scheduled or ad hoc + frequency/days of the week	
		11a. If you answered Yes to Q11, Do you have a printed schedule that shows which facilities send specimens on which days? If so, please provide	Y/N + possibly doc	
		11b. If you answered yes to Q11, Are these schedules met? How often do they fail? If yes, how is the communication with the health facility? What alternatives are provided, if any?	Y/N + open-ended	
		11c. If you answered yes to Q11, do you often have to change the routes from the scheduled ones? Why?	Y/N + open-ended	
	Equipment and supplies	1. Are the specimen collection containers consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		2. What do you use for secondary packaging? Is that material consistently and widely available throughout the country? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Packaging type + Y/N + open-ended	
		3. Do the cooler boxes belong to a specific facility? Are there any challenges with receiving cooler boxes back for the next shipment? When was the last time you experienced any delays/gaps? Please explain	Y/N + Y/N + open-ended	
		4. Do you have access to ice packs? If not, what are the challenges? What do you do if you are out of stock? When was the last time you experienced any delays/gaps?	Y/N + open-ended	
		5. Do you have any temperature monitoring devices for in transit? If so, which ones?	Y/N + device name	
		6. Have you been provided with any biosafety equipment, including a spill kit? Please list which equipment you have	Y/N + equipment list	
	Human resources and	3. Whose responsibility is it to package the specimens?	Open-ended	

Inputs	*training*	4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		7. Are health professionals changing very often? If so, is that a challenge? Please describe	Y/N + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
		10. Have you been provided with sample rejection criteria? If so, please may we see?	Y/N + possibly doc	
		11. Can you please show us/explain how specimens are packaged for transport, including cold chain requirements?	Open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		2. What data collection tools do you have onsite to monitor these indicators? Can you please show us?	Open-ended + possibly docs	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	
		5. How are samples tracked? i.e., if a specimen isn't delivered at the lab, how would you be made aware?	Open-ended	
		6. Is there a way to communicate regularly with the transporter confirming the samples were delivered (WhatsApp?) or you just assume the samples were delivered? Please describe	Way to communicate or assume delivered + open-ended	
		7. Can you communicate by phone with the laboratories that analyze your specimens?	Y/N	
		9. How are results tracked? i.e., if a result isn't delivered, how do you follow-up?	Open-ended	
		10. How is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Open-ended	
		11. Is there any electronic system in country to provide information/results to you directly? If so, are you connected to it?	Y/N + Y/N	
	Financing, budget	7. Are there any costs for specimen referrals to the patient? If so, how much?	Y/N + Amount in local currency or US Dollars	
Outputs	*Timeliness*	1. How long does it take for your samples to reach the laboratory? Do they always reach the lab the same day that you have collected the sample from the patient? Is it a challenge to get the sample to the lab? If so, please explain	Number of days/hours + Y/N + Y/N + open-ended	
		2. What is the target time between when the specimen is collected to when the specimen reaches the initial testing lab?	Number of days/hours	
		3. How long does it take you to get the result back from the laboratory (from the time that you collected the sample from the patient)? Is it a challenge to get the result back from the lab? If so, please explain	Number of days/hours + Y/N + open-ended	
		4. What is the target time between when the result is available to when the result reaches the requesting facility/clinican	Number of days/hours	
		5. How long does it take you to get the result to the patient (from the time that you received the result)? Is it a challenge to get the result back to the patient? If so, please explain	Number of days/hours + Y/N + open-ended	
	Quality	4. How often are your specimens rejected by the laboratory? What are the most common reasons for rejection? Are you notified by the lab of the rejection?	Frequency (per unit of time) + reasons + notification method	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for Transporter (Individual or Company)

The purpose of the questionnaire is to provide additional information on specimen transportation and results reporting directly from the transporter or from the manager of a specimen transport system. A Referral Laboratory is one that receives any specimen for testing and/or onward referral. A Referring Facility (or collection site) is one that collects specimens clients and sends to another laboratory for processing and testing.

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Network design	*Coverage*	Number of referring facilities (collection sites) covered by the specimen transport system	Number of facilities/sites	
		Number of referral laboratories covered	Number of labs	
		Number of specimens referred per month (if known)	Number of specimens/month	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	Do you have a set schedule? If so, is it printed and shared with the referral laboratories and referring facilities?	Y/N + Y/N	
		If you have a set schedule, do you often have to deviate from it? Why and how often does this happen?	Y/N + open-ended	
		How often are the specimens picked up from referring facilities?	Frequency (if set schedule) or as necessary	
		Do you ever have a problem with the specimens being ready for pickup when you arrive?	Y/N	
		Do you pickup any other specimens besides polio specimens or items from the referring facilities at the same time? If yes, please be specific on what else you pick up.	Y/N + list of other items	
		Does the referral laboratory give a specific cut off time by which all specimens need to be delivered? If so, do you ever have any problems arriving before that time and why?	Y/N + open-ended	
		10. Are there situations where the AFP specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		10. Are there situations where the ES specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		10. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		Do you have any challenges dropping of the specimens at the referral laboratory? If so, please list.	Y/N + list of challenges	
		Do you deliver paper results back to referring facilities? If so, do you track timeliness of results deliveries, i.e. "Proportion of test results picked up by the transport service within the specified time after generation of the test result"? If so, what is the result?	Y/N + Y/N	
	Tier 2 Polio SRS (NRL to sequencing lab)	10a. Are there situations where specimens are delayed during international transit (at the departure or arrival airport), and/or by customs clearance? If so, what is the procedure? Where does the	Y/N + open-ended + location	
		10b. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		12. Please describe any challenges with shipping specimens internationally currently	Open-ended	
Inputs	*Transport and logistics*	6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
		7. Who operates this transportation (i.e. implementing partner, professional courier, etc.)?	Names of companies/orgs	
		8. What payment method(s) are used to pay the transporter who delivers specimens to the initial testing lab? Are there any incentives? Are the payments made on time? Please describe	Payment method(s) + Y/N + Y/N + open-ended	
		9. Is there a signed contract to provide specimen transport services to the initial testing lab?	Y/N	
		10. Where are the specimens sent after collection? Do they go directly to the initial testing laboratory or have any intermediate stops?	Location + Y/N	
		11. Is there a regularly-scheduled pick-up of specimens from the collection sites (if so, please note frequency and days, i.e. once on Mondays or twice weekly on Tues/Thu) or are the specimens transported as/when necessary?	Scheduled or ad hoc + frequency/days of the week	
		11a. If you answered Yes to Q11, Do you have a printed schedule that shows which facilities send specimens on which days? If so, please provide	Y/N + possibly doc	
		11b. If you answered yes to Q11, Are these schedules met? How often do they fail? If yes, how is the communication with the health facility? What alternatives are provided, if any?	Y/N + open-ended	
		11c. If you answered yes to Q11, do you often have to change the routes from the scheduled ones? Why?	Y/N + open-ended	
		12. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles, airplane) to the ***sequencing lab*** ?	Vehicle types/transport modes	
		13. What payment method(s) are used to pay the transporter who delivers to the ***sequencing lab*** and are there any incentives? Please describe	Payment method(s) + Y/N + open-ended	
		14. Is there a signed contract to transport specimens to the ***sequencing lab*** ?	Y/N	
	Equipment and supplies	Do you have to use any materials to keep the specimens cold? If so, please specify how you maintain cold chain and at what temps.	Y/N + open-ended + temperatures	
	Human resources and training	Were you (the courier) trained by anyone on biosafety or quality-related issues for transport of specimens?	Y/N	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		If you have a contract, please list any performance specifications, e.g X% samples within specified turnaround time?	List of performance specifications	
		2. What data collection tools do you have onsite to monitor these indicators? Can you please show us?	Open-ended + possibly docs	
		Do you track timeliness of pickups or deliveries of specimens, i.e. "Proportion of shipments that arrive at the referral laboratory within the specified transport time"? If so, what is the result?	Y/N + results	
		Do you track quality of deliveries, i.e. "Proportion of specimens that were rejected because of factors related to inadequate or improper transport?" If so, what is the result?	Y/N + results	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		Do you have regular review meetings with labs to discuss challenges/work out solutions? Is this mandated by your contract?	Y/N + Y/N	
		5. How are samples tracked? i.e., if a specimen isn't delivered at the lab, how would you be made	Open-ended	
		7. Can you communicate by phone with the laboratories that analyze your specimens?	Y/N	
		8. Can you communicate by phone with every facility that you serve, or are there some facilities that	Y/N + open-ended	
		10. How is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Open-ended	
	Financing, budget, contracting	Do you have a contract to provide specimen transport services?	Y/N	
		Who pays for the specimen transport system?	Name of organization/company	
		5. How much does the polio specimen referral system cost on an annual basis?	Amount in local currency or US Dollars	
		10. What are the main financial sustainability challenges/threats to the polio SRS?	Open-ended	
Outputs	*Timeliness*	1. How long does it take for samples to reach the laboratory? Do they always reach the lab the same day that you pickup? Is it a challenge to get the sample to the lab? If so, please explain	Number of days/hours + Y/N + Y/N + open-ended	
		3. How long does it take you to get the result back from the laboratory (from the time that you collected the sample from the patient)? Is it a challenge to get the result back from the lab? If so, please explain	Number of days/hours + Y/N + open-ended	
	Quality	3. Do you have any way of monitoring if packages are lost or damaged in transit (even if the specimens are accepted)? If so, please describe/please show us.	Y/N + open-ended/possibly doc	
	Challenges	Do you have any other challenges with specimen/results transport?	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name of specimen transport management organization		
		Name(s), titles and organizations of people interviewed		
		Location of project		
		Name of courier company used to transport specimens		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for National Polio Reference Lab (if polio lab is in-country)

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Policies and guidance*	10a. Do you have/provide any guidance for specimen referrals (does not have to be polio-specific)? If so, can you please share a copy?	Y/N + possibly doc	
		10b. If you answered yes to question 10a, do the guidelines cover polio specimens?	Y/N	
		10c. If you answered yes to question 10a., please describe how the guidelines have been distributed and users sensitized with the content	Open-ended	
		11. Are there any other policy, strategy, guidelines or implementation plans related to polio eradication or specimen referrals that you could share?	Y/N + possibly doc	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
Network design	*Polio laboratory network*	1. Which analysis is available at your lab?	Test menus for (each) lab	
		1a. What types of instruments and testing capacity does your lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		1b. How many countries/labs does your lab serve? Do you have a list of those countries/labs (if so, please share)	Number + names of facilities/countries	
		2. What types of specimens are accepted for polio detection/ITD? (Choices are stool (AFP and contact samples) and whatever specimen type is used for ES)	Stool, the sample type for ES, or both	
		3. Do you have enough lab (ITD) capacity to meet minimum standards? And any increased surveillance or outbreak activity? Please explain	Y/N + Y/N + open-ended	
		4. Does your lab also act as the reference lab for any other diseases/testing? If so, which ones?	Y/N + names of diseases	
		5. What are the days of the week/hours that your lab accepts specimens?	Days of the week/hours	
		6. What are the days of the week/hours that your lab tests specimens?	Days of the week/hours	
		7. Where are ITD results provided (i.e. back to the requesting facility/clinician, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		8. Where you send isolates for sequencing? Please provide names and location of laboratories, and which tests are performed at those labs	Y/N + names, locations and test menus for each lab	
		9. What types of specimens are accepted for sequencing?	Types of specimens	
		13. What are the days of the week/hours that the sequencing lab accepts specimens?	Number + names of facilities	
		14. What are the days of the week/hours that the sequencing lab sequences specimens?	Days of the week/hours	
		15. Where are sequencing results provided (i.e. back to the requesting lab, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		18. What are the main challenges of the polio lab network?	Open-ended	
	Tier 1 Polio SRS for AFP specimens (HF to NRL)	10. Are there situations where the specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		12. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		14. What are the main challenges of AFP specimen referrals?	Open-ended	
	Tier 1 Polio SRS for ES specimens (HF to NRL)	10. Are there situations where the ES specimens arrive at the testing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe	Y/N + open-ended	
		13. What are the main challenges of ES specimen referrals?	Open-ended	
	Tier 2 Polio SRS (NRL to sequencing lab)	1. What types of specimens are sent for sequencing?	Types of specimens	
		2. How/where are specimens kept before they are sent for sequencing? Specifically where and please note if there is any cold chain used.	Open-ended including location	
		3. Please describe how specimens are referred to the sequencing laboratory	Open-ended	
		4. Is there a minimum number of specimens that needs to be collected before they are referred to the sequencing lab? If so, does that affect affect the timeliness? Please explain	Y/N + Y/N + open-ended	
		5. Who is responsible to ensure that specimens reach the sequencing laboratory?	Name of person or dept/unit	
		6. Are there any intermediate stops on the way to the sequencing laboratory? If so, please describe	Y/N + open-ended	
		7. Does any staff accompany the specimens to the sequencing lab or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time to the sequencing lab? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		9. If the specimens are not transported on time (i.e. if the transporter doesn't come), please describe what happens. Are the specimens destroyed after some time? If yes, how, and where? Are the specimens sent anyway even if more than 3 days has elapsed?	Open-ended + Y/N +Y/N + Y/N	
		10a. Are there situations where specimens are delayed during international transit (at the departure or arrival airport), and/or by customs clearance? If so, what is the procedure? Where does the samples stay until the issues are sorted?	Y/N + open-ended + location	

		10b. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		11. Are results sent back using the same system as for specimens? Please describe. And do you receive the sequencing results (or do they only go back to the country that submitted the specimen)?	Y/N + open-ended + Y/N	
		12. Please describe any challenges with shipping specimens internationally currently	Open-ended	
	Other SRSs and integration	***Ask the following question if this lab also accepts specimens for other disease surveillance lab analysis***		
		5. How are specimens referred for other diseases under surveillance? Who funds these other specimen referrals? Who is the best contact if we wanted to learn more?	Open-ended + name/email or ph#	
Inputs	*Transport and logistics*	6. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles) to the testing lab?	Vehicle types/transport modes	
		7. Who operates this transportation (i.e. implementing partner, professional courier, etc.)?	Names of companies/orgs	
		12. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles, airplane) to the ***sequencing lab***?	Vehicle types/transport modes	
		14. Is there a signed contract to transport specimens to the ***sequencing lab***?	Y/N	
		15. How often are specimens sent to for ***sequencing***?	Frequency (per unit of time).	
		16. Are there specific days of the week that samples are sent to the ***sequencing lab***? If so, which days?	Y/N + days of the week	
	Equipment and supplies	3. Do you return cooler boxes back where they came from for the next shipment? Are there any challenges with that? Please explain	Y/N + Y/N + open-ended	
	Human resources and training	***This set of questions is asking about HR/training for the country that sends its specimens here for polio testing (ITD)***		
		1. Is all triple-packaging material consistently and widely used appopriately? If not, what are the challenges?	Y/N + open-ended	
		2. Are cold chain and temperature monitoring consistently and widely used appropriately? If not, what are the challenges?	Y/N + open-ended	
		4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		5. Do the facilities follow the packaging guidelines, if they exist? Are the packaging materials readily available for the facilities to properly package? Can we please see the materials?	Y/N + Y/N + observation	
		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
		The question below is asking about HR/training for this lab when its sends isolates internationally to the sequencing lab		
		11. Can you please show us/explain how specimens are packaged for international transport to the sequencing lab?	Open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		2. What data collection tools do you have onsite to monitor these indicators? Can you please show us?	Open-ended + possibly docs	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	
		5. How are samples tracked? i.e., if a specimen isn't delivered at the sequencing lab, how would you be made aware?	Open-ended	
		8. Can you communicate with every lab/country that you serve? What communication mode(s) do you use?	Y/N + open-ended	
		9. How are results tracked? i.e., if a result isn't delivered, how do you follow-up?	Open-ended	
		10. How is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Open-ended	
		12. Do you have a Lab information management system (LIMS)? If so, can it transmit results to labs in your or other countries? Please explain	Y/N + Y/N + open-ended	
	Quantiative indicators to measure coverage/access, timeliness and quality	0a. Number of countries that refer specimens here for ITD analysis	Number of countries	
		0b. Number of labs that refer specimens here for ITD analysis	Number of laboratories	
		7. Number of unique facilities sending specimens (per month and full year 2019, 2020, 2021)	Number of facilities/sites	
		8. Number of polio specimens received at this lab, disaggregated by AFP and ES, if possible (per month and full year 2019, 2020, 2021)	Number of specimens	
		10. Number of polio specimens tested at this lab, disaggregated by AFP and ES, if possible (per month and full year 2019, 2020, 2021)	Number of specimens	
		12. Average number of days/hours between pickup of specimen from testing lab to delivery at sequencing lab (per month and full year 2019, 2020, 2021)	Number of days/hours	

Outputs		14. Rate of poor condition specimens received at the sequencing lab (per month and full year 2019, 2020, 2021)	Percentage	
	Timeliness	2. What is the target time between when the specimen is collected to when the specimen reaches your lab?	Number of days/hours	
		6. How long does it take for your samples/isolates to reach the sequencing laboratory?	Number of days/hours	
		7. What is the target time between when the specimen leaves your lab to when the specimen reaches the sequencing lab?	Number of days/hours	
		8. How long does it take you to get the result back from the sequencing laboratory (from the time that you sent the specimen)?	Number of days/hours + Y/N + open-ended	
		9. What is the target time between when a sequencing result is available to when the result reaches you or the country that submitted the specimen?	Number of days/hours	
	Quality	1. Based on temperature conditions as specified by the manufacturer for each test, do the specimens require cold chain? If so, which specimens specifically? If so, do transport conditions fall within those requirements on a regular basis? If not, do you think the temperature control negatively affects the results of the analysis?	Y/N + Specimen Types + Y/N + Y/N	
		2. How often do you reject specimens received ? What are the most common reasons for rejection? How do you notify the facilities of the rejection?	Frequency (per unit of time) + reasons + notification method	
		3. Do you have any way of monitoring if packages are lost or damaged in transit (even if the specimens are accepted)? If so, please describe/please show us.	Y/N + open-ended/possibly doc	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	1. Please describe any challenges/threats/barriers to case identification/confirmation and specimen collection processes	Open-ended	
		2. Please describe any challenges/threats/barriers to initial polio testing (at the laboratory)	Open-ended	
		3. Please describe any challenges/threats/barriers to sequencing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio from this country?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
		Organization/Department		
		Disease focus		

Adapted from the ASLM questionnaire found in the Specimen Referral Toolkit, ***https://stoptb.org/wg/gli/srt.asp***

Questionnaire for Sequencing Lab

Project: Assessment of Polio Specimen Referral Systems and Capabilities

Area		Question	Expected response type	Notes
Management, policies and governance	*Policies and guidance*	10a. Do you have/provide any guidance for specimen referrals (does not have to be polio-specific)? If so, can you please share a copy?	Y/N + possibly doc	
		10b. If you answered yes to question 10a, does the guidance cover polio specimens?	Y/N	
		10c. If you answered yes to question 10a., please describe how the guidance have been distributed and users sensitized with the content	Open-ended	
		11. Are there any other policy, strategy, guidelines or implementation plans related to polio eradication or specimen referrals that you could share?	Y/N + possibly doc	
	Challenges	16. What are the main challenges around management, governance and policies/guidelines for the polio specimen referral system?	Open-ended	
Network design	*Polio laboratory network*	8. Which analysis (related to polio) is available at your lab?	Test menus for (each) lab	
		12. How many countries/labs does your lab serve? Do you have a list of those facilities (if so, please share)	Number + names of facilities	
		4. Does your lab also act as the reference lab for any other diseases/testing? If so, which ones?	Y/N + names of diseases	
		9. What types of specimens are accepted for sequencing?	Types of specimens	
		10. What types of instruments and testing capacity does the sequencing lab have? Please specify how many tests per day the equipment can perform	Types of instruments and testing capacity (tests/day) for each	
		11. Is there enough sequencing capacity to meet current and future demand? Please explain	Y/N + open-ended	
		13. What are the days of the week/hours that the sequencing lab accepts specimens?	Number + names of facilities	
		14. What are the days of the week/hours that the sequencing lab sequences specimens?	Days of the week/hours	
		15. Where are sequencing results provided (i.e. back to the requesting lab, to the national disease/surveillance program, etc.) and in what format (i.e. by paper only, by paper and by email, through an LIMS, etc.)?	Return location/program + format	
		18. What are the main challenges of the polio lab network?	Open-ended	
	Tier 2 Polio SRS (NRL to sequencing lab)	1. What types of specimens are sent for sequencing?	Types of specimens	
		3. Please describe how specimens are referred to the sequencing laboratory	Open-ended	
		4. Have you noticed any batching when samples are sent to you? Please explain	Y/N + open-ended	
		7. Does any staff accompany the specimens to the sequencing lab or are they sent on their own?	Accompany or sent on own	
		8. Are there any other specimens referred/transported at the same time to the sequencing lab? If so, which specimens/for which diseases?	Y/N + types of specimens and diseases	
		10a. Are there situations where specimens are delayed during international transit (at the departure or arrival airport), and/or by customs clearance? If so, what is the procedure? Where does the samples stay until the issues are sorted?	Y/N + open-ended + location	
		10b. Are there situations where specimens arrive at the sequencing lab after its closed (arriving late to the lab at night for instance)? If so, what is the procedure? Where does the samples stay until the lab is opening again the next day?	Y/N + open-ended + location	
		12. Please describe any challenges with shipping specimens internationally currently	Open-ended	
Inputs	*Transport and logistics*	12. What transportation/vehicles are used to transport specimens (i.e. motorcycle, boat, four-wheeled vehicles, airplane) to the ***sequencing lab***?	Vehicle types/transport modes	
		14. Is there a signed contract to transport specimens to the ***sequencing lab***?	Y/N	
		15. How often do you receive specimens for ***sequencing***?	Frequency (per unit of time).	
		16. Are there specific days of the week that samples are sent to the ***sequencing lab***? If so, which days?	Y/N + days of the week	
	Human resources and training	1. Is all triple-packaging material consistently and widely used appopriately at every level throughout the country? If not, what are the challenges?	Y/N + open-ended	
		2. Is cold chain consistently and widely used appropriately at every level throughout the country? If not, what are the challenges?	Y/N + open-ended	
		4. Are you aware of any packaging guidelines or SOPs for biological specimens? If so, who is responsible for setting these policies/guidelines? Where can they be found? Can we have a copy?	Y/N + name of responsible + location + possibly doc	
		5. Do the facilities follow the packaging guidelines, if they exist? Are the packaging materials readily available for the facilities to properly package? Can we please see the materials?	Y/N + Y/N + observation	
		6. Are health workers adequately trained on how to properly collect, handle, store and package specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		8. Are transporters adequately trained on how to properly handle and transport specimens? How often are they trained? Are there training records? How is their competency assessed?	Y/N + frequency (per unit of time) + Y/N + open-ended	
		9. Are health workers and transporters trained on biosafety including what to do in the case of a spill or other incident? Please describe	Y/N + open-ended	
	Data availability, flow and use, information systems, communication, and monitoring and assessment (M&E)	1. Do you track any indicators on specimen referrals? (Y/N) If Yes, can you please provide a list of indicators and how frequently they are monitored?	Y/N + possibly doc or list/indicators + frequency of collection	
		2. What data collection tools do you have onsite to monitor these indicators? Can you please show us?	Open-ended + possibly docs	
		3. Do you report any data on specimen referrals? If so, what do you report, to whom and how frequently?	Y/N + data/indicator + name of department/org + frequency	
		4. Do supportive supervision visits examine any areas of the specimen referral or results' return process? If so, please cite which areas and how they are examined.	Y/N + areas examined + open-ended	

		5. How are samples tracked? i.e., if a specimen isn't delivered at the lab, how would you be made aware?	Open-ended	
		8. Can you communicate with every lab/country that you serve? What communication mode(s) do you use?	Y/N + open-ended	
		10. Is confidentiality and data security maintained throughout the entire specimen referral and results' return process? Please describe	Y/N + open-ended	
		12. Do you have a Lab information management system (LIMS)? If so, can it transmit results to labs in your or other countries? Please explain	Y/N + Y/N + open-ended	
Outputs	*Quantiative indicators to measure coverage/access, timeliness and quality*	0a. Number of countries that refer specimens here for sequencing	Number of countries	
		0b. Number of labs that refer specimens here for sequencing	Number of laboratories	
		7. Number of unique facilities sending specimens (per month and full year 2019, 2020, 2021)	Number of facilities/sites	
		8. Number of polio specimens received at this lab, disaggregated by AFP and ES, if possible (per month and full year 2019, 2020, 2021)	Number of specimens	
		10. Number of polio specimens sequenced at this lab, disaggregated by AFP and ES, if possible (per month and full year 2019, 2020, 2021)	Number of specimens	
		12. Average number of days/hours between pickup of specimen from *another* country to delivery at this lab (per month and full year 2019, 2020, 2021)	Number of days/hours	
		14. Rate of poor condition specimens received at this lab (per month and full year 2019, 2020, 2021)	Percentage	
	Timeliness	6. How long does it take for samples to reach the sequencing laboratory?	Number of days/hours	
		7. What is the target time between when the specimen leaves the NRL to when the specimen reaches the sequencing lab?	Number of days/hours	
		8. How long does it take to issue a result (from the time you receive the specimen)?	Number of days/hours	
		9. What is the target time between when a sequencing result is available to when the result reaches the NRL	Number of days/hours	
	Quality	1. Based on temperature conditions as specified by the manufacturer for each test, do the specimens require cold chain? If so, which specimens specifically? If so, do transport conditions fall within those requirements on a regular basis? If not, do you think the temperature control negatively affects the results of the analysis?	Y/N + Specimen Types + Y/N + Y/N	
		2. How often do you reject specimens received ? What are the most common reasons for rejection? How do you notify the facilities of the rejection?	Frequency (per unit of time) + reasons + notification method	
		3. Do you have any way of monitoring if packages are lost or damaged in transit (even if the specimens are accepted)? If so, please describe/please show us.	Y/N + open-ended/possibly doc	
	Client Satisfaction	1. Are you satisfied with the polio SRS? Please explain why or why not	Open-ended	
	Challenges	3. Please describe any challenges/threats/barriers to sequencing (at the laboratory)	Open-ended	
		4. Please describe any other challenges/threats/barriers even if they are outside of the scope of the polio SRS	Open-ended	
	Recommendations	1. What innovations or improvements have you already put in place to strengthen the polio SRS?	Open-ended	
		2. What are your recommendations for how the specimen referral and results' return processes could be improved?	Open-ended	
		3. If given unlimited resources and funding, what would you do to re-design the system?	Open-ended	
		4. What needs to be done by end of 2023 to completely eradicate polio?	Open-ended	
Contact Details		Name and title of informant		
		Email and phone		
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