

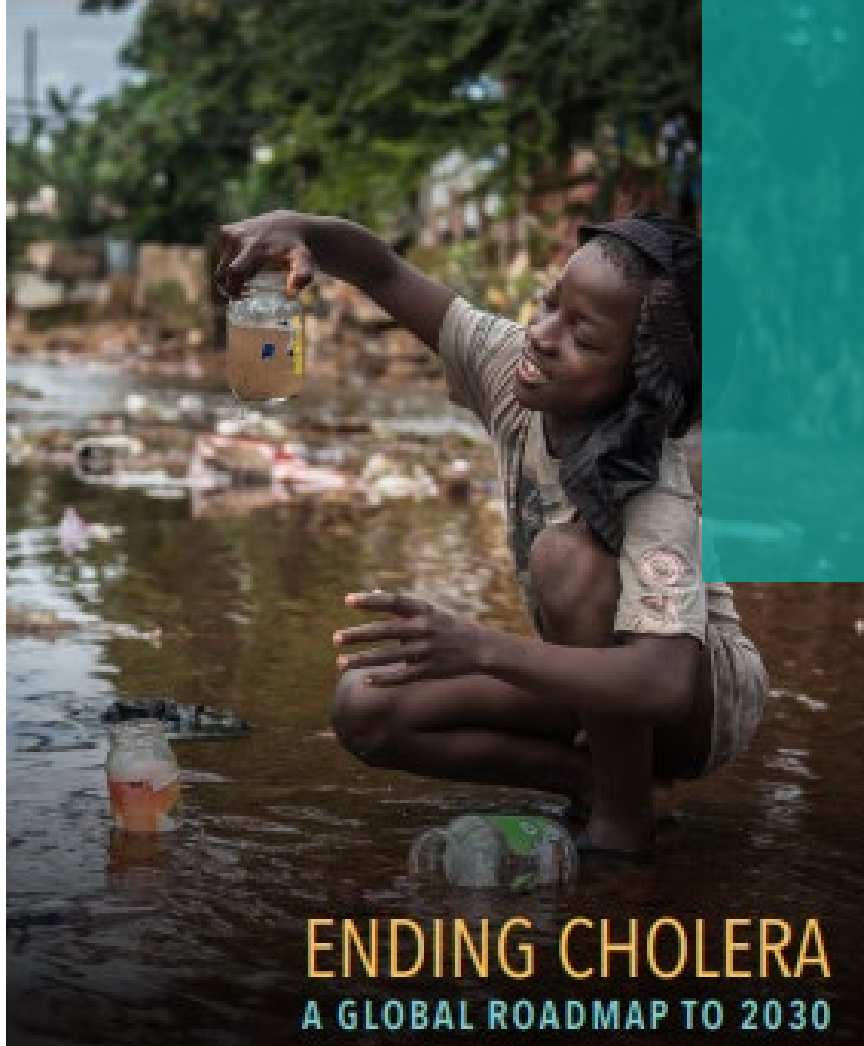


GLOBAL TASK FORCE ON
CHOLERA CONTROL

**GTCC LABORATORY WORKING GROUP:
VISION FOR LABORATORY TRAINING**

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BACKGROUND



GTFCC TRAINING SUPPORT: THE GLOBAL ROADMAP

Axis 1:

Early detection and response to contain outbreaks

Axis 2:

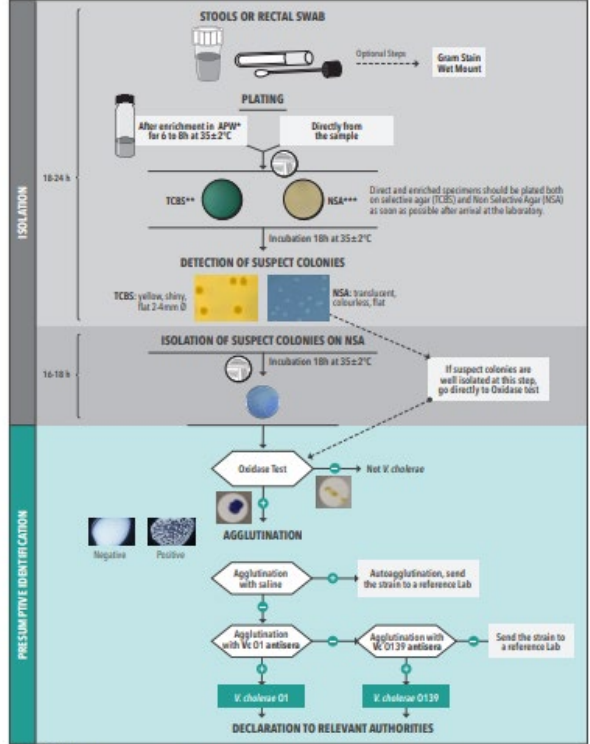
A targeted multi-sectoral approach to prevent cholera recurrence



Surveillance &
Reporting

Effective routine surveillance and laboratory capacity at the peripheral level to confirm suspected cases, inform the response, and track progress towards control and elimination

Isolation and Presumptive Identification of *Vibrio cholerae* O1/O139 from fecal specimens



APW: alkaline peptone water
 **TCBS: Thiosulfate Citrate Bile Salt medium, recommended selective agar for *Vibrio*. MacConkey agar for which *V. cholerae* strains are better adapted, is an alternative option for initial enrichment.
 ***NSA: non-selective agar, such as Brucella Medium (non-enriched), Brain Heart Infusion (BHI), or Tryptone Soy Agar.
 Note: Isolates that are serologically confirmed to be *V. cholerae* O1 should be further investigated.

WHO, 01-18-August-2012

Specimen Packaging and Domestic Transportation for Laboratory Confirmation of *Vibrio cholerae* O1/O139



FAECAL SPECIMENS CONDITIONING: 4 possible options

Use gloves and lab coats when handling samples at all times.
 Specimen Label: Carefully identify specimens and indicate (using a permanent marker) patient name, date of collection, time, location of sampling and location of patient where likely infected.
 Lab Form: Use Annex 2B - RDT case-based laboratory reporting form.*

Faecal Specimens in Stool Container	APW (alkaline peptone water)	Wet and Dry Filter Paper (WFP/DFP)	Cary Blair medium, Faecal Sample or Rectal Swab
Keep in initial stool container.	Transfer faecal material from initial container into APW tube. NOTE: The faecal material should not exceed 10% of the volume of the APW enrichment.	WET FILTER PAPER (WFP): Dip filter disc into wetting faecal material with single-use device (sterile, reusable), transfer into tube, add 2 to 3 drops of saline, close tube. DRY FILTER PAPER (DFP): Deposit one drop of wetting fluid onto filter paper. Dip dry paper before placing into individual pouch with desiccant.	For faecal samples: dip swab in liquid stool and transfer into Cary Blair medium. Rectal swabs: Place swab directly into Cary Blair. No further manipulation is required.
<small>Compatibility with testing methods (either directly from sample or after inoculation steps in APW for those marked with *):</small>			
RDT, culture, molecular analysis	RDT, culture, molecular analysis	WFP: culture, molecular analysis, RDT* DFP: molecular analysis	Culture, molecular analysis* and RDT*
MATERIAL REQUIRED			
Stool container (plastic, screw cap, 20mL, without desiccant)	APW, tubes with screw cap, transfer pipettes or syringe	WFP: Filter paper discs (2mm Ø, non-sterile), saline solution, forceps or needle, 2nd tube (screw cap) DFP: Whatman cards (763 grade) cover, FTA (Blue Micro Cards), disposable transfer pipettes, individual pouches, desiccant	Cary Blair (screw-odd, bottles/bel, wash bottles, cotton-wool)
<small>Parafilm or sealing tape to seal packages and prevent leakage (not required for dry filter paper).</small>			
CONSERVATION			
<small>Ambient temperature (ideally 22-25°C). Do not refrigerate. Keep stool container out of direct sunlight.</small>			
<small>2 hours max. If delay >2h, use Cary Blair.</small>	<small>Less than 24 hours</small>	<small>WFP: ideally less than 15 days DFP: no limitation</small>	<small>Follow manufacturer's instructions, on average 7 days</small>
DOMESTIC TRANSPORTATION (national shipment, by road)			
Primary Containers 	Absorbent Materials 	<small>Samples are categorized "biological substances" category B. The use of triple packaging with UN3373 labels are required, alternatives are chosen on the left. Samples must travel with corresponding documentation (see request form and on-line link). Include any results that may have already been performed, such as RDT results. Do not write the name of the organism on the outside of the package, only on the paperwork inside the box where appropriate. IMPORTANT: Indicate complete address and phone number for sender and recipient. Inform recipient laboratory about upcoming arrival of samples. TRANSPORT AT AMBIENT TEMPERATURE WHO, April 2011 <small>Annex 2B: Specimen Shipment request form. https://www.who.int/cholera/collaboration/20110428/20110428-Specimen-Shipment-Form_2011_04.pdf</small></small>	
Secondary Container 	Tertiary Containers 		

Resources – Global Task Force on Cholera Control (gtfcc.org)

Job aids, fact sheets

- RDT, AST, Isolation/identification, Specimen transport / packaging, strain conditioning

Technical guidelines

- surveillance guidance / adaptive testing strategy, reporting guidance / template

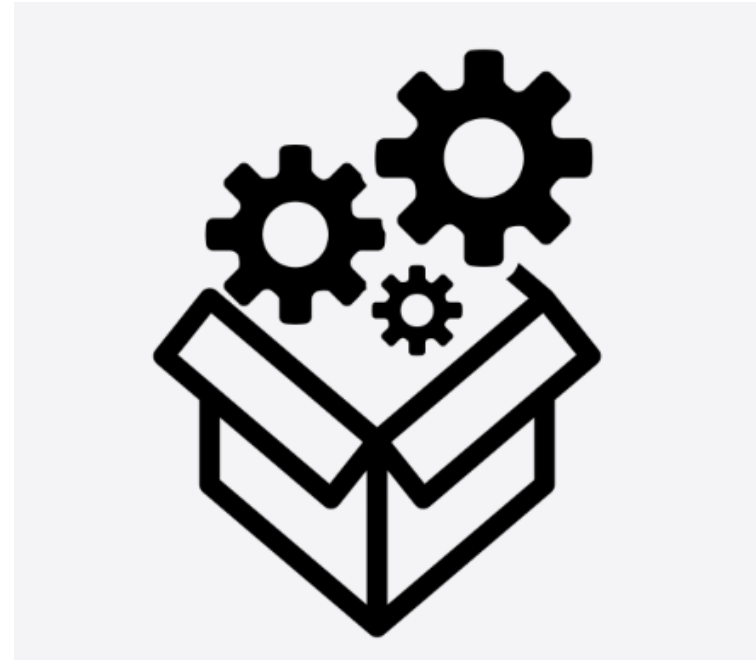
GTFCC LABORATORY TRAINING SUPPORT – CURRENTLY AVAILABLE RESOURCES

GTFCC TRAINING SUPPORT – FUTURE RESOURCES

GTFCC Laboratory Training Package

- Develop standardized material
 - (Presentations, training plans, checklists, etc.,)
- Package available via GTFCC website
- Online training courses (OpenWHO)
- Laboratories and stakeholders can access and use the materials as needed

What else can GTFCC do to support laboratory training?



BENEFITS OF LABORATORY TRAINING

- **Build increased capacity for lab confirmation**
- **Improve ability to inform decision making**
- Promote accuracy and consistency for testing and reporting results
- Support the development of staff / increase competence
- Improve staff preparedness and response
- Improve quality of the test system
- Better confidence in results

WHAT ARE THE KEY TRAINING TOPICS?

- Cholera basics (e.g., disease, pathogen, response, etc.)
 - Context can be broad or very specific
 - Detail will depend on the audience
- Specimen collection, preservation and transport
- Adaptive testing strategy
- Rapid Diagnostic Tests (RDTs)
- Primary isolation of *Vibrio cholerae* from stool specimens
- Strain conditioning for shipment and storage (short-term and long-term)
- Identification of toxigenic *Vibrio cholerae* O1 / O139
 - Culture-based methods (e.g., agglutination in VC-specific antisera)
 - Molecular methods (e.g., PCR)
- Antimicrobial susceptibility testing (AST)
- Data management and reporting laboratory results

Are there other key topics to include?

WHO SHOULD BE TRAINED?

- Target audience depends on the topic of interest
- Consider broader audience / other stakeholders

	Cholera basics (disease, pathogen, response)	Specimen collection, preservation, and transport	Adaptive testing strategy	RDTs	Test methods	Reporting lab results
Healthcare workers: - Technicians - Clinicians - Nurses	✓	✓	✓	✓		
Surveillance officers	✓	✓	✓	✓		
Laboratory staff	✓	✓	✓	✓	✓	✓

Are there other stakeholders to include?

HOW TO STRUCTURE TRAINING

Proposal - Tiered training plan

Tier 1:

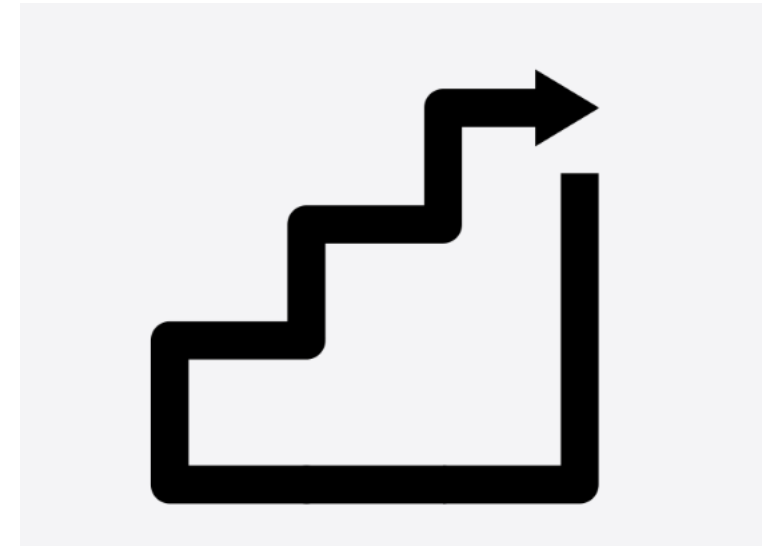
- Basics (disease, pathogen, response)
- Specimen collection, preservation, and transport
- RDTs
- Isolation, culture-based confirmation methods

Tier 2:

- Adaptive testing strategy
- Reporting lab results
- AST
- PCR

Tier 3:

- WGS



Thoughts?

Are there other considerations or alternative options?

FORMATS AND MODES OF DELIVERY

In person / virtual

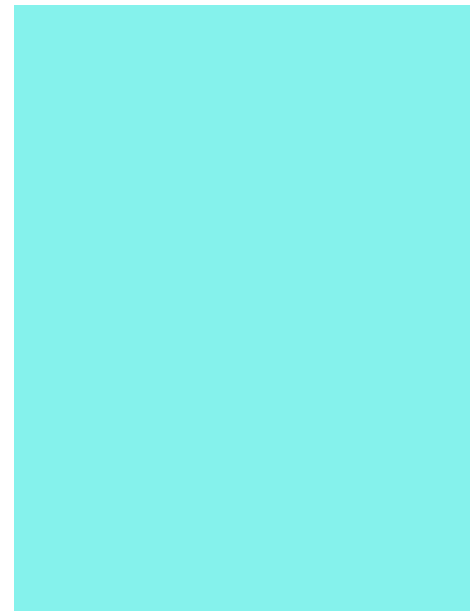
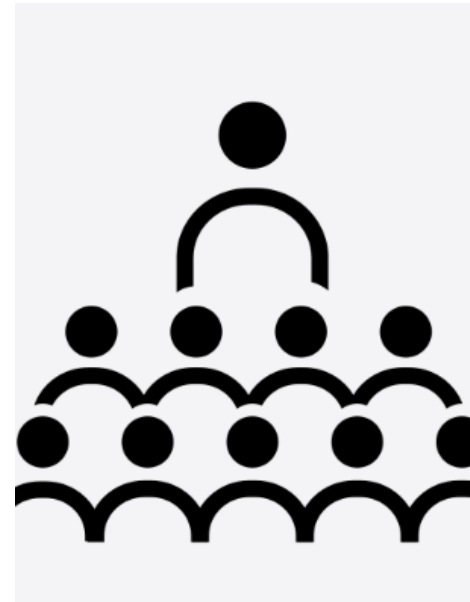
On site / external workshops

On demand / on line

Hands on / lecture based

Internally / externally led

What will work best for your laboratory?





VALIDATING TRAINING

Measuring the success of training is a crucial part of a capacity building program

- How effective was the course?
- What did the participants learn?

Measuring the success of tiered training program

- Step-wise certification at the end of each tier
- Move forward once the previous tier is mastered

HOW TO VALIDATE TRAINING

Recommendations for post training assessments

Lecture-based training

- In person, virtual or online
- Pre/post-test available
- Real-time score and feedback (e.g., correct answers if wrong)



Hands on training

- External Quality Assurance (EQA)
- Technical partner or EQA provider sends a blinded panel for identification
- Reporting forms, instructions, due date
- Performance letter may include score



HOW TO VALIDATE TRAINING



Recommendations for post training assessments

Post-training competency assessment

- Organized internally
- Customizable
- Potential to include more elements such as observation, use of equipment, recording data, etc.

DISCUSSION

What else can GTFCC do to support laboratory training?

Are there other key topics to include?

Are there other stakeholders to include?

What are your thoughts on the tiered training proposal?

- *Are there other considerations or alternative options?*

What format or mode of delivery will work best for your laboratory?



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THANK YOU |