GLOBAL TASK FORCE ON
CHOLERA CONTROL

GTFCC LABORATORY TRAINING TOOLS

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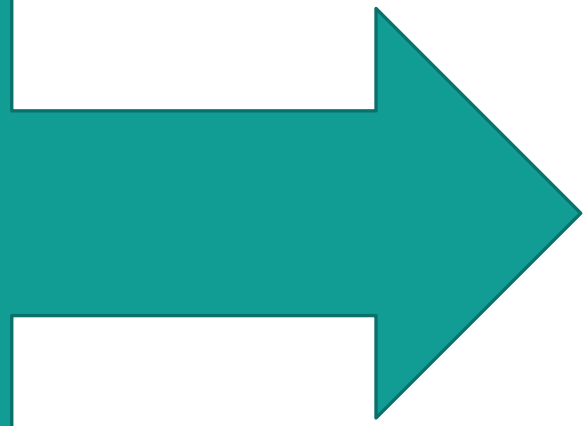
BACKGROUND & PREVIOUS DISCUSSIONS

GTFCC TRAINING SUPPORT

GTFCC Laboratory Training Toolkit

- Develop standardized material (presentations, training plans, checklists, etc.)
- Toolkit available via GTFCC website
- Online training courses (OpenWHO)



Laboratories and stakeholders can access and use the materials as needed + use for GTFCC trainings

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

ADDITIONAL ASPECTS OF THE TRAININGS

- Who should be trained?

  Field staff, lab staff, and higher-level decision makers

- How to structure the training?

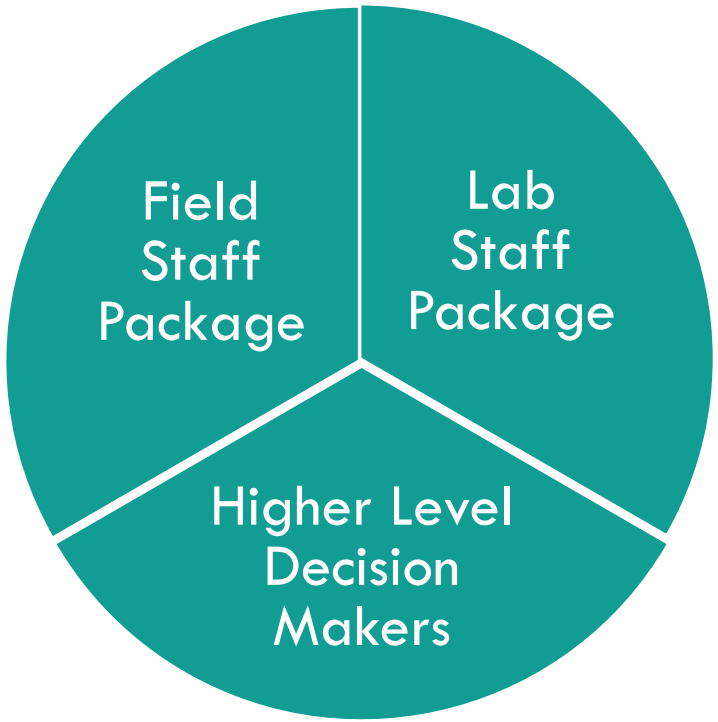
  Stepwise approach for the delivery covering the topics previously shown

- Validating and measuring the effectiveness of the training

PROGRESS IN 2023-2024

STANDARDIZED TRAINING MATERIALS

- 3 different training packages targeting the various arms involved in cholera testing and response.



FIELD STAFF PACKAGE: INTRODUCTION TO TESTING FOR CHOLERA

- **Comprises of 3 modules:**
  - Introduction to Cholera
  - Sample Collection, Preparation, and Transport for Cholera
  - Cholera Rapid Diagnostic Tests (RDTs)

- **Target audience:**
  - Rapid response teams
  - Surveillance field teams
  - Nurses
  - Medical doctors
  - Other primary healthcare workers
  - Laboratory personnel (including from reference laboratories).

LAB STAFF PACKAGE: BASIC LABORATORY METHODS FOR CHOLERA CONFIRMATION

- **Comprises of 8 modules:**
  - Introduction to Cholera
  - Testing Algorithms
  - Sample Receipt
  - Media Preparation
  - Culture confirmation
  - Antimicrobial Susceptibility
  - Reporting of Results
  - Additional Tests

- **Target audience:**
  - Laboratory directors
  - Laboratory personnel involved in cholera testing

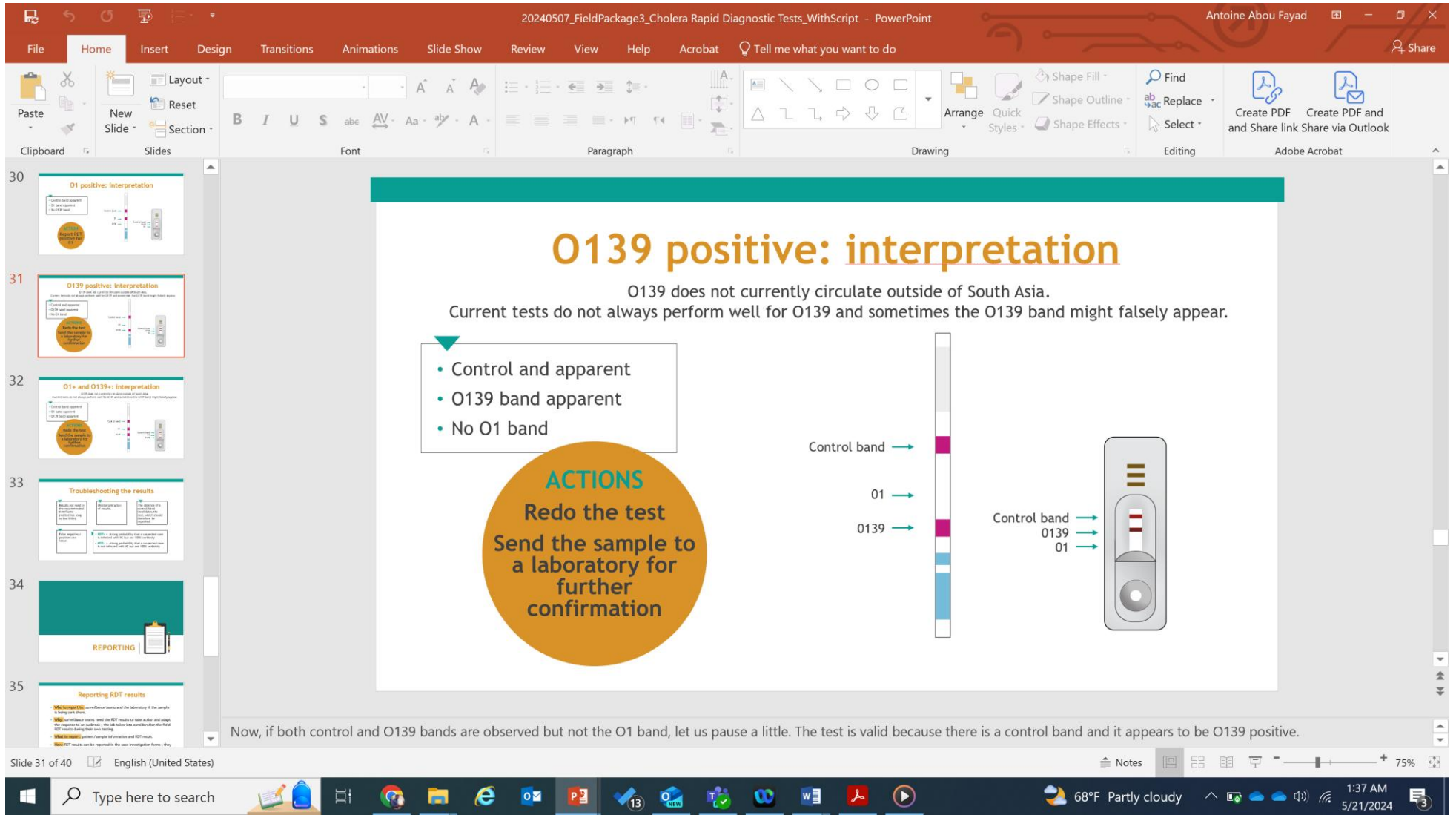
Will be sent out for review to all the LWG members!

HIGHER LEVEL DECISION MAKERS PACKAGE: TESTING STRATEGY AND CONSIDERATION FOR LABORATORY PREPAREDNESS AND RESPONSE FOR CHOLERA

- **Comprises of 3 modules:**
  - Testing Strategy
  - Preparedness for Cholera
  - Response to a Cholera Outbreak

- **Target audience:**
  - Rapid response team leads
  - Surveillance field team leads
  - Ministry of Public Health staff.
  - Laboratory directors.

SNAPSHOTS FROM THE TRAINING MATERIAL



TRAINING OF TRAINERS (TOT)

- Further support building capacity for cholera surveillance

Improve the response and the understanding of the in-country burden of cholera.

Objectives of the ToT:

1- Provide laboratories with trainers for cholera diagnostics→ cascade trainings across countries.

2- Directly improve the capacity for testing and confirming cholera in country.

3- Improved cholera surveillance.

Funded by CDC and IMST to perform emergency ToT in high priority countries

TOPICS AND CONTENT OF TOT

Topics	Setup required
Introduction to cholera	Interactive lecture
Stool sample collection and sample preparation for transport	Interactive lecture and practical laboratory session
Use of rapid diagnostic tests	Interactive lecture and practical laboratory session
Culture methods for cholera with focus on GTFCC recommended methods (culture/oxidase/sero-agglutination)	Interactive lecture and practical laboratory session
Antimicrobial susceptibility testing	Interactive lecture and practical laboratory session
Other laboratory methods for cholera	Interactive lecture
Reporting of results	Interactive lecture
Strategic testing for cholera	Interactive lecture
How to manage and plan a training	Interactive lecture

TOT AGENDA

- 9 days long
  - First 6 days will be working with the "trainers to be"
  - Last 3 days of the training will be centered around setting up cascade trainings by the new trainers and attending those trainings

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Cholera laboratory diagnostics training of trainers

The Republic of XXX

4-14 July, 2024

Training Agenda

Day 1

Time	Activity Title	Required Setup
8:00- 8:30	• Opening Remarks • Goals for the workshop • Introduction of participants • Facility information • Group photo • Overview of the program	Classroom
8:30-9:00	Pre-training assessment	Classroom
9:00-10:00	Introduction to cholera	Classroom
10:00-10:30	Biosafety and Biosecurity	Classroom
10:30-10:45	Break	
10:45-12.00	Sample collection and transport	Classroom
12:00-13:00	Culture - Alkaline Peptone Water (APW) - Media selection	Classroom
13:00-14:00	Break for lunch	
14:00-15:00	Media preparation	Laboratory
15:00-16:00	Rapid Diagnostic Tests (RDT) - sample quality - testing plan-list of supplies	Laboratory
16:00-17:30	Pouring media and plates - RDTs	Laboratory
17:00-17:30	Discussion and wrap up	Classroom

Day 2

Time	Activity Title	Required Setup
8:00- 8:30	Recap day 1	Classroom
8:30-10:00	Culture - Direct plating - Inoculation of APW	Laboratory
10:00-10:15	Break	
10:45-12:00	Culture - Isolating a single colony - Oxidase testing – Agglutination - Gram-staining - Analytical Profile Index (API) - Other techniques	Classroom
12:00-13:00	Break for Lunch	
10:45-12.00	Sample collection and transport	Classroom
13:00-14:00	AST	Classroom
14:00-17:00	RDT (repeat) and culture inoculations	Laboratory

Day 3

Time	Activity Title	Required Setup
8:00- 8:30	Recap day 2	Classroom
8:30-10:30	Culture - Isolating a single colony - Morphological analysis of the colonies	Laboratory
10:30-10:45	Break	
10:45-13:00	Culture - Oxidase testing – Agglutination - API	Laboratory
13:00-14:00	Break for Lunch	
14:00-17.00	AST	Laboratory

Day 4

Time	Activity Title	Required Setup
8:00- 8:30	Recap day 3	Classroom
8:30-10:30	AST analysis	Laboratory
10:30-10:45	Break	
10:45-13:00	Culture - Oxidase testing – Agglutination – API	Laboratory
13:00-14:00	Break for Lunch	
14:00-15:30	Reporting and data analysis (part 1)	Classroom
15:30-16:00	Break	
16:00-17 :00	Reporting and data analysis (part 2)	Classroom

TOT VALIDATION & EVALUATION

ToT Assessment Test

1- Sample collection for culture confirmation should happen after antibiotic treatment:
True or False

2- Stool sample in a fecal collection cup can be tested by culture in the lab after---- from collection:

a- 24 hours c- 2 hours
b- 7 days d- 2 days

3- Swabs in Cary Blair should be transported at 4 °C True or False

4- RDTs cannot detect cholera toxins: True or False

5- A positive RDT alone is sufficient to declare the presence of O139 positive sample
True or False

6- If your RDT indicates the presence of O1 but the control line is not visible, then the result of the RDT is considered to be positive. True or False

7- Alkaline peptone can be streaked on selective and nonselective culture media after more than 6 hours of incubation. True or False

8- Any yellow colony is growing on TCBS agar means that this colony is *Vibrio cholerae*.
True or False

9- Performing agglutination of *Vibrio* cholerae using specific antisera allows to identify serogroup and toxigenicity.

True or False

10- What are the minimum antibiotics recommended for *Vibrio cholerae* sensitivity testing for surveillance and treatment of cholera (please select all correct answers).

a. Ciprofloxacin
b. Amikacin
c. Meropenem
d. Colistin
e. Tetracycline.
f. Nalidixic acid
g. Azithromycin
h. Gentamycin
i. Minocycline

11- Using PCR, we can identify *Vibrio cholerae* (genus and species), serogroup, serotype, confirm the presence of the toxin gene and obtain antimicrobial sensitivity data True or False

ToT Participants Feedback Questionnaire

PARTICIPANT:

Please take a moment to provide feedback on the training you have just received to help us to improve the quality of the training material and instruction of the course.

Circle how closely you agree or disagree with the statements. If you have specific comments, please provide them to the instructor or write them in the blocks below. (Scale: 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree).

1.	**I am satisfied with the training event.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
2.	**The quality and content of the training materials and presentations met my expectations.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
3.	**The instructor or teacher was aware/ familiar with the topic they discussed and its relevance to my country.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
4.	**The ability, clarity and completeness of the instructor were adequate when responding to trainee questions.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
5.	**The training content provided enough context and went into enough detail.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
6.	**The trainer was engaging and supportive.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
7.	**The group discussions adequately covered issues of concern relevant to my country.**				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
8.	**The information I learned within the training was important and relevant to my current position.**				

PILOT TRAININGS

These trainings were piloted in South Sudan, Somalia, and Union of Comoros so far.

FUTURE PERSPECTIVES

- ❑ Finalize all the toolkit
- ❑ Publish the toolkit on GTFCC website as they are completed
- ❑ Transform the toolkit into OpenWHO courses
- ❑ Continue setting up more ToTs, including regional level ToTs!

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THANK YOU