

# Cholera surveillance for health authorities

## Module 2



GLOBAL TASK FORCE ON  
**CHOLERA CONTROL**

# Cholera surveillance for health authorities

Core functions  
& definitions



# What will you learn?

- **Core functions of health authorities** in cholera surveillance
- Cholera **case definitions**
- Cholera **outbreak definitions**



Health  
authorities'  
core functions

# Core functions

**Core surveillance functions are performed by health authorities  
at all times in all surveillance units independent of the cholera situation**

Oversee  
reporting  
and testing



Transmit,  
analyze,  
interpret data



Investigate  
(case investigation  
& field investigation)



Disseminate  
outcomes



Guide  
prevention and  
response



A photograph showing a temporary medical facility, possibly a field hospital or a temporary clinic. Several patients are lying on green metal cots. The cots are arranged in rows. The background is a simple, light-colored wall. The floor is dark and appears to be made of dirt or concrete. There are some red and blue plastic containers on the floor. The overall scene suggests a temporary or emergency medical setting.

## Reporting and testing

# Detection & reporting

**Health facility-based, community-based, event-based surveillance**

## **Health facility-based surveillance reporting sites**

Any institution with **outpatient and/or inpatient facilities**

- **Health centres, hospitals, clinics, private practices**
- Cholera treatment centres (**CTCs**), cholera treatment units (**CTUs**)
- Oral rehydration points (**ORPs**)
- Etc

# Reporting by health facilities

**Standard case-based data is reported by health facility-based surveillance**

## ► Case-based data

- **Individual information** on each suspected cholera case
- Recorded in a **case report form** or a **line list**

## ► Standard data

- **Same information** is collected on each suspected cholera case
  - **Patient information:** age, sex, place of residence
  - **Clinical information:** symptom onset, inpatient/outpatient, dehydration, outcome
  - **Tests:** tests performed, results



**Learn where to access data collection tools in Module 6**

# Reporting at community level

**Standard aggregate data is recorded and reported by community-based surveillance**

## ➡ Aggregate data

- **Number** of suspected cholera cases and cholera deaths **in a day**
- Recorded in a **summary table**

## ➡ Standard data

- The **same information** is recorded every day
- Number of suspected cholera cases and cholera deaths
  - By **sex and age group**



**Learn where to access data collection tools in Module 6**

# Testing

## Why to test

### ► For surveillance

- AWD can be caused by different diseases
- Testing is to **characterize the cholera situation**

### ► But not for treatment

- Test results **do not influence treatment**
- Treatment depends on dehydration level

## Who to test

- Suspected cholera cases
- Among those, **which one to test depends on the cholera situation**



**Learn about testing strategies  
in Modules 3, 4, 5**

# Screening by RDT

**Rapid Diagnostic Tests (RDTs) are useful screening tools but **CANNOT** be used to confirm cholera**



Photo adapted from: WHO/ Blink Media - Cindy Liu

## ► RDTs

- Can be **used** at health facility level
- To triage **samples** to send for laboratory confirmation

## ► RDT results

- **Sufficient** to **rule out cholera** if negative
- **Recorded** as part of standard information
  - Positive and negative results



**Learn where to access resources  
on testing in Module 6**

# Laboratory confirmation

Laboratory confirmation of cholera is by **culture or PCR**



Photo adapted from: WHO / Fid Thompson

➡ Samples collected

- Within the **first 4 days of illness**
- **Before antibiotic** therapy

➡ **No need to wait for the results to initiate treatment**

# Reporting

Health facility-based & community-based surveillance data  
and tests results are reported to health authorities

## ► Reporting of suspected cholera cases

- **Case-based** reporting reporting by **health facilities**
- **Aggregate** reporting by **community** health workers / volunteers

## ► Zero reporting

- Reporting of **absence of suspected cholera cases**
- Health facility-based and community-based surveillance

## ► Reporting of test results

- **Positive** and **negative**

An illustration of two Black women in an office. One woman is seated at a desk, wearing a dark blazer over a patterned top, and is writing on a document with a blue pen. The other woman is standing behind her, wearing a striped button-down shirt, a pearl necklace, and glasses, and is holding a large sheet of paper. They are both looking at the paper. The desk is cluttered with papers, a multi-line office phone, and a computer monitor. In the background, there are shelves with binders and a filing cabinet.

Oversight  
by health  
authorities

# Awareness

Health authorities ensure that **all reporting sites and laboratories are aware** of what to report when and how, and who to test when and how



- Health authorities regularly inform
  - **Health facility workers**
  - **Community health workers / volunteers**
  - **Laboratories**
- Ongoing **cholera situation** in their surveillance unit
- **Applicable strategies** for reporting and testing

# Capacity building

Health authorities ensure that **all reporting sites and laboratories are in capacity** to implement reporting and testing according to applicable strategies



## ► Health facility workers & community health workers / volunteers

- Are trained on **case definitions** and on **how to report**
- Have **reporting tools** and are trained to use them

## ► Health facility workers

- Are trained and have supplies to **perform RDTs** (if applicable)
- Are trained and have supplies to **collect and send samples** for laboratory testing

## ► Laboratories

- Are trained and have supplies and reagents to **perform testing** for cholera
- Are trained on how to **report results**

# Monitoring

Health authorities **monitor on a weekly basis** that reporting and testing are implemented according to applicable strategies, and **take supportive measures** as needed



## ► Monitoring of performance indicators

- Completeness and timeliness of **reporting**
- Adherence to **testing** strategies

## ► Feedback and recommendations

- Reporting sites and laboratories receive **feedback**
- **Recommendations/support** for improvement as needed



# Transmission, analysis and interpretation

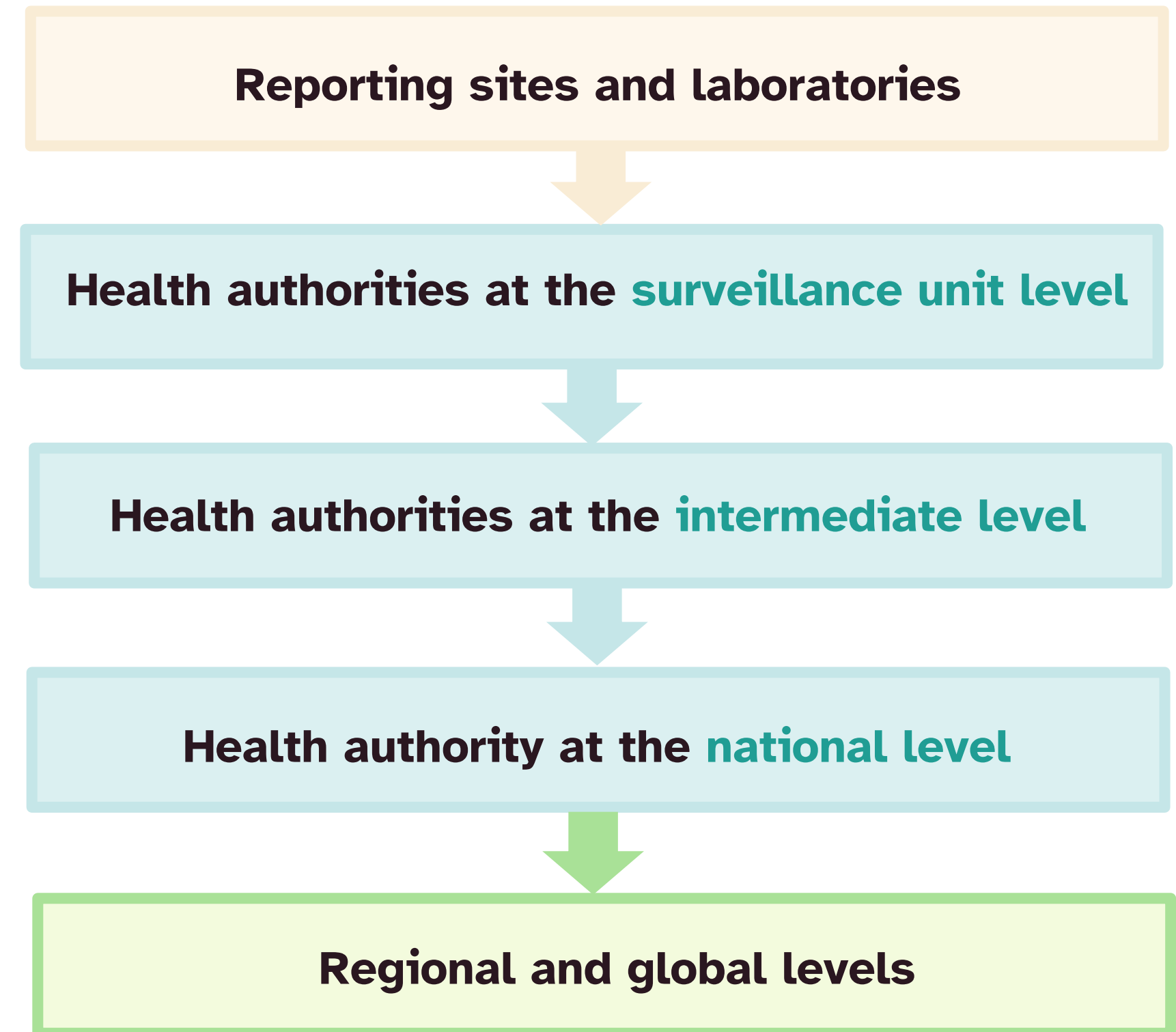
# Data transmission

## ► Local health authorities

- **Compile and clean** the data reported by
  - Health facility-based surveillance
  - Community-based surveillance
  - Laboratories
- **Report it to the next level**
  - Up to the national level

## ► National level health authority

- **Report aggregate data** to the regional and global levels



# Analysis & interpretation

Health authorities analyse and interpret the data to **describe and assess** the situation

## ► Interpretation



- Data from **health facility-based** and **community-based** surveillance
  - Analysed separately
  - But **interpreted jointly**
- Surveillance **performance indicators** are duly considered



# Investigation

# Investigations

Collection of additional information to **supplement standard surveillance data** to better interpret the cholera situation



- **Verification** of reported information
- **Case investigation**
- **Field investigation**

# Verification

Performed by **contacting reporting source(s)** to check that the information is accurate and reliable



## ➡ For example

- Check whether a case meets the **case definition**
- Clarify laboratory **test(s)** performed or result(s)

# Case investigation

Performed by **interviewing suspected cholera case(s)**



- Classify case(s) by **geographic origin of infection**
  - Locally acquired or imported
- Generate **hypotheses on exposure** and context of transmission
  - Orientation for field investigation
- Identify **epidemiological links** between cases
  - Clustered or community transmission



**Learn where to access a cholera case investigation form in Module 6**

# Field investigation

## Onsite assessment performed in an outbreak area



### ➤ Assess

- **Source(s) of contamination**
- **Context of transmission**
- **Risk factors for spread**

➤ Oriented by the findings of case investigations

➤ Combined with risk and needs assessments & immediate measures

➤ Used to guide effective response measures

# Dissemination of outcomes and response



# Dissemination

Information on the cholera situation is **disseminated in a timely manner to all stakeholders** involved in cholera prevention and control

## ➡ Epidemiological reports



- Disseminated to
  - Health professionals
  - Community health workers / volunteers
  - Stakeholders representing all cholera pillars
  - Operational partners and international organizations
  - Etc
- Discussed in a multisectoral manner
  - **Guide prevention and response strategies**

# Definitions



# Acute Watery Diarrhoea

A sign of cholera is **Acute Watery Diarrhoea (AWD)**

**AWD is not any type of diarrhoea**

- ➡ **Acute** if it lasts for **less than 7 days**
- ➡ **Watery** if stools are **non-bloody and liquid** (and may contain mucous)
- ➡ **Diarrhoea** if there are **≥3 loose stools within a 24-hour period**

# AWD & dehydration

AWD may cause dehydration

## SEVERE dehydration

### ➡ One or more danger sign(s)

- Lethargic or unconscious
- Absent or weak pulse
- Respiratory distress

Or

### ➡ At least two of the following

- Sunken eyes
- Not able to drink or drinks poorly
- Skin pinch goes back very slowly

## Treatment guided by dehydration level

### ➡ Severe dehydration

- Intravenous rehydration

### ➡ Other dehydration levels

- Oral rehydration solution

# Cholera case definitions

Depending on the cholera situation, **different cholera case definitions** apply

Where there is **NO** probable or confirmed cholera outbreak

- ➡ Person **aged  $\geq 2$  with AWD and severe dehydration**  
**or**
- ➡ Person **aged  $\geq 2$  who died** from AWD

**Criteria on age and severe dehydration**

- **Limit false suspected cholera outbreaks**
- **Avoid overwhelming early detection systems**

Where there is an **ONGOING** probable or confirmed cholera outbreak

- ➡ Person with **AWD** (or who died from AWD)

**NO criteria on age and severe dehydration**

- **For sensitive monitoring**

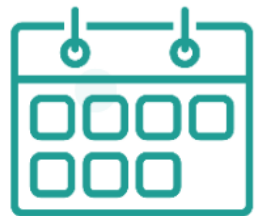
# Confirmed cholera case

**Any person infected with *Vibrio cholerae* O1 or O139  
as confirmed by culture (including seroagglutination) or PCR**



- ➡ Strain should be demonstrated as **toxigenic** if
- No confirmed cholera outbreak in another surveillance unit
  - and**
  - No established epidemiological link to a confirmed cholera case or source of exposure in another country

# Suspected cholera outbreak



**$\geq 2$  suspected cholera cases**

or

**1 suspected cholera case RDT+**

Reported in a surveillance unit **within 7 days**

**Public health measures for acute diarrheal diseases  
(not specific to cholera) implemented immediately**

# Probable cholera outbreak

➡ Number of suspected cholera cases tested **positive by RDT**  $\geq$  threshold within 14 days

## Threshold

Number of  
cases tested

3 to 7

8 to 10

11 to 14

15 to 17

18 to 21

Number of  
RDT+

$\geq 3$  RDT+

$\geq 4$  RDT+

$\geq 5$  RDT+

$\geq 6$  RDT+

$\geq 7$  RDT+

High confidence that a cholera  
outbreak is occurring

**Cholera outbreak response measures**  
rapidly implemented **without waiting** for laboratory confirmation

# Confirmed cholera outbreak

≥ 1 locally acquired confirmed cholera case



## ➡ Locally acquired

- Infected in the surveillance unit
- Not an imported case

**Cholera outbreak response measures rapidly implemented**

# Wrap up

Oversee  
reporting  
and testing



Transmit,  
analyze,  
interpret data



Investigate  
(case investigation &  
field investigation)



Disseminate  
outcomes



Guide  
prevention and  
response



Continuously monitor  
and ensure that  
**stakeholders  
detect, report, and  
test suspected  
cases** in accordance  
with applicable  
strategies

Regularly analyze  
and interpret  
epidemiological data  
and test results to  
**characterize the  
cholera situation**

**Collect additional  
information** as  
needed with case  
and field  
investigations to  
better assess the  
cholera situation

**Inform** all  
relevant  
stakeholders of  
the cholera  
situation in a  
timely manner

Contribute to  
coordinated  
multisectoral  
**prevention and  
control strategies**  
against cholera



# Question 1



► **Cholera health-facility based surveillance relies on the reporting of:**

- a) Individual ("case based") data on suspected cholera cases
- b) Data aggregated by day on suspected cholera cases
- c) Data aggregated by week on suspected cholera cases

# Question 1 – Answer



- **Cholera health-facility based surveillance relies on the reporting of:**
- a) Individual ("case based") data on suspected cholera cases**
  - b) Data aggregated by day on suspected cholera cases
  - c) Data aggregated by week on suspected cholera cases

## Question 2



■ **Cholera community-based surveillance relies on the reporting of:**

- a) Individual ("case based") data on suspected cholera cases
- b) Data aggregated by day on suspected cholera cases
- c) Data aggregated by week on suspected cholera cases

## Question 2 – Answer



► **Cholera community-based surveillance relies on the reporting of:**

- a) Individual ("case based") data on suspected cholera cases
- b) Data aggregated by day on suspected cholera cases**
- c) Data aggregated by week on suspected cholera cases

## Question 3



➡ **Rapid Diagnostic Test (RDTs) can be used to:**

**Select all that apply**

- a) Confirm cholera
- b) Rule out cholera
- c) Screen samples for laboratory confirmation

## Question 3 – Answers



► **Rapid Diagnostic Test (RDTs) can be used to:**

a) Confirm cholera

**b) Rule out cholera**

**c) Screen samples for laboratory confirmation**

## Question 4



► **The surveillance unit level corresponds to:**

**Select all that apply**

- a) The spatial level at which the cholera situation is monitored to determine applicable surveillance objectives and strategies
- b) The supervisory level at which the implementation of cholera surveillance is coordinated and monitored
- c) The operational level at which cholera prevention and control measures are implemented

## Question 4 – Answers



■ **The surveillance unit level corresponds to:**

- a) The spatial level at which the cholera situation is monitored to determine applicable surveillance objectives and strategies
- b) The supervisory level at which the implementation of cholera surveillance is coordinated and monitored
- c) The operational level at which cholera prevention and control measures are implemented

Together we can  
#Endcholera



GLOBAL TASK FORCE ON  
**CHOLERA CONTROL**