

# Cholera surveillance for health authorities

## Transcript of online course

### MODULE 2

#### Core functions of health authorities in cholera surveillance and definitions

##### Slide 1

Welcome to Module 2 of the GTFCC online course on cholera surveillance for health authorities.

##### Slide 2

This module focuses on the core functions of health authorities in cholera surveillance.

##### Slide 3

After completing this module, you will be aware of the core functions of health authorities in cholera surveillance and you will be familiar with cholera case definitions and outbreak definitions.

##### Slide 4

Let's look into the core functions of health authorities in cholera surveillance.

##### Slide 5

Core surveillance functions are those performed by health authorities at all times, in all surveillance units, independent of the ongoing cholera situation.

Here is an overview of these functions.

First of all, health authorities are responsible for overseeing that the reporting of suspected cholera cases and the testing of suspected cholera cases are implemented by all surveillance stakeholders in accordance with applicable surveillance strategies.

Then, health authorities transmit the surveillance data reported to them to the next upper level and analyze and interpret the data.

As needed, health authorities also perform case investigation and field investigation to better understand the cholera situation.

Health authorities make sure to disseminate the surveillance outcomes in a timely manner to a broad range of stakeholders.

Lastly, health authorities ensure that surveillance outcomes are directly used to guide prevention and response strategies against cholera.

#### Slide 6

Let's look into how suspected cholera cases are reported and tested.

#### Slide 7

Suspected cholera cases are routinely detected and reported by health facility-based surveillance and community-based surveillance. These two routine surveillance streams are complemented by event-based surveillance.

Any institution with outpatient or inpatient facilities contribute to health facility-based surveillance. This includes health centres, hospitals, clinics, private practices, cholera treatment centres, cholera treatment units, oral rehydration points and so on.

#### Slide 8

At health facility-level, standard case-based data is collected and reported on any suspected cholera case seen at a health facility.

Case-based data means that individual information is collected on each suspected cholera case. This information is recorded in a case report form or in a line list.

Standard data means that the same information is always collected on suspected cholera cases.

This information includes:

- information on the patient such as age, sex, and place of residence;
- as well as clinical information such as the date of symptom onset, whether the patient was hospitalized for treatment, the patient dehydration level at arrival, and the outcome of the disease;
- lastly, information on the tests performed and their results are also collected.

In module 6, we will show you where to access template tools to record standard case-based data for health facility-based reporting.

#### Slide 9

Regarding community-based surveillance, standard aggregate data is recorded and reported.

Aggregate data means that the number of suspected cholera cases and cholera deaths are compiled by day. Typically, this is recorded in a summary table.

Standard data means that the same information is recorded on every day, namely the number of suspected cholera cases and cholera deaths by sex and age group.

In module 6, we will show you where to access template tools to record standard aggregate data for community-based reporting.

#### Slide 10

Moving on to the testing of suspected cholera cases.

Acute Watery Diarrhoea (AWD) is a key sign of cholera. However, AWD can be caused by different diseases. Therefore, testing for cholera is important for surveillance in order to characterize the actual cholera situation.

However, cholera test results do not influence the treatment of suspected cholera cases. Indeed, treatment depends on dehydration level, not on cholera test results.

Cholera tests are performed on patients who meet the definition of a suspected cholera case.

Among those, which one should be tested depends on the cholera situation.

You will learn about testing strategies applicable in different situations in the next modules of this course.

#### Slide 11

Rapid Diagnostic Tests for cholera, RDT, may be available in your country. If so, they are useful screening tools. However, they cannot be used to confirm cholera.

RDT can be performed at health facility level; they are rapid and easy to use.

They are used to triage samples to be sent for laboratory confirmation, namely those tested positive by RDT.

If the RDT is negative, cholera can be ruled out and there is no need to send the sample for laboratory confirmation.

All RDT results, positive or negative, are recorded as part of standard information, and should be reported.

You will learn where to access information on how to perform RDT in Module 6.

#### Slide 12

For cholera to be confirmed, samples collected on suspected cholera cases are sent to a laboratory for confirmatory testing by culture or PCR.

Samples for laboratory confirmation should be collected within the first four days of illness and before initiating antibiotic therapy.

There is no need to wait for the laboratory confirmation results to treat suspected cholera cases. Treatment depends on dehydration level, not on test results.

### Slide 13

The standard data collected by health facility-based surveillance and community-based surveillance as well as test results are reported to the health authority.

When suspected cholera cases have been detected, case-based data collected at health facility level and aggregate data recorded at community level are reported.

When no suspected cholera cases have been detected, the absence of suspected cases is also reported to the health authority. This is zero reporting and applies to health facility-based surveillance and community-based surveillance.

Laboratories report to the health authority, all cholera test results positive and negative.

### Slide 14

Let's look into how health authorities oversee that suspected cholera cases are reported and tested in accordance with applicable surveillance strategies.

### Slide 15

Health authorities are responsible for ensuring that all reporting sites and laboratories are fully 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 or volunteers implementing community-based surveillance as well as laboratories: on the cholera situation in their surveillance unit and on the applicable strategies for reporting and testing suspected cholera cases.

### Slide 16

Health authorities also ensure that all reporting sites and laboratories are in capacity to report and test suspected cholera cases according to applicable strategies.

For example, they make sure that health facility workers and community health workers or volunteers are trained on case definitions and on how to report suspected cholera cases. Health authorities also make sure that these stakeholders have standard reporting tools on hand and that they know how to use them.

In addition, health authorities also make sure that health facility workers are trained on how to perform RDTs and have the necessary supplies on hand. They also make sure that health facility workers know how to collect samples for laboratory testing and have the necessary supplies on hand and know where to send the samples for testing.

Lastly, health authorities make sure that laboratories expected to perform cholera tests are adequately trained and have the necessary supplies and reagents on hand to perform cholera tests, and that they know how to report test results.

### Slide 17

Health authorities monitor at least on a weekly basis that all reporting sites and laboratories report and test suspected cholera cases in accordance with applicable strategies, and they take supportive measures to improve reporting and testing as needed.

To monitor that reporting and testing are performed in accordance with applicable strategies, health authorities monitor surveillance performance indicators, in particular the completeness and the timeliness of reporting and the adherence to applicable testing strategies.

Health authorities regularly provide feedback to all reporting sites and laboratories on their performance.

If reporting or testing is not implemented according to applicable strategies, health authorities provide recommendations and support as needed to improve the performance of surveillance.

### Slide 18

Now let's look into the next core function of health authorities which is to transmit, analyze and interpret cholera surveillance data.

### Slide 19

Local health authorities compile and clean the data reported by all reporting sites at health facility level and community level as well as tests results reported by laboratories.

Then, they transmit the data to the next upper level up to the national level.

The health authority at the national level, report aggregate data to the regional and global levels.

### Slide 20

Health authorities routinely analyze and interpret cholera surveillance data to describe and assess the cholera situation at the surveillance unit level.

The following is considered to interpret the cholera situation.

The data reported by health facility-based surveillance and community-based surveillance are analyzed separately; they are not merged. However, they are interpreted jointly to assess the cholera situation.

Surveillance performance indicators are also taken into account to interpret the cholera situation in a sound manner.

### Slide 21

To better understand and interpret the cholera situation, health authorities may also investigate as needed. Let's look into this.

### Slide 22

Investigations are performed by health authorities as needed to collect additional information to supplement standard surveillance data routinely reported in order to better interpret the cholera situation.

Investigations may be in the form of a verification of the reported information, a case investigation, or a field investigation.

### Slide 23

To perform a verification, health authorities usually contact the reporting source to check that the reported information is accurate and reliable. For example, a verification may be performed to check that the definition of a suspected cholera case is met or to request clarifications on tests performed and their results.

### Slide 24

To perform a case investigation, health authorities interview suspected cholera cases.

The case investigation aims to classify the case by origin of infection.

This is achieved by assessing whether the case is locally acquired which means that he was infected in the surveillance unit where he was reported or if the case is an imported case if he was infected outside of the surveillance unit where he was reported.

In addition, case investigations are also very insightful to generate hypotheses about exposure to potential source of contamination and contexts of transmission; this can then be used to orient a field investigation.

Lastly, case investigations help determine epidemiological links between cases which is essential to assess whether transmission is occurring in clusters or in the community.

Using a standard form is recommended to perform a comprehensive case investigation. In module 6, you will learn where to access as standard cholera case investigation form.

### Slide 25

To perform a field investigation, health authorities perform an onsite assessment in an outbreak area.

A field investigation aims to assess potential sources of contamination, assess the contexts of transmission, and assess risk factors for spread.

The field investigation is usually oriented by the findings of case investigation. It is usually combined with a risk assessment and needs assessment and combined with immediate response measures. The findings of the field investigation are used to guide effective response measures.

### Slide 26

Health authorities disseminate the outcomes of surveillance and investigation to guide the response against cholera.

### Slide 27

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

This information is usually presented in epidemiological reports prepared by health authorities and is disseminated to health professionals, community health workers and volunteers, stakeholders representing all cholera prevention and control pillars, operational partners, international organizations, and so on.

The cholera situation is then assessed and discussed in a multisectoral manner to guide effective prevention and response strategies at the surveillance unit level.

#### Slide 28

To play their role effectively, health authorities must adhere to standard cholera case definitions and outbreak definitions. We will now walk you through key definitions.

#### Slide 29

A key sign of cholera is Acute Watery Diarrhoea, also referred to as AWD.

AWD is not any type of diarrhoea.

It is acute if it lasts for less than 7 days.

It is watery if stools are non-bloody and liquid and may contain mucous.

It is diarrhoea if there are 3 loose stools or more within a 24-hour period.

#### Slide 30

Acute Watery Diarrhoea can cause dehydration.

A patient has severe dehydration if one danger sign or more is present, namely being lethargic or unconscious, or having an absent or weak pulse, or having a respiratory distress.

If no danger sign is present, a patient has severe dehydration if at least two of the following signs are present: having sunken eyes, or not being able to drink or drinking poorly, or having a skin pinch which goes back very slowly.

Assessing the level of dehydration is essential to determine the appropriate rehydration plan.

Severe dehydration requires intravenous rehydration. In other situations, oral rehydration is sufficient.

#### Slide 31

Depending on the ongoing cholera situation, different definitions of suspected cholera cases apply.

In surveillance units where there is no ongoing probable or confirmed cholera outbreak, suspected cholera cases are any person aged 2 years or older with AWD and severe dehydration, or aged 2 years or older who died from AWD.

In surveillance units where there is an ongoing probable or confirmed cholera outbreak, suspected cholera cases are any person with AWD or who died from AWD.

The key difference between these case definitions is that in surveillance units where there is no ongoing probable or confirmed cholera outbreak, age and severe dehydration are taken into account to identify suspected cholera cases. These criteria limit the number of false alerts. This avoids overwhelming the surveillance system with false alarms which would decrease the effectiveness of early detection.

On the other hand, in surveillance units where there is a probable or confirmed cholera outbreak, age and severe dehydration are not considered to identify suspected cholera cases. This is to ensure the sensitive monitoring of an outbreak.

### Slide 32

A confirmed cholera case is any person infected with *Vibrio cholerae* O1 or O139, as confirmed by culture (including seroagglutination) or PCR.

In addition, in particular circumstances, the strain in a confirmed cholera case should also be demonstrated as toxigenic. That is if there is no confirmed cholera outbreak in another surveillance unit of the country and if there is no established epidemiological link to a confirmed cholera case or source of exposure in another country.

### Slide 33

Moving on to cholera outbreak definitions.

There is a suspected cholera outbreak in a surveillance unit if two suspected cholera cases or more or one suspected cholera case tested positive by RDT have been reported in a surveillance unit within 7 days.

If a suspected cholera outbreak is detected, public health measures for acute diarrheal diseases, not specific to cholera, should be implemented immediately.

### Slide 34

There is a probable cholera outbreak in a surveillance unit if the number of suspected cholera cases tested positive by RDT reaches a threshold within 14 days.

This threshold depends on the number of suspected cholera cases tested by RDT, as represented on this chart.

For example, if in a surveillance unit, between 3 to 7 suspected cholera cases were tested by RDT and at least 3 of them tested positive, there is a probable outbreak in this surveillance unit.

Similarly, if in a surveillance unit, between 8 to 10 suspected cholera cases were tested by RDT and at least 4 of them tested positive, there is a probable outbreak.

These thresholds were statistically determined to provide high confidence, around 95 percent, that when the threshold is met a cholera outbreak is occurring.

As a result, if a probable cholera outbreak is detected, cholera outbreak response measures should be rapidly implemented without waiting for laboratory confirmation.

### Slide 35



There is a confirmed cholera outbreak in a surveillance unit, if at least one locally acquired confirmed cholera case has been detected.

A locally acquired cholera case is a case who was infected in the surveillance unit considered. In other words, the case is not an imported case.

If a confirmed cholera outbreak is detected, cholera outbreak response measures should be rapidly implemented.

### Slide 36

As we wrap up this module, here are the important points to remember.

The core functions of health authorities in cholera surveillance are to continuously monitor and ensure that all reporting sites and laboratories detect, report, and test suspected cases in accordance with applicable strategies.

Health authorities regularly analyze and interpret epidemiological data and test results to characterize and understand the cholera situation at the surveillance unit level.

As needed, health authorities collect additional information through case investigations and field investigations to supplement surveillance data and better assess the cholera situation in a surveillance unit.

Health authorities inform all relevant stakeholders of the cholera situation in a timely manner, including by preparing and disseminating epidemiological reports.

Lastly, health authorities ensure that the outcomes of surveillance are directly used to guide coordinated prevention and control strategies against cholera.

### Slide 37

Before moving on to the next module, we encourage you to take a short quiz. There are four questions in this quiz.

### Slide 38

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

### Slide 39

The correct answer is a. Individual ("case based") data on suspected cholera cases are reported via health facility-based surveillance.

#### Slide 40

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

#### Slide 41

The correct answer is b. Data aggregated by day on suspected cholera cases are reported via community-based surveillance.

#### Slide 42

Question 3. Select all that apply. Rapid Diagnostic Test (RDTs) can be used to:

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

#### Slide 43

The correct answers are b and c. RDTs are used to rule out cholera when negative, and to screen samples for laboratory confirmation when positive.

#### Slide 44

Question 4. This is the last question. Select all that apply. 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.

#### Slide 45

All are correct. The cholera situation is monitored at the surveillance unit level and the applicable surveillance objective and strategies are determined at this level. The implementation of cholera surveillance is coordinated and monitored at the surveillance unit level. Strategies against cholera are also designed and implemented at the surveillance unit level.

#### Slide 46

We have now completed this module.