



Cholera surveillance
to inform OCV
vaccination
campaigns

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Introduction

The decision to release Oral Cholera Vaccines (OCV) from the stockpile in the case of a cholera outbreak is very largely dependent on the capacity of the Member States to produce timely, quality epidemiological and laboratory surveillance data concerning the number of cholera cases and deaths reported from the area to be vaccinated and adjacent areas.

Cholera surveillance before, during and after an OCV campaign produces data that are critical to guide the key decisions which need to be taken:

1. Which area should be targeted for vaccination?
2. Which age groups should be vaccinated?

The data from surveillance will also monitor the outbreak evolution and enable an estimation of the impact of the vaccination campaign.

The surveillance of cholera cases and deaths on a weekly (sometimes monthly) basis is usually a component of the national public health surveillance system. In addition, most countries require health care facilities to report immediately to higher levels of the Ministry of Health (district, regional or central) any patient suspected of cholera presenting to a health facility, and/or any death due to suspected cholera.

Historical and current weekly data for cholera cases and deaths per administrative unit collected by the existing surveillance system are required for the decision making process on OCV stockpile deployment. Although cholera surveillance should be strengthened in general and may be reinforced in some places during the cholera season, countries are not expected to specifically strengthen their surveillance of cholera for the purpose of OCV stockpile deployment.

Once the decision to vaccinate with OCV has been taken, cholera surveillance is expected to be maintained in the vaccinated and adjacent areas during and at least 6 months after the campaign, in order to better monitor and evaluate the evolution of the outbreak and results of the campaign. All partners involved in the response to the cholera outbreak at health care or community level should be involved.

1. Objectives of cholera surveillance

General

Early detection and prompt response to cases and outbreaks of cholera.

Specific

- Immediate reporting of cholera cases and deaths
- To describe the incidence rates and case fatality of cholera in the smallest geographic surveillance unit available
- Confirmation and monitoring of an outbreak
- To estimate the results of an OCV mass vaccination campaign

2. WHO Case definitions

Suspected case

- In an area where the disease is not known to be present, a patient aged 5 years or more, who develops severe dehydration or dies from acute watery diarrhoea.

- In an area where there is a cholera epidemic, any person aged 5 years or more with acute watery diarrhoea, with or without vomiting.

Confirmed case

- A suspected case in which *Vibrio cholerae* O1 or O139 has been isolated from the stool

3. Data Collection and Reporting

The existing population data by age group (under 5 years, 5 years and over), e.g. the most recent census or projections based on it, should be allocated to the corresponding administrative units to have an estimate as precise as possible about the denominator of the at risk population, accurate estimates of vaccine needs, as well as vaccine coverage and impact estimates.

The following reporting practices should occur on a regular basis:

- Immediately report of any new suspected case occurring in a previously unaffected area to the National Epidemic Response System and include the following metrics:
 - date of onset
 - age
 - gender
 - address
 - main symptoms
 - sample taken (yes/no)
 - outcome (Full recovery, referral, death)
- Report on a weekly basis the number of:
 - newly suspected cases
 - confirmed cases
 - deaths per administrative unit
- Report on a daily basis cases and deaths in heavily affected locations
- Re-inforce surveillance
 - Additional mobile surveillance officers may be recruited during and after the campaign to visit health facilities and dedicated cholera treatment structures (CTC, CTU) in the vaccinated and adjacent areas to actively collect notification forms (active surveillance).
 - Mobile surveillance officers should also conduct community investigations and active case finding in affected communities

4. Data analysis

Basic data analysis should include the following:

- Count the weekly number of cases and deaths per administrative unit. Draw the corresponding histogram (epidemic curve) for each administrative unit.
- The daily number of cases and deaths may be analyzed and graphed (epidemic curve) in some heavily affected locations
- Analyze the distribution of cases by age group and according to sources of drinking water
- If resources allow, plot the geographical location (GPS coordinates) of the households of cases. Compare with access to safe water.

5. Laboratory confirmation

Specimens to be collected are liquid stool or rectal swabs.

When to collect specimens

- Collect specimens from patients fitting the suspected case definition AND the following criteria:
 - onset within last 5 days AND
 - before antibiotic treatment has started.
- Do not delay rehydration treatment of patients to take a specimen. Specimens may be collected after rehydration has begun.
- If possible, specimens should be collected from 5 – 10 suspected cases at regular every 3 to 4 weeks intervals to monitor:
 - cessation of the outbreak,
 - changes in serotypes, and
 - antibiotic sensitivity patterns of *V.cholerae*.

How to prepare, store, and transport specimens

- Place specimen (stool or rectal swab) in a clean, well marked (name, coordinates, type of sample, date), leak proof container and transport to laboratory within 2 hours.
- If a more than 2- hour delay is expected, place a stool-soaked swab into Cary-Blair transport medium. Cary-Blair transport medium is stable for long storage periods of several months and does not require refrigeration if kept sterile and properly sealed.
- If Cary-Blair transport medium is not available and specimen will not reach the laboratory within 2 hours:
 - Store at +4°C to +8°C.
 - Do not allow specimen to dry. Add small amount of 0.85% NaCl if necessary.
 - Transport in well-marked, leak proof container within a cold box at +4°C to +8°C.
- All specimens should be accompanied by

a laboratory request form – either from the specific laboratory (preferred) or a page containing at minimum the following information:

- patient name or initials,
- age,
- address (village)
- date and time of collection
- date of onset of symptoms,
- symptoms,
- type of testing requested (see below)
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Laboratory tests

- Culture stool to determine presence of *V. cholerae* and determine O1 serotype using polyvalent antisera for *V. cholerae* O1.
- If desired, confirm identification with Inaba and Ogawa antisera.
- If it is not possible to identify a sero-type from the specimen, consider *V. cholerae* O139.
- Test antimicrobial sensitivity.
- Results should be available within a maximum of 2 to 4 days after specimen arrives at the laboratory.

6. Response

If a new case is suspected in a previously unaffected area

- Treat the case according to national protocols.
- Collect specimens (if possible from 5 to 10 cases) for laboratory confirmation for each new area affected by the outbreak.
- Report information immediately.

- Conduct investigations in other health facilities of the area and in the community to identify additional cases not previously reported.

If a suspected case is confirmed

- Report information immediately.
- Establish treatment facilities in place(s) where cases are reported.
- Mobilize communities to enable early detection and treatment of new cases.
- Check the availability of and ensure access to safe drinking water in affected communities.
- Reduce sporadic and outbreak-related cases through continuous access to safe water.
- Promote safe preparation and storage of food.
- Promote safe disposal of human waste.
- Reinforce cholera surveillance (active surveillance, active case finding).