

# CHOLERA

## Disease Overview

An acute bacterial enteric disease caused by toxin producing *Vibrio cholerae* serogroups 01 and 0139. Epidemics are linked to consumption of unsafe water and food, poor hygiene, poor sanitation, and crowded living conditions. Cholera is endemic in many developing countries. Sporadic cases in North America are usually due to travelers returning from countries where cholera is a problem. Non 01/non 0139 *Vibrio cholerae* serogroups have been associated with sporadic cases of gastroenteritis.

## Symptoms

Most cases of cholera are asymptomatic or have mild diarrhea. Severe cases are characterized by acute onset of diarrhea which turns into a profuse watery stool, often referred to as "rice-water" stool. Cases may also experience nausea and vomiting. Severe infections may progress to very rapid dehydration, acidosis, kidney failure, circulatory collapse, and death. Affected individuals need urgent rehydration with a balanced intake of fluid and salts (electrolytes) to replace those lost from the body.

## Reservoir

Humans and the environment (toxigenic *V. cholerae* 01).

## Mode of Transmission

Fecal-oral route and includes person-to-person, water-borne and food-borne. A person becomes infected with cholera by eating or drinking food or water contaminated with stool or vomit of an infected person. *Vibrio cholerae* 01 and 0139 can persist in water for long periods and multiply in moist leftover food. Outbreaks and sporadic cases have been linked to

- Raw or undercooked seafood
- Contaminated water

## Incubation Period

From a few hours to 5 days (usually 2-3 days).

## Period of Communicability

As long as stool samples are positive. Usually until a few days after recovery. Occasionally, a carrier state may persist for several months.

## Risk Factors

Increased risk for acquiring/severe illness:

- Travel to endemic areas

## Surveillance Case Definition

### Confirmed case

Laboratory confirmation of infection with or without clinical illness, through isolation of cholera toxin producing *Vibrio cholerae* serotype O1, O139, or other toxigenic serogroups from an appropriate clinical specimen (e.g., stool, rectal swab, vomit, blood).

### Probable case

Clinical illness in a person who is epidemiologically linked to a confirmed case;

OR

Detection of *Vibrio cholerae* nucleic acid by the *ctx* or *toxR* gene with or without clinical illness, in an appropriate clinical specimen (dependent on the test used), using a nucleic acid test (NAT), such as a polymerase chain reaction (PCR).

## Diagnosis and Laboratory Guidelines

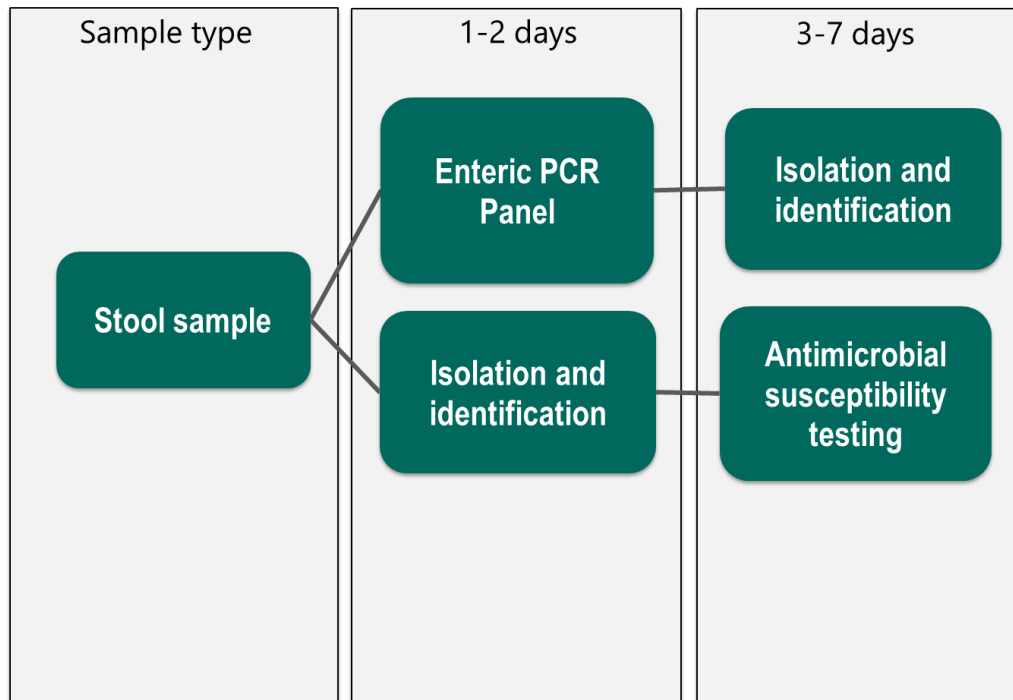
Isolation of *V. cholerae* from a stool specimen (culture).

PCR-based enteric panels will detect vibrio species based on their genetic material and can detect the toxin gene separately. Labs will report results based on PCR alone. Reflex culture is usually done on positives, but a lack of culture does not prevent from reporting.

Additional characterization done at NML – for example, testing for cholera toxin production or cholera toxin gene sequences.

For clinical purposes, a presumptive diagnosis can be made by visualisation of vibrios in stool.

Figure 1: Testing timelines:



## Reporting

Per Policy 2.2 Disease and Event notification to OCMOHE and section 3 Disease and Event Reporting

- CD Urgent notification for all confirmed cases.
- Routine surveillance (RDSS) for all confirmed cases.
- Access databases for all confirmed cases and for probable cases that are NAT or PCR positive. Database extracts are submitted to OCMOHE on a weekly basis.

## Case Management

### Education

Case or relevant caregiver should be informed about:

- Nature of infection, length of communicable period, mode of transmission and disease ecology
- Enteric disease precautions
- Hand washing
- Safe water source
- Care with food and water during travel to developing countries

### Investigation

#### Exclusion/Social Distancing

Follow exclusion period guidelines for cases under investigation (cases and symptomatic contacts) identified in high-risk individuals (food handlers, caregivers, and individuals in daycare centres and kindergartens).

#### Treatment

Hospitalization, adequate rehydration and appropriate antimicrobial agents.

#### Immunization

Cholera is a vaccine preventable disease. Encourage vaccination for persons traveling to endemic regions.

## Contact Management

### Education

Per case management

### Investigation

Identify contacts who shared food or drinks with the case for 5 days from last exposure.

#### Exclusion/Social Distancing

Follow exclusion period guidelines for cases under investigation (cases and symptomatic contacts) identified in high-risk individuals (food handlers, caregivers, and individuals in daycare centres and kindergartens).

#### Prophylaxis

Consider chemoprophylaxis for contacts; however, targeted individuals often have already acquired the infection or have little chance of acquiring it. Chemoprophylaxis of small groups over short periods of time in high-risk situations may be successful.

## Outbreak Management

Activate the local outbreak plan when an outbreak is declared.