

CHOLERA

REPORTING INFORMATION

- **Class A:** *Report immediately via telephone* the case or suspected case and/or a positive laboratory result to the local public health department where the patient resides. If patient residence is unknown, report immediately via telephone to the local public health department in which the reporting health care provider or laboratory is located.
- Reporting Form(s) and/or Mechanism:
 - *Immediately via telephone.*
 - For local health departments, cases should also be entered into the Ohio Disease Reporting System (ODRS) within 24 hours of the initial telephone report to the Ohio Department of Health (ODH).
- [CDC Cholera and Other Vibrio Illness Surveillance Report](#) (form 52.79, rev. 8/07) is available for use to assist in local health department disease investigation and contact tracing activities. This form should be sent to ODH, and information collected from the form should be entered into ODRS where fields are available.
- Additional reporting information, with specifics regarding the key fields for ODRS Reporting can be located in [Section 7](#).

AGENT

Vibrio cholerae serogroup O1 or O139. *V. cholerae* serogroup O1 includes two biotypes (classical and El Tor) and two major serotypes (Inaba and Ogawa), which may belong to either biotype.

Infectious Dose

The infectious dose has been estimated at 10^8 - 10^9 organisms; however, certain strains have been found to be more virulent. Severity of disease is usually contingent upon dose.

Note: Vibriosis, caused by the organisms *V. cholerae* non-O1, *V. parahaemolyticus* and *V. vulnificus*, is also a reportable disease in Ohio.

CASE DEFINITION

Clinical Description

An illness characterized by diarrhea and/or vomiting. Severity is variable.

Laboratory Criteria for Diagnosis

- Isolation of toxigenic (i.e., cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomitus *or*
- Serologic evidence of recent infection.

Case Classification

Suspect*: A clinically compatible case with presumptive or pending lab results.

Confirmed: A clinically compatible case that is laboratory confirmed.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed it was not a case.

* This case classification can be used for initial reporting purposes to ODH as CDC has not developed a classification.

Comment

The etiologic agent of a case of cholera should be reported as either *V. cholerae* O1 or *V. cholerae* O139. Illnesses caused by strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should be reported as cases of vibriosis.

SIGNS AND SYMPTOMS

Most infections are asymptomatic. Clinical illness ranges from mild diarrhea to a violent dehydrating diarrhea with an acute onset and death within two to three hours if untreated. Vomiting can occur several hours after the onset of diarrhea and disappears upon initial correction of the dehydration and acidosis. In the absence of antimicrobial therapy, but with supportive therapy, diarrhea can last as long as seven days.

DIAGNOSIS

See case definition. Most hospital laboratories have the ability to identify *Vibrio cholerae*. Diagnosis of cholera is made by isolating the organism from stool or vomitus. All *V. cholerae* isolates should be sent to ODH Laboratory for confirmation. Please contact ODH Outbreak Response and Bioterrorism Investigation Team (ORBIT) at 614-995-5599 to arrange for isolates to be shipped to the ODH Laboratory. Contact the ODH Laboratory at 614-728-0544 (Monday – Friday; 8 AM – 5 PM) for specimen submission criteria.

EPIDEMIOLOGY**Source**

Primarily humans. Seawater, fish and shellfish might serve as reservoirs (due to human sewage contamination). The organism is viable for about four to seven days in water and is susceptible to drying.

Occurrence

Cholera occurs worldwide. There are 0-5 cases annually in the United States. Most cases are in travelers returning from endemic countries. Outbreaks in Latin America have facilitated importation of cholera into the United States.

Mode of Transmission

Cholera is acquired by ingestion of food or water contaminated with *V. cholerae*. In an epidemic, the source is feces or vomitus of infected persons. *V. cholerae* can also live in coastal waters, and raw or undercooked seafood can be contaminated. Person-to-person transmission is not common.

Period of Communicability

Presumably during the diarrheal phase and usually until a few days after recovery. In untreated individuals, the organisms can be shed for as long as one week after cessation of diarrhea. A chronic carrier state can develop that persists for years. Diagnosis of such cases is difficult because the organisms tend to sequester in the gallbladder or upper intestine and escape detection in stool because acid conditions in the colon kill them. The role of asymptomatic individuals and chronic carriers in disease transmission has not been fully assessed.

Incubation Period

A few hours to 5 days, usually 2-3 days.

PUBLIC HEALTH MANAGEMENT

Case

Investigation

All cases reported to the local health department should initially be followed up with a telephone call to obtain demographic and epidemiologic data. The Enteric Case Report might be useful. Please contact ODH ORBIT immediately at 614-995-5599 when a case of *V. cholerae* is reported.

Treatment

Fluid therapy to correct dehydration, acidosis and hypokalemia is indicated. Tetracycline is the antibiotic of choice, ridding the body of the organisms within a short period and shortening the duration of diarrhea. Furazolidone is the best choice for children <9 years of age or when the organism is resistant to tetracycline.

Isolation and Follow-up Specimens

Ohio Administrative Code (OAC) 3701-3-13 (D) states:

"Cholera,: a person with cholera who attends a child care center or works in a sensitive occupation shall be excluded from the child care center or work in the sensitive occupation and may return when the following conditions are met:

- (1) A child may return to a child care center after diarrhea has ceased.
- (2) A person may return to work in a sensitive occupation after diarrhea has ceased, provided that his or her duties do not include food handling.
- (3) A food handler may return to work after diarrhea has ceased and two consecutive follow-up stool specimens are negative for *Vibrio cholerae*."

Follow-up stool specimens should be obtained no earlier than 48 hours following the completion of antibiotic therapy. Collect the remaining specimen(s) not less than 24 hours apart.

Public Health Significance

Ohio food service operation rules do not allow food preparation by persons who are infected with a disease in a communicable form that can be transmitted by foods. For additional information, refer to Ohio Administrative Code (OAC) Chapter 3717-1 (Ohio Uniform Food Safety Code) Section 02.1, Management and Personnel: Employee Health.

Contacts

If the case or any household member is employed in a sensitive occupation (food handling, direct patient care, employees in child care centers who handle food or directly care for children) or attends a child care center, all household members should be tested for *Vibrio cholerae* and treated if positive.

Prevention and Control

The risk for cholera is very low for U.S. travelers visiting areas with epidemic cholera. When simple precautions are observed, contracting the disease is unlikely.

All travelers to areas where cholera has occurred should observe the following recommendations:

- Drink only water that you have boiled or treated with chlorine or iodine. Other safe beverages include tea and coffee made with boiled water and carbonated, bottled beverages with no ice.

- Eat only foods that have been thoroughly cooked and are still hot, or fruit that you have peeled yourself.
- Avoid undercooked or raw fish or shellfish, including ceviche.
- Make sure all vegetables are cooked avoid salads.
- Avoid foods and beverages from street vendors.
- Do not bring perishable seafood back to the United States.

A simple rule of thumb is "Boil it, cook it, peel it, or forget it. "

Vaccination

A vaccine is available and is sometimes recommended for travelers to certain countries where cholera is occurring. The vaccine offers partial protection (50%) for a short duration (3-6 months). Some physicians feel that international travelers almost never contract cholera and that use of the current vaccine cannot be justified.

What is cholera?

Cholera is an acute, diarrheal illness caused by infection of the intestine with the bacterium *Vibrio cholerae*. The infection is often mild or without symptoms, but sometimes it can be severe. Approximately 1 in 20 infected persons has severe disease characterized by profuse watery diarrhea, vomiting and leg cramps. In these persons, rapid loss of body fluids leads to dehydration and shock. Without treatment, death can occur within hours.

How does a person get cholera?

A person can get cholera by drinking water or eating food contaminated with the cholera bacterium. In an epidemic, the source of the contamination is usually the feces of an infected person. The cholera bacterium can also live in the environment in brackish rivers and coastal waters. Shellfish eaten raw have been a source of cholera, and a few persons in the United States have contracted cholera after eating raw or undercooked shellfish from the Gulf of Mexico. The disease is not likely to spread directly from one person to another; therefore, casual contact with an infected person is not a risk for becoming ill. While cholera is a rare disease, those who might be at risk include people traveling to parts of Latin America, Africa or Asia where outbreaks are occurring, and people who consume raw or undercooked seafood from warm coastal waters subject to sewage contamination.

How is the bacterium spread?

The cholera bacterium is passed in feces. It is spread by eating or drinking food or water contaminated by the fecal waste of an infected person. This occurs more often in developing countries lacking adequate water supplies and proper sewage disposal.

What are the symptoms of cholera?

People exposed to cholera might experience mild to severe diarrhea, occasional vomiting and dehydration.

How soon do symptoms appear?

Symptoms can appear within a few hours to 5 days after exposure, usually 2-3 days.

What is the treatment for cholera?

Because of the rapid dehydration that may result from severe diarrhea, replacement of fluids by mouth or intravenous route is critical. Antibiotics, such as tetracycline, may be used to shorten the duration of diarrhea and excretion of the organism.

Is there a vaccine for cholera?

A vaccine is available; however, it offers only brief and incomplete immunity and is not recommended for travelers. There are no cholera vaccination requirements for entry or exit in any Latin American country or the United States.

How can cholera be prevented?

The risk for cholera is low for U.S. travelers visiting areas with epidemic cholera. When simple precautions are observed, contracting the disease is unlikely. All travelers to areas where cholera has occurred should observe the following recommendations: Drink only water that you have boiled or treated with chlorine or iodine. Other safe beverages include tea and coffee made with boiled water and carbonated, bottled beverages without ice. Eat only foods that have been thoroughly cooked and are still hot or fruit that you have peeled

yourself. Avoid undercooked or raw fish or shellfish, including ceviche. Make sure all vegetables are cooked and avoid salads. Avoid foods and beverages from street vendors. Do not bring perishable seafood back to the United States.