Cholera
Table of Contents

Cholera

Fact Sheet (CDC)

Disease Case Report (CD-1) PDF Format Word Format

Cholera and Other Vibrio Illness Surveillance Report (CDC 52.79)

Missouri Outbreak Surveillance Report (CD-51)

Overview[1,2]

Cholera is an acute, diarrheal illness caused by infection of the intestine with the bacterium Vibrio cholerae serogroups O1 and O139. Although the infection is usually mild or asymptomatic, about 5% of those infected have a more severe illness. Symptoms include sudden onset of profuse, painless watery stools (described as rice-water stools), nausea, and profuse vomiting, without abdominal cramps or fever. Severe symptoms include rapid dehydration, acidosis, circulatory collapse, hypoglycemia, and renal failure, and, if left untreated, can rapidly lead to death.

Cholera is strongly linked to consumption of unsafe water, poor hygiene, poor sanitation and crowded living conditions. It is most common in developing countries, especially in India and sub-Saharan Africa. Manmade or natural disasters that disrupt sanitary facilities or water supplies can lead to epidemics.

Humans are the usual reservoir for Vibrio cholerae, although environmental foci are known to exist in coastal waters and estuaries in the U.S., Australia, and Bangladesh. Food contamination by infected food handlers has been the cause of several small outbreaks in the U.S. Person-to-person transmission is rare.

The incubation period ranges from a few hours to 5 days, with an average of 2-3 days. Cholera is usually communicable for only a few days after recovery, although occasionally a carrier state may persist for several months.

Although many cases of cholera occur worldwide every year from natural causes, cholera is also a potential bioterrorism weapon. All cases reported in Missouri in recent years have been from sources outside the United States. Contact your District Communicable Disease Coordinator or District Senior Epidemiology Specialist immediately if you suspect a source of infection originating in the United States or if you suspect that you are dealing with a bioterrorism situation.

For a complete description of cholera, please refer to the following texts:

- *Control of Communicable Diseases Manual*. (CCDM), American Public Health Association. 19th ed. 2008.
- American Academy of Pediatrics. *Red Book: 2009 Report of the Committee on Infectious Diseases.* 28th ed. 2009.

Case Definition[3]

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:
Confirmed: a clinically compatible case that is laboratory confirmed.

Comment:
Illnesses caused by strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should not be reported as cases of cholera. The etiological agent of a case of cholera should be reported as either *V. cholerae* O1 or *V. cholerae* O139.

Information Needed for Investigation

Verify the diagnosis. Diagnosis of cholera is made by isolation of the bacterium in culture. What laboratory tests were conducted? What were the results? What laboratory conducted the testing and what is their phone number? What are the patient's clinical symptoms? What is the name and phone number of the attending physician?

Establish the extent of illness. Determine whether household or other close contacts are, or have been, ill by contacting the health care provider, patient or family members. Obtain stool specimens, if symptomatic. Review surveillance data to determine whether there has been a recent increase in gastrointestinal illness in the same geographic area or institution. When cases related by time, place, or person are identified, efforts should be made to identify a common source.

When investigating a suspected outbreak of gastrointestinal illness of unknown etiology, see the Outbreaks of Acute Gastroenteritis Section.

Determine the five-day food and beverage intake history. Cholera has been transmitted in the U.S. from shellfish eaten raw. Outbreaks related to food handlers have been reported.

Determine whether the case had a history of recent foreign travel. Cholera has a relatively short incubation period, but the disease is common in Asia, Africa, and the countries of the former Soviet Union and is present in Latin America. Cholera is not endemic in North America and one case may be considered an outbreak.

Determine the presence of risk factors for spread of the disease.
- Does the case or a member of the case's household attend or work in childcare, food service, or healthcare?
- Does the case engage in sexual or other practices that would put him/her or others at increased risk?

Notification

- Contact the District Communicable Disease Coordinator, the District Senior Epidemiologist, or the Department of Health and Senior Services' Situation Room (DSR) at 800-392-0272 (24/7) immediately upon learning of a suspected case of cholera. If the source appears to be inside the U.S., call immediately.
- Contact the Section for Child Care Regulation at (573) 751-2450 if a case is associated with a child care facility.
- Contact the Section for Long-Term Care Regulation at (573) 526-8524 if a case is associated with a long-term care facility.
- Contact the Bureau of Health Facility Regulation at (573) 751-6303 if a case is associated with a hospital or hospital-based long-term care facility.

Control Measures

General:

- No vaccine is currently available in the United States. Antibiotic prophylaxis of contacts is not generally recommended in the U.S. but may be considered for household contacts with a high probability of fecal exposure.[2,4]
- Appropriate antibiotic therapy reduces the length of the time the organism is excreted, and decreases the duration of diarrhea and fluid loss. It should only be considered for people who are moderately to severely ill. Oral doxycycline as a single dose, or tetracycline for 3 days are the drugs of choice for cholera. Treatment may differ for children less than 8 years of age. If the strain is resistant to tetracycline, alternative antibiotics are ciproflaxin, ofloxacin, or trimethoprim-sulfamethoxazole.[1,2]
- A search for unreported cases is recommended only among household members or those exposed to a possible common source.

Food handlers:

- Appropriate antibiotic therapy reduces the length of the time the organism is excreted, and decreases the duration of diarrhea and fluid loss.
- Food handlers should be excluded from the preparation of food until three consecutive stool specimens, collected 24 hours apart and after symptoms cease, are negative for *V. cholerae*. If the patient has followed a prescribed course of appropriate antibiotic therapy, a single negative stool specimen collected after symptoms cease is sufficient for return to food preparation.

Child care:

- Appropriate antibiotic therapy reduces the length of the time the organism is excreted, and decreases the duration of diarrhea and fluid loss.
- Children and staff should be excluded until asymptomatic. Staff that handle food should adhere to the control recommendations under "Food Handlers" above.

Health Care:

- Appropriate antibiotic therapy reduces the length of the time the organism is excreted, and decreases the duration of diarrhea and fluid loss.
- Health care workers should be excluded from patient care until asymptomatic. Although person-to-person transmission is rare, scrupulous attention to hand washing should be observed.

For additional information about control measures, please see the References.

Laboratory Procedures

Testing of stool specimens for *Vibrio cholerae* is not routinely offered at the State Public Health Laboratory. Preparations must be made to test these specimens. Contact the District Communicable Disease Coordinator, the District Senior Epidemiology Specialist, or the Bureau of Communicable Disease Prevention and Control for directions prior to collecting and shipping any specimens to the State Public Health Laboratory.

Reporting Requirements

Cholera is a Category 2 (A) disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services within one (1) calendar day of first knowledge or suspicion.

1. For confirmed or probable cases, complete a Disease Case Report (CD-1).
2. Complete a "Cholera and Other Vibrio Illness Surveillance Report" (CDC 52.79).
3. Attach an additional sheet with a five-day food and beverage history for each case.
4. Entry of the completed CD-1 into the Websurv database negates the need for the paper CD-1 to be forwarded to the District Health Office.
5. Send the completed secondary investigation form(s) to the District Health Office.
6. All outbreaks or suspected outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the District Communicable Disease Coordinator or District Senior Epidemiology Specialist. This can be accomplished by completing the "Missouri Outbreak Surveillance Report" (CD-51).
7. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the District Communicable Disease Coordinator.

References

1. "Cholera and other vibrioses (Vibrio cholerae serogroups O1 and O139)." *Control of Communicable Diseases Manual*. 19th Ed. Heymann D. Washington, D.C: American Public Health Association, 2008. Print.
2. "Vibrio Infections--Cholera." *Red Book: 2009 Report of the Committee on Infectious Diseases*. 28th Ed. Pickering, LK. Elk Grove Village, IL: American Academy of Pediatrics, 2009. Print.
3. "Case definitions for infectious conditions under public health surveillance." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/cholera_current.htm. (4/12)
4. "Vibrio cholerae." *Principles and Practice of Infectious Diseases*. 7th Ed. Mandell G, Bennett J and Dolin R. Philadelphia: Elsevier, Churchill, Livingstone, 2010. Print.