

PUBLIC HEALTH REFERENCE SHEET

Cholera



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| Name | <i>Vibrio cholera</i> O1 or O139 |
| Reservoir & Transmission | Humans (fecal) and the environment (associated with copepods or other zooplankton in brackish water or estuaries). Ingestion of contaminated food or water |
| Incubation Period | From a few hours to 5 days, usually 2-3 days |
| Common Symptoms | Diarrhea, vomiting, dehydration |
| Gold Standard Diagnostic Test | In areas with limited laboratory testing: Crystal [®] VC Rapid Diagnostic Test (RDT) for initial recognition, followed by culture by fecal sample for isolation and identification In areas with full laboratory testing: culture of a stool specimen |
| Risk Groups | Lowest socioeconomic groups, particularly people without access to safe drinking water and adequate sanitation Persons with blood group O are more vulnerable to severe cholera Breastfed infants have a reduced risk |
| Geographic Significance | Present worldwide; particularly Sub-Saharan Africa, the Indian Subcontinent, and Southeast Asia. In 2022, cholera outbreaks affected several regions of the world, including West, Central, and Southern Africa, the Horn of Africa, the Caribbean, the Middle East, Southeast Asia, and the Western Pacific. |

What is cholera?

Cholera is an acute, diarrheal illness caused by an intestinal infection with the bacterium *Vibrio cholerae*.

What is the occurrence of cholera?

An estimated 2.9 million cases and over 95,000 deaths occur globally each year. Cholera is most likely to be found and spread in places with inadequate water treatment, sanitation, and hygiene. The cholera bacterium may 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 U.S. have contracted cholera after eating raw or undercooked shellfish from the Gulf of Mexico.

How is cholera transmitted?

The cholera bacterium is usually found in water or food sources that have been contaminated by feces from a person infected with 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 that contaminates water and/or food. The disease can disseminate rapidly in areas with inadequate sewage and drinking water treatments. The disease is not likely to spread directly from one person to another; casual contact with an infected person is not a risk for becoming ill.

What are the signs and symptoms of cholera?

The infection is often mild or without symptoms but can sometimes be severe. Approximately 5–10% of infected persons will have severe disease characterized by profuse watery diarrhea, vomiting, and leg cramps. Rapid loss of body fluids leads to dehydration and shock. Without treatment, death can occur within hours.

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How is cholera diagnosed?

The diagnosis is made by culturing the organism from the stool using Thiosulfate-citrate-bile salts-sucrose (TCBS) agar. Do not wait for a positive culture before starting treatment.

How is cholera treated?

Administration of fluids for volume replacement treats dehydration, shock, and acidosis. Antibiotic treatment is less important but will decrease the duration of illness. Only a small proportion, about 5–10%, of persons infected with *Vibrio cholerae* O1 or O139 may require treatment. Patients with severe dehydration or intractable vomiting need intravenous therapy with Ringer's lactate solution. Intravenous fluids should be given quickly to restore the circulation, followed by oral fluids as soon as possible. Rehydration with oral salt solution and intravenous fluids in a timely manner and in adequate volumes can reduce fatalities to under 1% of all patients. Breastfed children should continue to breastfeed. Avoid other types of fluids, such as juice, soft drinks, and sports drinks.

How can cholera be prevented?

All people in areas where cholera is occurring or has occurred should observe the following recommendations:

- Drink only bottled, boiled, or chemically-treated water and bottled or canned carbonated beverages. When drinking from bottles, make sure that the seal has not been broken. To disinfect water: boil for 1 minute or filter the water and add 2 drops of household bleach or ½ of an iodine tablet per liter of water.
- Use bottled, boiled, or chemically-treated water to wash dishes, brush teeth, wash and prepare food, or make ice.
- Avoid tap water, fountain drinks, and ice cubes.
- Wash hands often with soap and clean water.
- If water and soap are not available, use an alcohol-based hand cleaner (with at least 60% alcohol). Clean hands before preparing food, eating, and after using the bathroom.
- Eat foods that are packaged or that are freshly cooked and served hot. Do not eat raw and undercooked meats and seafood or unpeeled fruits and vegetables.
- Prevent cross-contamination between feces, water, and food sources.

What are some public health considerations?

- Specify the serogroup (*V. cholerae* O1 or *V. cholerae* O139) if known.
- Document relevant travel and deployment history occurring within the incubation period (0–5 days).

NOTE: Not all *V. cholerae* O1 or O139 is reportable. Only *V. cholerae* O1 or O139 that produces cholera toxin is reportable.

References:

- “Cholera,” Centers for Disease Control and Prevention (CDC), last reviewed November 14, 2022. <https://www.cdc.gov/cholera/>
- Defense Health Agency. 2023. *Armed Forces Reportable Medical Events Guidelines and Case Definitions*. <https://www.health.mil/Reference-Center/Publications/2022/11/01/Armed-Forces-Reportable-Medical-Events-Guidelines>
- Heymann, David L. *Control of Communicable Diseases Manual*. 21st Edition. 2022. Washington, DC: APHA Press.

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