Water-borne and Vector-borne diseases
Epidemiology

- Globally, cholera cases have increased steadily since 2005 and the disease still occurs in many places including **Africa, Southeast Asia,** and **Haiti.**

- An estimated 2.9 million cases and 95,000 deaths occur each year around the world.

- CDC responds to cholera outbreaks across the world using its **Global Water, Sanitation and Hygiene (WASH)** expertise.
Epidemiology

- Modern sewage and water treatment have effectively eliminated cholera in most countries.

- Countries affected by war, poverty and natural disasters have the greatest risk for a cholera outbreak.
Etiologic Agent

- Cholera is an acute, diarrheal illness caused by infection of the intestine with the toxigenic bacterium *Vibrio cholerae* serogroup O1 or O139.
Etiologic Agent

- Gram negative, curved bacteria
- Resembling letter “V”
Mode of Transmission

• Cholera germs are found in the feces (poop) of infected people.

• Cholera is spread when feces (poop) from an infected person gets into the water people drink or the food people eat.
Mode of Transmission

- Cholera is most likely to be found and spread in places with inadequate water treatment, poor sanitation, and inadequate hygiene.

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Clinical Signs and Symptoms

- Profuse watery diarrhea, vomiting and leg cramps
- Look like cloudy rice water
- Can cause death from dehydration (rapid loss of water and salts from the body) within hours if not treated.
Supportive Management

• If you have oral rehydration solution (ORS), start taking it now; it can save your life.

• Go immediately to the nearest health facility.

• Continue to drink ORS at home and while you travel to get treatment.

• Continue to breastfeed your baby if they have watery diarrhea, even when traveling to get treatment.
Prevention and Control

• Drink and use safe water.

• Safe water is water that is bottled with an unbroken seal, has been boiled, or has been treated with a chlorine product.

• Wash hands often with soap and safe water.
Prevention and Control

• Use latrines or bury your feces (poop), do not defecate in any body of water.

• Cook food well (especially seafood), eat it hot, keep it covered, and peel fruits and vegetables.

• Clean up safely—in the kitchen and in places where your family bathes and washes clothes.
Protect Yourself from Cholera

1) Drink and use safe water.*
   - Bottled water with unbroken seals and canned/bottled carbonated beverages are safe to drink and use.
   - Use safe water to brush your teeth, wash and prepare food, and to make ice.
   - Clean food preparation areas and kitchenware with soap and safe water and let dry completely before reuse.

* Piped water sources, drinks sold in cups or bags, or ice may not be safe and should be boiled or treated with chlorine.

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Protect Yourself from Cholera

To be sure water is safe to drink and use:

- Boil it or treat it with a chlorine product or household bleach.
  - If boiling, bring water to a complete boil for at least 1 minute.
  - To treat your water with chlorine, use one of the locally available treatment products and follow the instructions.
  - If a chlorine treatment product is not available, you can treat your water with household bleach. Add 8 drops of household bleach for every 1 gallon of water (or 2 drops of household bleach for every 1 liter of water) and wait 30 minutes before drinking.
- Always store your treated water in a clean, covered container.

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Protect Yourself from Cholera

2) Wash your hands often with soap and safe water.

- Before you eat or prepare food.
- Before feeding your children.
- After using the latrine or toilet.
- After cleaning your child’s bottom.
- After taking care of someone ill with diarrhea
Protect Yourself from Cholera

3) Use latrines or bury your feces (poop); do not defecate in any body of water.

- Use latrines or other sanitation systems, like chemical toilets, to dispose of feces.
- Wash hands with soap and safe water after defecating.
- Clean latrines and surfaces contaminated with feces using a solution of 1 part household bleach to 9 parts water.
What if I don’t have a latrine or chemical toilet?

• Defecate at least 30 meters (98 feet) away from any body of water and then bury your feces.

• Dispose of plastic bags containing feces in latrines, at collection points if available, or bury it in the ground. Do not put plastic bags in chemical toilets.

• Dig new latrines or temporary pit toilets at least a half-meter (1.6 feet) deep and at least 30 meters (98 feet) away from any body of water.
4) Cook food well, keep it covered, eat it hot, and peel fruits and vegetables.*

• Boil it, Cook it, Peel it, or Leave it.

• Be sure to cook seafood, especially shellfish, until it is very hot all the way through.

* Avoid raw foods other than fruits and vegetables you have peeled yourself.
5) Clean up safely—in the kitchen and in places where the family bathes and washes clothes

- Wash yourself, your children, diapers, and clothes, 30 meters (98 feet) away from drinking water sources.