

WATERBORNE INFECTIONS



HOW WE KEEP AMERICANS SAFE

Water is essential for life but can also lead to illness when it is contaminated by disease-causing organisms. Examples of **waterborne disease** include:

- Cholera, a severe diarrheal disease, often caused by drinking *Vibrio cholerae*-contaminated water.
- An infection called microbial keratitis, which can occur when germs invade the eye. These germs can be associated with improper use and care of contact lenses.
- Cryptosporidiosis, giardiasis, and other gastrointestinal diseases caused by swallowing contaminated water.
- An infection caused by the rare but often fatal brain-eating amoeba (*Naegleria fowleri*) that can occur when people go swimming or diving in warm freshwater places like lakes and rivers, and contaminated water enters through the nose.

Almost 1 in 8
pool inspections
conducted during
2013 resulted in
an immediate
closure.

THE WORK OF CDC'S

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) is about protecting America's health, safety, and security. NCEZID is ground zero when there's an outbreak of infectious disease. We have world-class scientists, researchers, laboratories, and emergency responders to protect people from waterborne infections.



National Center for
EMERGING and ZONOTIC INFECTIOUS DISEASES
Division of Foodborne, Waterborne, and Environmental Diseases





Crypto (short for *Cryptosporidium*, pictured here) is the leading cause of waterborne disease outbreaks.

What we're doing:

NCEZID has world-class scientists who are experts in the fields of preventing and controlling waterborne and fungal diseases. Recent accomplishments include:

- Tested more than 150 clinical samples in the US for **free-living amebas**, including *Naegleria fowleri*, the “brain-eating” amebas.
- Launched **CryptoNet**, the first system that uses molecular fingerprints for tracking a parasite. *Cryptosporidium* is a major cause of US waterborne disease outbreaks.
- Released the 2nd edition of the **Model Aquatic Health Code** to help state and local health departments prevent drowning, injuries, and the spread of recreational water illnesses at public swimming pools and spas.
- **Tracking waterborne diseases nationally**, and investigating the causes and sources of diseases and outbreaks.
- Provided epidemiological field support to ministries of health in multiple countries to **prevent and control outbreaks of cholera and typhoid**.
 - For example, CDC **responded to an outbreak** of cholera in Ethiopia. Severe malnutrition and an acute shortage of safe water attributable to a drought complicated the outbreak.

Decoding the MAHC
The Model Aquatic Health Code

The MAHC is a free resource, based on science and best practices, to help state and local health professionals make swimming and other water activities healthier and safer.

300 million
Trips people in the U.S. make to pools and other swimming areas each year

People who swim can enjoy

- Increased physical & mental health
- Lower risk for chronic diseases, joint & muscle pain, death
- Increased quality of life & decreased disability in older age



NCEZID epidemiologist greets children in a northern Tanzania village during a cholera outbreak rapid response.