



Global Burden of Diarrheal Diseases

What is a diarrheal illness?

Diarrheal illness is defined as three or more loose or liquid stools per day, or more frequent occurrence of stools than is normal for an individual. Diarrhea can be caused by infectious diseases, changes in diet, such as eating more than usual amounts of certain foods, and use of some medications. Infectious causes include viruses, bacteria, and parasites. Some examples of infectious causes of diarrhea include:

- Viruses: norovirus, rotaviruses, enteric adenoviruses, astroviruses, caliciviruses
- Bacteria: *Shigella*, *Salmonella*, *Campylobacter*, shiga-toxin producing *E. coli*
- Parasites: *Giardia*, *Cryptosporidium*

Who is at risk for a diarrheal illness?

Every year, there are approximately 1.7 billion cases of diarrheal disease worldwide. Diarrheal disease is the second leading cause of death in children under five years old worldwide, and is responsible for killing 760,000 children every year. The pediatric death toll due to diarrheal illnesses exceeds that of AIDS, tuberculosis, and malaria combined. In developing countries, children under three years old experience on average three episodes of diarrhea every year. People of all ages are susceptible to the viruses, bacteria and parasites that cause diarrhea. Complications are more likely to occur in children younger than 5, in the elderly or in people with compromised immune systems.

What are the symptoms of diarrheal illness?

The symptoms of diarrhea may include frequent loose or watery stools, abdominal cramps and tenderness, fever, generally not feeling well or blood in the stool. Individuals can be infected and can pass the germs to others with minimal signs or symptoms. Most people who die due to diarrheal illness actually die from severe dehydration and fluid loss. Children who are malnourished or have impaired immunity are most at risk of life-threatening diarrheal illness.

How soon do symptoms appear?

Symptoms may be variable depending on the cause of diarrhea. Disease-specific fact sheets can be accessed on the Oklahoma State Department of Health, Acute Disease Service website at <http://ads.health.ok.gov/>.

How are diarrheal illnesses spread?

Diarrheal disease most often results from contaminated food and water sources. Worldwide, around 780 million people lack access to clean, safe water and 2.5 billion have no access to basic sanitation. Bacteria, viruses, or parasites are spread from the stools of infected people. People who have diarrhea and do not wash their hands after they use the bathroom, particularly while they have diarrhea, can contaminate food, water, surfaces, toys, and other objects, which others then touch or put into their mouths. Infected food handlers that do not wash their hands well with soap and water after using the bathroom may contaminate food. Some bacteria, viruses, or parasites can also be spread through recreational water such as swimming pools, hot tubs, fountains, lakes, rivers, springs or streams that have been contaminated with sewage or feces.

What can be done to prevent diarrheal illnesses?

- Children and adults with diarrhea should not attend work or school until at least 24 hours after the diarrhea has stopped.
- Use good hand hygiene habits such as washing with warm water and soap for 15-20 seconds. This is the only way to effectively remove substances from soiled hands.
- Good hand washing means: wet your hands with clean running water and apply soap; rub hands together to form a lather and scrub all surfaces; continue rubbing hands together for 20 seconds (imagine singing "Happy Birthday" twice); rinse hands with water; and dry hands with paper towels or an air dryer. If possible, use a paper towel to turn off the faucet and avoid touching anything in the bathroom after you have cleaned your hands.