

Common water and sanitation-related diseases

Diarrhea

Diarrhea is caused by a variety of micro-organisms including viruses, bacteria and protozoans. It causes a person to lose both water and electrolytes, which leads to dehydration and, in some cases, to death.

About 4 billion cases of diarrhea per year cause 1.8 million deaths, over 90 percent of them (1.6 million) among children under five. Repeated episodes of diarrhea make children more vulnerable to other diseases and malnutrition.

Diarrhea is the most important public health problem directly related to water and sanitation. The simple act of washing hands with soap and water can cut diarrhea-related disease by one-third. Next to providing adequate sanitation facilities, it is the key to preventing waterborne diseases.

Arsenic poisoning

Long-term exposure to low concentrations of arsenic in drinking-water can cause painful skin keratosis (hardened lesions) and can result in cancers of the skin, lungs, bladder and kidney. Millions of people are potentially in danger from arsenic poisoning since they rely on water supplies that are contaminated with arsenic (mainly from natural sources) and do not have a safe water alternative or are unaware of the risks.

Cholera

Cholera is an acute bacterial infection of the intestinal tract. It causes severe attacks of diarrhea that, without treatment, can quickly lead to acute dehydration and death. Cholera is a world-wide problem, especially in emergency situations. It can be prevented by access to safe drinking water, sanitation and good hygiene behavior (including food hygiene). In 2002, over 120,000 cholera cases were reported worldwide.

Fluorosis

Fluorosis is a serious bone disease caused by high concentrations of fluoride occurring naturally in groundwater. Fluorosis is endemic in at least 25 countries across the globe. The total number of people affected is not known, but a conservative estimate would number in the tens of millions.

Guinea worm disease

People contract the disease (also known as Dracunculiasis) when drinking water contaminated with *Dracunculus* larvae. The larvae mature into large (up to a meter long) adult Guinea worms and leave the body after about a year, causing debilitating ulcers.

The incidence of cases of Guinea worm disease is steadily decreasing worldwide as a result of a concerted international initiative. However, in 2002 there were still 50,000 cases reported in a total of 13 countries in Africa.

HIV/AIDS

A hygienic environment, clean water and adequate sanitation are key factors in preventing opportunistic infections associated with HIV/AIDS, and in the quality of life of people living with the disease. AIDS-affected people are more susceptible to water-related diseases than healthy individuals, and they become sicker from these infections than people with healthy immune systems. Maintaining a healthy environment is essential to safeguarding the health, quality of life and productivity of people living with HIV/AIDS.

Intestinal worms

People become infected with intestinal parasitic worms (also known as helminthes) through contact with soil that has been contaminated with human feces from an infected person, or by eating contaminated food.

Intestinal worms infect about 10 per cent of the population in the developing world and, depending upon the severity of the infection, lead to malnutrition, anemia or retarded growth. Children are particularly susceptible and typically have the largest number of worms. About 400 million school-age children are infected by roundworm, whipworm and/or hookworm. In fact, roundworm and whipworm alone are estimated to affect one-quarter of the world's population.

Malaria

Malaria is a serious disease caused by a parasite carried by certain types of mosquitoes. Humans are infected when bitten by the mosquitoes. Each year, there are 300 million to 500 million cases of malaria throughout the world and about 1 million child deaths. Reducing the mosquito population in households and communities by eliminating standing water (caused by poor drainage and uncovered water tanks) can be an important factor in reducing malaria cases.

Schistosomiasis

Schistosomiasis (also known as bilharzia) is a disease caused by parasitic worms. At various stages of the life cycle, worms and their eggs live in certain types of freshwater snails, water (where they can survive for 48 hours) and human hosts. They penetrate the skin of people swimming, bathing or washing in contaminated water. They then cause infection and can eventually damage the liver, intestines, lungs and bladder.

About 200 million people are infected with schistosomiasis, 20 million of whom suffer severe consequences. Studies have found that adequate water supply and sanitation – which reduces contact with contaminated surface water – could reduce infection rates by 77 per cent.

Trachoma

Trachoma is an eye infection spread mainly through poor hygiene caused by lack of adequate water supplies and unsafe environmental sanitation conditions. About 6 million people are blind today because of trachoma. It affects women two to three times more than men. Children are

also especially susceptible. Studies have found that providing adequate water supplies could reduce infection rates by 25 per cent.

Typhoid

Typhoid fever is a bacterial infection caused by ingesting contaminated food or water. Symptoms are characterized by headaches, nausea and loss of appetite. About 12 million people are affected by typhoid every year.