

CDC's Global Water, Sanitation, and Hygiene (WASH) Program

Inadequate water, sanitation, and hygiene (WASH) conditions exist in a range of settings, from temporary refugee camps to permanent housing in large cities. CDC is engaged in global WASH activities that respond to needs across that spectrum and help prevent global water-, sanitation-, and hygiene-related disease.

Water is considered to be the most important resource for sustaining ecosystems, which provide life-supporting services for people, animals, and plants.¹ Because contaminated water is a major cause of illness and death, water quality is a determining factor in human poverty, education, and economic opportunities.²

Unfortunately, worldwide water quality is declining, threatening the health of ecosystems and humans worldwide.² Various factors influence this deterioration, including population growth, rapid urbanization, land use, industrial discharge of chemicals, and factors resulting from climate change.

Today, hundreds of millions of people do not have access to improved sources of drinking water,³ leaving them at risk for water-, sanitation-, and hygiene- (WASH) related diseases. Worldwide, 1.5 million children die annually from diarrheal illnesses that are caused by unsafe water, poor sanitation, and inadequate hygiene³. Devastating epidemics of cholera, such as the 2008-2009 outbreak in Zimbabwe that caused more than 98,000 cases of illness and 4,200 deaths, are only the “tip of the iceberg,” as most waterborne diseases, illnesses, and deaths are never reported.⁴

Responding to these challenges requires a spectrum of interventions. The prevention or minimization of water pollution is critical to improving drinking water quality. Interventions to improve drinking water quality range from disinfecting water at the household level (point-of-use (POU) treatment) to water management at the community level (Water Safety Plans (WSPs)). In some situations, more than one type of intervention is needed. For example, both POU treatment and WSPs may be needed for piped water systems with intermittent service. When this happens, the different interventions are complementary, not competitive.

1. The United Nations Environmental Programme (2009), Report: Water security and ecosystem services: The critical connection. UNEP, Nairobi, Kenya. ISBN: 92-807-3018-0.
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3. World Health Organization and United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation (2008), Progress on Drinking Water and Sanitation: Special Focus on Sanitation. UNICEF: New York and WHO: Geneva. ISBN: 92-806-4313-8.
4. Mintz ED, Guerrant RL. A Lion in Our Village – The Unconscionable Tragedy of Cholera in Africa. N Engl J Med 2009;360:1060-1063.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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1. International Emergency and Refugee Health Activity

Worldwide, there are approximately 25 million refugees, internally displaced, or emergency-affected persons. Refugees and displaced persons often live in crowded conditions where access to safe drinking water and sanitary services is extremely poor.

CDC's International Emergency and Refugee Health Activity:

- » Works with U.S. Government agencies, United Nations (UN) agencies, and non-governmental organizations (NGOs) to reduce death and disability in emergency-affected populations
- » Provides technical assistance to the U.S. Office of Foreign Disaster Assistance in responding to acute emergencies
- » Assists the Office of the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Children's Fund (UNICEF) in monitoring and evaluating water, sanitation, and hygiene programs in refugee camps



2. Point-of-Use Water Treatment Activity: The Safe Water System

In areas where access to safe water, appropriate wastewater management, and adequate sewage systems are not feasible, CDC's Safe Water System (SWS) empowers people to improve and protect the quality of their drinking water. The SWS allows individuals to treat and store water in their homes using simple and inexpensive technologies. It consists of four steps:

Point-of-use treatment of contaminated water

- » Safe water storage
- » Improved hygiene
- » Behavior change techniques

3. Community Hygiene Activity

When people in resource-poor settings wash their hands with soap, they can reduce their risk of diarrheal and respiratory disease by approximately 50%.^{5,6} CDC's Community Hygiene Activity works to understand and promote effective, accessible, and inexpensive hygiene measures to prevent diseases that claim millions of lives each year.

The Community Hygiene Activity focuses on three areas:

- » Health impacts of handwashing with soap
- » Tools for measuring handwashing behavior
- » Models of handwashing behavior change



4. WASH Away Neglected Tropical Diseases (NTDs) Activity

CDC's WASH Away Neglected Tropical Diseases (NTDs) Activity focuses on the impacts that improved water, sanitation, and hygiene (WASH) has on various diseases. This activity:

- » Evaluates WASH effectiveness in reducing disease;
- » Integrates WASH interventions within existing programs treating NTDs and diarrheal disease
- » Assesses the enabling factors and barriers to WASH delivery and sustainability.

5. Environmental Global WASH Activity

In areas where community water systems, sanitation construction, and hygiene education are existing or feasible, CDC's Environmental Global WASH Activity works with public health partners to measure and improve the impact and sustainability of these important interventions.

The Environmental Global WASH Activity:

- » Evaluates the sustainability of WASH interventions over the long term (5 – 10 years);
- » Improves drinking water quality through the implementation of Water Safety Plans (WSPs) in water systems; and
- » Researches the public health impacts of sanitation programs.



5. Luby SP, et al. Effect of intensive handwashing promotion on childhood diarrhea in high-risk communities in Pakistan: A randomized controlled trial. *JAMA* 2005;291(21):2547-54.

6. Luby SP, et al. Effect of handwashing on child health: A randomised controlled trial. *Lancet* 2005;366(9481):225-33.