

CDC and the Safe Water System

Why is safe water a public health issue?

Worldwide, 780 million people do not have access to improved drinking water supplies and an estimated 2.5 billion people, half of the developing world, lack access to adequate sanitation. Every year, diarrheal diseases (such as cholera) kill 801,000 young children—more children than AIDS, malaria, and measles combined—making diarrheal disease the second leading cause of death among children under five. Eighty-eight percent (88%) of deaths from diarrheal diseases are attributable to unsafe water, inadequate sanitation, and insufficient hygiene.

Diarrhea is not the only disease spread through unsafe water, inadequate sanitation, and insufficient hygiene practices. Diseases like schistosomiasis and guinea worm disease can be reduced almost 80% with improved hygiene, sanitation, and safe water access. In fact, access to safe water and improved hygiene and sanitation has the potential to prevent at least 9.1% of the global disease burden and 6.3% of all deaths.



CDC and the Safe Water System (SWS)

To address the global burden of diarrheal disease, CDC and the Pan American Health Organization (PAHO) developed the **Safe Water System (SWS)**, which protects households from contaminated water by promoting behavior change and providing affordable and sustainable solutions. The SWS increases access to safe water by helping individuals treat and safely store water in homes, health facilities, and schools.



The SWS encompasses three steps:

1. Household water treatment;
2. Safe storage of the treated water; and,
3. Behavior change communication to improve hygiene, sanitation, and water and food handling practices

1. Household Water Treatment

Household water treatment (treatment that happens at the point of water collection or use, rather than at a large, centralized location) improves water quality and reduces diarrheal disease in developing countries.

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Determining the best water treatment option to use is based on existing water and sanitation conditions, water quality, cultural acceptability, implementation feasibility, availability of technology, and other local conditions.

Household Water Treatment Options:

- Chlorination
- Flocculant/Disinfectant Powder
- Solar Disinfection
- Ceramic Filtration
- Slow Sand Filtration



2. Safe Storage

Safe water storage means that once the water has been treated and is safe to use, it is stored in a container that protects the water from recontamination. It is preferable to store treated water in plastic, ceramic, or metal containers with the following characteristics, which serve as physical barriers to recontamination:

- A small opening with a lid or cover that discourages users from placing potentially contaminated items, such as hands, cups, or ladles, into the stored water;
- A spigot or small opening to allow easy and safe access to the water without requiring the insertion of hands or objects into the container; and,
- A size appropriate for the household water treatment method, with permanently attached instructions for using the treatment method and for cleaning the container.

3. Behavior Change Communications

Behavior change communications focused on these topics are crucial to ensuring the sustainability of the SWS:

- Regular handwashing, improved sanitation, and improved hygiene
- Safe food and water handling practices, which help prevent contamination of treated, safely stored drinking water and reduce the risk of waterborne, foodborne, and person-to-person transmission of diarrheal and other diseases.

SWS Impact

Safe Water System (SWS) programs have been **implemented in over 30 countries** around the world. Through the combined efforts of public and private partnerships, **a volume of products sufficient to treat 90 billion liters of water (as of 2010) has been sold since 1998**. SWS programs foster behavior change and target the most vulnerable populations through linkages with antenatal care clinics, schools, PEPFAR HIV/AIDS programs, community-based programs, and faith-based programs, among others.