

Direct from CDC

Environmental Health Services Branch

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Water Safety Plans: CDC's Role

Editor's note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the Journal.

In this column, EHSB and guest authors from across CDC will highlight a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health. EHSB's objective is to strengthen the role of state, local, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health. The services being developed through EHSB include access to topical, relevant, and scientific information; consultation; and assistance to environmental health specialists, sanitarians, and environmental health professionals and practitioners.

The conclusions in this article are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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Working with numerous public health partners, the Centers for Disease Control and Prevention (CDC) recently began a new initiative to support implementation of Water Safety Plans (WSPs) in Latin American and Caribbean countries. WSPs are a relatively new methodology being promoted by the World Health Organization (WHO) to assess and manage risk factors in drinking water systems from source to consumer (Figure 1). Each year, poor water quality and inadequate sanitation and hygiene account for 1.8 million deaths worldwide among children. These poor water conditions have significant economic effects, not only due to lost wages from illness but also from time spent gathering water (mostly by women and girls) for household use. In Latin America and the Caribbean, an estimated 50 million persons lack access to an improved water supply.

WSPs are a preventive approach conceptually similar to applying Hazard Analysis and Critical Control Point (HAACP) principles to food safety activities. A WSP is a holistic, systematic, and integrated management approach to identify and prioritize potential threats to water quality at each step in a specific system's water supply chain and to implement best practices to mitigate those threats and ensure drinking-water quality. This is in contrast to many current standards-based approaches that are responsive in nature and often only identify water-quality problems or health threats after they have appeared in a drinking water system.

WSP Objectives and Benefits

A WSP aims to help drinking-water providers and other stakeholders improve water quality and consistently meet established health-based targets by

- controlling the contamination of source waters through managing activities in the watershed or around a wellhead;
- optimizing the removal or inactivation of contaminants during treatment; and
- preventing recontamination during distribution, storage, and handling.

The WSP approach to ensuring a safe water supply is flexible and accessible. It also

- identifies opportunities for low-cost improvements to operations and management practices that can enhance water safety, improve efficiency, and reduce expenses;
- improves stakeholders' understanding of the complete water supply chain and its vulnerabilities;
- improves communication and collaboration between key stakeholder groups, such as water providers, consumers, regulatory authorities, and commercial, environmental, and health sectors; and
- helps substantiate and prioritize capital improvement needs and leverage financial support.

A key feature of WSPs is their efficacy for expanding drinking-water-protection collaborations among a range of stakeholders broader than only water suppliers. For example, in Latin American and Caribbean countries, where CDC's current WSP efforts are focused, intermittent water service is typical; therefore, most households store water. Under such conditions, bringing consumers

into the process and identifying hazards that could compromise drinking water quality after it reaches households (e.g., contamination associated with water collection, storage, and treatment practices within the home) becomes crucial for protecting public health. Thus, water consumers as well as water suppliers become WSP stakeholders.

In addition, similar to an HACCP plan, a WSP should be viewed as an opportunity for continual improvement during an ongoing process, rather than a one-time exercise in writing a plan that is never incorporated into daily practice. Drinking water systems are dynamic, often with frequently changing source conditions, and a WSP is a dynamic management tool that can and should be updated to reflect changing conditions.

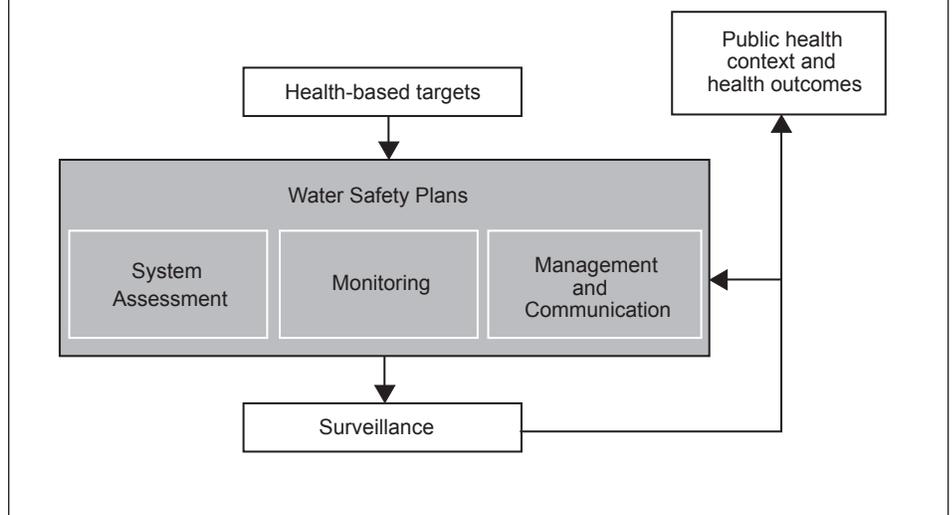
Growing Worldwide Application of WSPs

Communities in almost every region of the world have implemented WSPs, including Africa, the Americas, Asia, Europe, Australia, and the Western Pacific. In Latin American and Caribbean countries, pilot WSPs—many with CDC participation—have been implemented or are being initiated in

- Buenos Aires, Argentina;
- Tarija, Bolivia;
- Vicosa, Brazil;
- Linden, Guyana;
- San Pedro Sula, Honduras;
- Spanish Town, Jamaica;
- Mabouya Valley, St. Lucia;
- Dolores, Uruguay;
- Huaquillas, Ecuador; and
- Aguas Verdes, Peru.

FIGURE 1

Water Safety Plan Framework



In addition, CDC is engaged with partners, including WHO, the Pan-American Health Organization, the International Water Association, and the Inter-American Society of Sanitary and Environmental Engineers (AIDIS) in creating a regional network to support implementing WSPs. This network was launched at the AIDIS annual conference in Santiago, Chile, in October 2008 and encompasses elements of advocacy, communication, research, and supporting implementation of WSPs.

Although WSPs are not widely used in the U.S., the principles and key features noted previously can be used to help ensure drinking water safety in many of the small U.S. water systems that environmental health practi-

tioners often work in. For more information on WSPs (including examples of completed WSPs), visit the WSPortal at <http://www.who.int/wsportal>. Chapter 4 in the third edition of WHO's *Guidelines to Drinking Water Quality* includes a section on the WSP approach and can be downloaded at http://www.who.int/water_sanitation_health/dwq/gdwq3rev. 🌐

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