How Are Public Health Goals Used to Set Regulatory Standards for Chemicals in Drinking Water?

PHGs are necessary guides for making decisions about the levels of chemical contaminants in drinking water, but these guidance levels are just one element that SWRCB must consider when maintaining the quality of drinking water. By law, SWRCB must set the state's regulatory standards, known as *Primary Maximum Contaminant Levels* (MCLs), as close as possible to the PHG levels that OEHHA establishes. However, SWRCB must also consider the cost and technological feasibility of treating or preventing chemical contamination.

The Calderon-Sher Safe Drinking Water Act requires OEHHA to develop a PHG for each drinking water contaminant that is regulated with an MCL. OEHHA must also develop a PHG before SWRCB can establish an MCL for a contaminant for the first time. SWRCB must review a primary MCL at least every five years and amend it, if necessary, to make it as close to the corresponding PHG as is feasible. SWRCB could amend an MCL if the PHG evaluation indicates that the contaminant is more or less toxic than was previously believed, or if new technology is available to reduce concentrations to levels closer to the PHG.

Is Water Safe to Drink if Contaminant Levels Exceed Public Health Goals?

As long as drinking water complies with all MCLs, it is considered safe to drink, even if some contaminants exceed PHG levels. A PHG represents a health-protective level for a contaminant that SWRCB and California's public water systems should strive to achieve *if* it is feasible to do so. However, a PHG is *not* a boundary line between a "safe" and "dangerous" level of a contaminant, and drinking water can still be considered acceptable for public consumption even if it contains contaminants at levels exceeding the PHG.

How Can the Public Learn More About Contaminants in the Water?

California law requires that public water systems inform consumers about the quality of their drinking water through the following reports:

Annual Consumer Confidence Reports
Public water systems are required to send each customer an annual consumer confidence report that describes the source of the water supply and any contaminants detected in it. The report must list the current level of a contaminant as well as its PHG and primary MCL. The report must also disclose if an MCL was exceeded and include a plainly worded statement of associated health concerns.

Exceedance Reports
Water systems with more than 10,000 service connections are legally required to prepare an exceedance report every three years if one or more chemical contaminants exceed PHG levels. The report provides information on health risks posed by the contaminants as well as the costs and technology needed to reduce the contaminants to the PHG level. The report must also explain what action, if any, the local water supplier has planned to address the contamination. The water supplier must hold a public hearing on the report.

Other Notification Requirements
When a contaminant in a public drinking water source exceeds the primary MCL, the water supplier must notify its customers in accordance with SWRCB requirements. In instances where there is an imminent threat to human health, the water supplier would have to provide immediate notice to customers. The law requires SWRCB to approve the content of such notices.

Sources of Additional Information

OEHHA's website: www.oehha.ca.gov
SWRCB's website: www.swrcb.ca.gov

Office of Environmental Health Hazard Assessment

GUIDE TO PUBLIC HEALTH GOALS (PHGs) FOR CHEMICALS IN DRINKING WATER

MISSION

Protect and enhance public health and the environment by scientific evaluation of risks

California Environmental Protection Agency
Sacramento/Oakland

George V. Alexeeff, Director
Office of Environmental Health Hazard Assessment

Matthew Rodriquez, Secretary for Environmental Protection

Edmund G. Brown Jr., Governor

Who Keeps Drinking Water Safe?

U.S. Environmental Protection Agency (U.S. EPA) sets national drinking water standards and grants authority to each state to administer its own drinking water program.

State Water Resources Control Board (SWRCB) is the regulatory agency with the authority to set and enforce drinking water standards for the state. It may maintain standards at levels set by U.S. EPA, or it may set more stringent standards. Through its Division of Drinking Water, SWRCB works with **county health departments** to license and monitor public water systems.

California Environmental Protection Agency (CalEPA) includes the **Office of Environmental Health Hazard Assessment (OEHHA)**, the **SWRCB** and nine **Regional Water Quality Control Boards**. The water boards evaluate the quality of the state's surface water and groundwater, and regulate the storage and discharge of materials and pollutants that affect water quality.

Public water systems have the ultimate responsibility for keeping water safe. Any system that serves more than 25 people or 15 service connections must regularly test its water supplies and meet state and federal regulatory standards.

OEHHA's Role in Protecting Water Quality

OEHHA's professional staff includes toxicologists, epidemiologists, physicians, biostatisticians, and research scientists who are responsible for assessing health risks posed to the public by hazardous chemicals. The Office provides its scientific expertise in this area to other state regulatory agencies. Through its risk assessments and its development of Public Health Goals (PHGs), OEHHA assists SWRCB in developing regulatory standards for chemicals in the state's drinking water.

Contaminants in Drinking Water

California's regulatory drinking water standards protect the public from harmful substances, but no water supply is ever completely free of contaminants. Some, such as arsenic and uranium, can occur naturally. Others, such as fuels, industrial solvents, pesticides and metals, may enter water supplies from chemical spills and leaking tanks and pipelines, or they may be a legacy of agricultural and waste-disposal practices that predated modern environmental laws.

It is natural for people to want their drinking water to be completely free of all contaminants. However, preventing or removing all contamination often is not economically or technologically feasible. State health authorities are responsible for determining the levels of contaminants that, based on current laws and recommendations, can remain in water supplies without threatening human health.

Public Health Goals and Drinking Water Standards

To keep drinking water safe, the California Legislature passed the Calderon-Sher Safe Drinking Water Act of 1996. This law requires SWRCB to regularly test drinking water supplies and set standards for contaminants in the water. This responsibility was transferred from the California Department of Public Health to SWRCB on July 1, 2014. The Act also requires OEHHA to develop PHGs for contaminants in California's publicly supplied drinking water.

What Is a Public Health Goal?

A PHG is the level of a chemical contaminant in drinking water that does not pose a significant risk to health. PHGs are not regulatory standards. However, state law requires SWRCB to set drinking water standards for chemical contaminants as close to the corresponding PHG as is economically and technologically feasible. In some cases, it may not be feasible for SWRCB to set the drinking water standard for a contaminant at the same level as the PHG. The technology to treat the chemicals may not be available, or the cost of treatment may be very high. SWRCB must consider these factors when developing a drinking water standard.

How Does OEHHA Establish a Public Health Goal?

The process for establishing a PHG for a chemical contaminant in drinking water is very rigorous. OEHHA scientists first compile all relevant scientific information available, which includes studies of the chemical's effects on laboratory animals and studies of humans who have been exposed to the chemical. The scientists use data from these studies to perform a health risk assessment, in which they determine the levels of the contaminant in drinking water that could be associated with various adverse health effects. When calculating a PHG, OEHHA uses all the information it has compiled to identify the level of the chemical in drinking water that would not cause significant adverse health effects in people who drink that water every day for 70 years. OEHHA must also consider any evidence of immediate and severe health effects when setting the PHG.

For cancer-causing chemicals, OEHHA typically establishes the PHG at the "one-in-one million" risk level. At that level, not more than one person in a population of one million people drinking the water daily for 70 years would be expected to develop cancer as a result of exposure to that chemical.