

WISCONSIN

Keeping Track, Promoting Health

Building a Network

Without question environmental contaminants are affecting people's health. Environmental hazards are among parents' top health concerns for their children, according to the American Academy of Pediatrics. Understanding how these contaminants and other environmental factors are linked to chronic disease is essential to disease prevention—and to protecting the health of our communities.

The Centers for Disease Control and Prevention (CDC) is leading the initiative to build the National Environmental Public Health Tracking Network. The Tracking Network is being developed in response to calls for better understanding of how the environment can affect people's health. This Web-based system will integrate health and environmental data and provide information to address public health concerns, educating the public about ways to protect themselves from possible contamination and disease.

States and communities can act upon data generated through tracking. Today, because of tracking, public health officials in Washington State can do more than determine mercury levels in fish. They can also compile information from many sources and use the data to educate citizens about healthy fish choices with greater speed and accuracy. In Maine, tracking has allowed researchers to examine high arsenic levels in well water and its effects on reproduction. Consequently, state public health officials can now warn well users about the hazards of exposure to arsenic during pregnancy.

The Tracking Network will enable and encourage communities, health care providers, state and local health departments and others to take control of their health.

The building blocks of this network are grants to state and local health departments and universities around the country to build capacity and demonstrate just what tracking can do.

Building the Foundation: Wisconsin (2002—2006)

In 2002, the Wisconsin Department of Health and Family Services received CDC funding to plan for a statewide Environmental Public Health Tracking Network that will be part of the national tracking network. Wisconsin used the funding to build capacity, enhance infrastructure, and complete data linkage projects. The results range from starting or improving surveillance to enabling faster responses to environmental public health questions and faster action to prevent disease.

Why Tracking Matters to Wisconsin

A community in southeastern Wisconsin was concerned about the solvent trichloroethylene being emitted by a nearby factory. Drinking or breathing high levels of trichloroethylene over time may harm the nervous system, cause liver and lung damage, and increase the risk of cancer.

Fortunately, the Wisconsin Tracking Program had just collaborated with the state's Department of Natural Resources to implement a new environmental public health tool, the Regional Air Impact Modeling Initiative (RAIMI). Developed by the Region 6 Environmental Protection Agency, RAIMI provides geographically focused estimates of toxic air pollutant concentrations and then generates estimates of community cancer risk.

Public health officials used RAIMI to estimate the levels of trichloroethylene in the southeastern community in Wisconsin. The presence of high levels of this chemical was confirmed by using the RAIMI model and through other monitoring techniques.

With that information in hand, the Wisconsin Department of Health and Family Services and the Wisconsin Department of Natural Resources recommended that the industrial plant reduce its emissions. After being presented with modeling, monitoring, and consultation results, the factory owner—who was in compliance with all applicable permit requirements—agreed to change the manufacturing process of the plant to eliminate trichloroethylene emissions.

This intervention resulted in reduced community trichloroethylene exposure and showed how interagency collaborations and the use of air pollutant modeling to identify high-risk communities can prompt action to decrease toxic air pollutants.



“So much has changed since the Pew Commission report,” says Shelley Hearne, Dr.P.H., founding executive director of Trust for America’s Health. “It’s phenomenal to see the rapid evolution from concept to implementation, from gap to engagement.”

Tracking in Action

What is the problem?

What did tracking do?

Improved public health

Monitoring Mercury Exposure

Mercury is a metal that occurs naturally and also enters the environment through hazardous spills, incinerator emissions, and industries that burn mercury-containing fuels. Exposure to high levels of mercury can damage the brain, kidneys, and the developing fetus. Mercury contamination is common throughout Wisconsin's lakes and rivers. In addition, methyl mercury, the type of mercury found in seafood, is present in commercial and local sport-caught fish. Residents that eat contaminated fish may be at risk for developing neurological problems.

Tracking staff collaborated on a project to assess mercury exposure among adults and link the exposure levels with patterns of fish consumption. For the project, staff collected and analyzed hair samples of nearly 1,000 men and compared their mercury levels to their responses on a dietary survey. The survey measured the amount of fish they ate. The project also assessed mercury levels in younger men and women for comparison.

More than 2,000 people were assessed for methyl mercury exposure. In addition, several newspapers, television and radio stations carried stories about the project. This media exposure helped to increase the public's awareness of the potential risk from dietary mercury exposure. The results were used to advise those with excess levels of mercury in their body and to revise the current fish consumption advisory. This surveillance program is now an ongoing project for the state.

Understanding Pesticide Use and Cancer

Agriculture accounts for more than 40% of Wisconsin's economy. Health officials in Wisconsin wanted to better characterize the impact of agricultural pesticide use on drinking water contamination and related health outcomes.

The Wisconsin Tracking Program worked with the state agricultural agency to develop a database that geographically categorizes areas of high, medium, or low pesticide use. This tool has been used in projects to identify environmental contaminants that may be linked to childhood cancers. The tool is an integration of many sources of information and provides a better characterization of the hazard and the potential for exposure to agricultural pesticides.

The Wisconsin Tracking Program's work significantly advances understanding of the potential for pesticide exposure via drinking water across the state. It can be used to explore associations between pesticides and adverse health effects such as cancer, thus enhancing the public health utility of regulatory data. The tool serves as a model that can be replicated by others seeking to characterize health risks related to pesticide use.

Tracking Carbon Monoxide Poisonings

Carbon monoxide (CO) is a silent killer. This colorless, odorless, poisonous gas can cause sudden illness and causes nearly 500 preventable deaths in the United States each year. Carbon monoxide is produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, gas ranges, and heating systems. All people and animals are at risk for CO poisoning. Certain groups—unborn babies, infants, and people with chronic heart disease, anemia, or respiratory problems—are more susceptible to its effects.

The Wisconsin Tracking Program saw the need to develop a comprehensive surveillance method for identifying specific groups at risk of unintentional poisonings. Knowing who these groups are will help guide the development of effective outreach and intervention activities. Tracking staff looked at the feasibility for using several data sources to track CO poisonings on a routine basis. Some of the data sources included hospital discharge records, death certificates, newspaper reports, poison control center records, emergency department records, individual medical records, utility company records, and electronic reporting from local health departments.

The program also collaborated with one of the local health departments to develop and implement a training module for fire departments that are asked to assess buildings with suspected CO contamination.

To date, the training module has been presented to fire departments across the state. This module will increase responders' ability to accurately identify sources of carbon monoxide in homes and will prevent future poisonings. Efforts like this increase the program's tracking capabilities, particularly the ability to capture exposure cases that may have otherwise been unrecognized, and provide local health departments with opportunities for education and direct intervention.



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For more information about the National Environmental Public Health Tracking Program please visit: www.cdc.gov/nceh/tracking

