

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: Oregon (2002—2006)

In 2002, the Oregon Department of Health Services received funding from CDC to plan for a statewide Environmental Public Health Tracking Network that will be part of the national tracking network. Oregon used the funding to build capacity and enhance infrastructure. 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 Oregon

The Oregon coast and waterways are rich in fish and shellfish. These foods are a staple in the diet of Pacific Northwest residents. Unfortunately, eating fish and shellfish are the main sources of exposure to mercury, and high levels of mercury can cause adverse health effects. Methyl mercury, the type of mercury found in some seafood, may cause neurological development disorders in sensitive populations such as fetuses, infants, and children.

The Oregon Tracking Program provided mini-grants to several state agencies. The Oregon Environmental Toxicology Program received one such grant and used its funding to expand its ongoing surveillance of mercury levels in locally caught fish. The Oregon Environmental Toxicology Program collected bass and trout tissue samples from bodies of water that had not been tested previously in Jackson County. Findings from this project showed high mercury levels in smallmouth bass from one Oregon reservoir. The Oregon Department of Health Services issued a public health advisory about that body of water. This example shows how tracking has increased environmental public health capacity and can be used to provide proactive, preventive public health information to communities.



"Capacity building may not sound exciting, but it has been one of the most rewarding aspects of this Program," says Judith R. Qualters, Ph.D., chief of CDC's Tracking Branch. "When we started, capacity varied widely in the health departments. But in just three short years, people were doing projects above and beyond what we originally envisioned."

Tracking in Action

What is the problem?

What did tracking do?

Improved public health

Tracking Oil Spills

Leaks and spills can occur in industrial areas or even residential parts of town. Oregon's Hazardous Substances Emergency Events Surveillance (HSEES) program investigates spills and leaks for inclusion in a national database. However, the national database does not include information about spills involving petroleum products and sewage. Human exposure to these chemicals can affect the health of the public.

Petroleum spill information is important to environmental health tracking. The Oregon Tracking Program assisted HSEES in expanding its database so that it could save petroleum spill information as well as HSEES reportable data.

By gathering this information, HSEES will be able to better understand how to react to spills involving petroleum products. Future petroleum spill investigations can help determine who might have been exposed to these substances and what immediate injuries or health problems may have resulted from that exposure.

Understanding Indoor Air Quality in Businesses that Serve Liquor

Environmental tobacco smoke (ETS) contains at least 250 chemicals that are known to be toxic or cause cancer. It is estimated that ETS is the cause for nearly 3,000 lung cancer deaths in the United States each year in persons who are nonsmokers. Although data show ETS exposure is declining in the United States overall, it remains a major public health concern. In 2006, only 12 states, which represent approximately 31% of the U.S. population, passed comprehensive clean indoor air regulations that cover virtually all indoor worksites, including bars and restaurants. Oregon did not adopt these types of regulations, and many Oregon residents are at risk for exposure to ETS.

The Oregon Tracking Program and the Oregon Tobacco Prevention and Education Program provided technical assistance to the American Cancer Society of Oregon and the Tobacco Free Coalition of Oregon to conduct the Oregon Air Monitoring Project. This project examined indoor air quality in 107 hospitality venues in Oregon and assessed the relation between indoor air pollution and the presence of on-premise smoking. Results of the project showed restaurants, bars, and other hospitality venues allowing indoor smoking were significantly more polluted than both indoor smoke-free sites and outdoor air. Workers in the locations sampled were exposed to pollution levels more than three times higher than the annual U.S. Environmental Protection Agency exposure standard for fine particle air pollution; this standard is in place to protect the public health. This project demonstrates that Oregon workers and patrons are exposed to harmful levels of a known carcinogen and toxin.

Although Oregon is not a smoke-free state, tracking provides public health data that can help guide future public health policies. Possible health effects associated with exposure to ETS include heart disease, lung cancer, nasal and sinus cancer, sudden infant death syndrome (SIDS), asthma, middle ear infections in children, and various other respiratory illnesses. Policies that prohibit smoking in public worksites dramatically reduce ETS exposure and improve worker and patron health.

Reducing Exposure to Mercury from Fish

Fish and shellfish caught in Oregon waterways are a dietary staple for many local residents. However, some studies have shown that eating fish and shellfish is a major source of exposure to mercury. High levels of methyl mercury, the type of mercury found in some seafood, poses a risk to subsistence fishers, women of childbearing age, infants, and people with weak immune systems.

The Oregon Tracking Program provided mini-grants to several state agencies, including the Oregon Environmental Toxicology Program (OETP). OETP tracks levels of contaminants in fish tissue as part of the fish advisory program and expanded upon their activities by conducting ongoing surveillance of mercury levels of local fish in bodies of water that had not been tested previously. When the program analyzed fish samples from Emigrant Lake, staff found high mercury levels in smallmouth bass.

The Oregon Department of Health Services issued a public health advisory for Emigrant Lake advising residents to limit their consumption of all local fish except rainbow trout. This example shows how the Oregon Tracking Program has increased environmental public health capacity that resulted in public health action.



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

