WASHINGTON STATE

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: Washington State (2002 – 2006)

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

Why Tracking Matters to Washington

Before Washington State began its tracking program, the Washington Department of Health had no automated system to analyze fish tissue and contamination data. Nor could the department access directly the toxicological methods necessary to develop fish consumption advisories. Today, because of the Washington Tracking Program, additional fish consumption data have been collected to build a more complete picture of populations that are most at risk for exposure to contaminants from fish consumption. The Tracking Program also developed tools that make generation of Fish Consumption Advisories more efficient, systematic, and transparent. Tracking's investments in data also allow practitioners to target prevention and communication efforts to the most-at-risk populations.

"Infrastructure is rarely at the top of the public's agenda, yet it is essential to improve the health care in the United States."

Thomas Burke, Ph.D.,
Professor, Co-Director, Risk Services and Public Policy, Johns Hopkins University

Tracking in Action

	What is the problem?	What did tracking do?	Improved public health
Improving Efficiency of Fish Consumption Advisories	Sport-caught and store-bought fish may contain mercury and polychlorinated biphenyls (PCBs). Over time these chemicals build up, and eating fish with high levels of mercury and PCBs may cause adverse health effects. For example, ingesting high levels of mercury can increase the risk for birth defects and developmental problems in children.	The Tracking Program collected crucial new data on the levels of mercury, PCBs and polybrominated diphenyl ether (PBDE) levels in store-bought fish, as well as survey data on the quantity and types of fish Washington residents eat. One of the most notable findings was that albacore (white) canned tuna contained more than three times as much mercury as 'light' canned tuna. The Tracking Program also helped fund the development of a software application to streamline and systematize analysis of fish contamination data to produce consistent advisories.	The Tracking Program's support built capacity that connects fish contamination data and population-based data. This allows assessment of which populations are at highest risk for exposure to contaminants in fish. The Program disseminated a public health advisory to inform residents about mercury levels in white, canned tuna. The advisory provides information to the public about how to keep fish in their diet without being exposed to harmful levels of contaminants. Development of the tracking software has resulted in better and timelier fish consumption advisories, and improved data for targeting those groups who most need prevention education.
Tracking Environmental Air Quality in Schools	According to the U.S. Environmental Protection Agency, poor indoor air quality (IAQ) can affect the comfort and health of students and staff which, in turn, can affect concentration, attendance, and student performance. If schools fail to respond promptly to poor IAQ, students and staff are at increased risk for short-term health problems such as fatigue and nausea, as well as long-term problems such as asthma. In Washington, student and staff complaints have been numerous regarding illnesses related to poor IAQ.	The Tracking Program conducted a pilot project in three school districts to standardize electronic collection of student health data. The type of information gathered included absenteeism, nursing station visits, and chronic respiratory conditions. The pilot also included a system for collecting indoor air quality data such as levels of carbon monoxide (CO), carbon dioxide (CO2), temperature, humidity, and particulate matter. In one district, students collected these environmental monitoring data as part of their science class.	With routine environmental monitoring, schools can detect indoor air quality problems and address hazards before they have a widespread effect on school environments and student and staff health. Likewise, the standardization of systematic, electronic collection of student health data enables education districts to observe patterns in student illnesses, inform efforts to promote a healthy student body, and improve learning environments.
Pesticide Surveillance in Farm Workers	Farm workers are at risk of high exposures to dangerous pesticides such as organophosphates and carbamates – both of which are known to lower cholinesterase levels in the body. Lowered cholinesterase levels can lead to blurred vision, diarrhea or other flu-like symptoms, and in severe cases, seizures or death.	The Tracking Program helped develop electronic systems for tracking lowered cholinesterase levels among pesticide handlers before pesticide overexposure led to physical symptoms. In the 2004 growing season, the Washington State Department of Health partnered with the state Department of Labor and Industries to track more than 3,600 blood samples from farm workers. Of the 611 farm workers with at least one follow-up test, 122 had somewhat depressed cholinesterase levels and 27 farm workers were found to have substantially lowered cholinesterase levels.	Once tested, exposed workers were informed of their risk and temporarily assigned to other duties until their levels returned to normal. This Tracking project was crucial in informing and protecting farm workers who were exposed to dangerous pesticides.
Improving Public Health Reporting	Health care providers, laboratories, and hospitals use a variety of methods to send case reports to state and local health departments regarding notifiable health conditions. The methods range from telephone, fax, and email to surface mail. This variability in reporting methods and the lack of a single, standardized system for receiving reports makes case data difficult to compile and analyze quickly. This can result in slower public health response times, or inhibit progress in identifying unusual disease patterns or outbreaks.	Washington's Public Health Reporting of Electronic Data (PHRED) system addresses this problem by providing a standardized and streamlined mechanism for meeting public health reporting requirements. Washington's Tracking Program resources improved systems for electronic reporting of elevated blood lead levels, pesticide-illness, and birth defects. Investments in databases, electronic messaging tools, and IT training made possible a shift in the proportion of incoming reports from fax transmissions to a more centralized, secure, and standardized electronic format: the agency's (PHRED) system.	PHRED heightens and accelerates state and local health department awareness of any unusual or potentially harmful test results or individual illness. Data in an electronic format enables quicker, more accurate analysis and identification of potential health risks, and allows public health officials to respond rapidly.

Centers for Disease Control and Prevention
1600 Clifton Rd.
Atlanta, Georgia 30333, U.S.A.
Tel: (404) 639-3311
Public Inquiries: (404) 639-3534/ (800) 311-3435
Web: www.cdc.gov

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