

# Environmental Public Health Tracking: Success Stories from a Collaborative Surveillance System

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## Objective

The National Environmental Public Health Tracking Program facilitates the linkage of environmental information to health outcomes through development of a national standards-based public health surveillance system that provides useful information to help improve where we live and work. The purpose of this summary is to report how state tracking programs have used their tracking networks to save lives and protect people from health threats.

## Introduction

Understanding how exposure to hazards in our environment (air, water, food and surroundings) affects our health is critical to understanding causes of many chronic and acute diseases and to planning and implementing appropriate response and prevention efforts. Centers of Disease Control and Prevention (CDC) established the congressionally mandated National Environmental Public Health Tracking Program (Tracking Program) to facilitate the analysis and interpretation of both environmental and health outcome data through the building of a national tracking network which integrates data from environmental hazard monitoring, human exposure and health effects surveillance. This network of standardized electronic data provides valid scientific information on environmental exposures and adverse health conditions in a practical format to explore plausible spatial and temporal relations between these factors. The program funds and provides guidance to 24 state and local health departments to develop local tracking networks that feed data into the National Tracking Network, enabling enhanced public health actions.

## Methods

In 2002, CDC established the Tracking Program to work with state and local health departments, federal partners, professional associates, academic colleagues and community groups to conceive a system for tracking environmental hazards and the health problems they may cause. The collaboration between these entities guided the development of the Tracking Network through workgroups consisting of representatives from both CDC and the partners. Areas addressed by the workgroups included content, program marketing and outreach, standards and network development, and geospatial matters. The Tracking Program initially sponsored 1 city and 16 state health departments to build local tracking networks and to contribute standardized data to the national system. With the launch of the web-based system in 2009, 7 additional states and 5 academic partners were added to produce the current national surveillance system collaboration. This publicly accessible web portal allows access to the available data for educational to policymaking purposes.

## Results

From the time the network launched, funded programs have used their tracking networks for multiple diverse purposes that have resulted in numerous success stories. Since 2010, 29% of these stories involve efforts to educate communities, with a quarter of all featured projects specifically identifying at-risk communities. Other success stories include endeavours to improve surveillance (26%), support epidemiologic studies (23%), target prevention efforts (21%) and inform

policymakers (19%). Surveillance is enhanced by incorporating new data sources, integrating environmental and health outcome data, and upgrading geographic mapping functionalities. Epidemiologic studies using Tracking data entail evaluating radon exposure, understanding relationships between specific contaminants and certain cancers, and addressing air quality concerns. Data are also used to target prevention towards at-risk populations and communities and to guide public policy, including assessing potential effects of traffic-related pollution on proposed residential or community space.

## Conclusions

While certain adverse health outcomes and environmental factors have been linked, such as with nitrate contamination of drinking water and cancer, other associations between hazard exposure and health effects remain unidentified. An information system that incorporates environmental and health outcome data enhances the ability to examine and monitor relationships among hazards, exposures and health consequences. Tracking Networks have resulted in improved public health endeavours to mitigate and prevent environment-related diseases yet still have abundant possibilities for expansion and exploration. Future directions include identifying knowledge gaps, developing plans for adding new data sources and collaborators to fill those gaps, and improving application and utility of the Tracking Networks.

## Keywords

Surveillance; Environmental Health; Tracking

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