TRACKING IN ACTION

Success Stories from CDC’s Environmental Public Health Tracking Network

USING THE TRACKING NETWORK TO PROMOTE HEALTH AND PREVENT DISEASE
The National Association of Chronic Disease Directors (NACDD) has partnered with the Centers for Disease Control and Prevention (CDC) to highlight a collection of twenty-three success stories from the National Environmental Public Health Tracking Network (Tracking Network). These stories showcase the impact of using the Tracking Network in promoting health and preventing disease.

The Tracking Network, which is operated by CDC’s Environmental Health Tracking Branch, is a system of integrated health, exposure, and environmental hazard information and data obtained from a variety of national, state, and city sources. It presents what is known about where environmental hazards exist, where people are exposed to hazards, and how targeted action can protect health, reduce illness, and save lives. Using Tracking Network data, health departments leverage resources and strengthen capacity in various areas including chronic disease prevention.

*Tracking in Action* stories demonstrate how Tracking Network data are used to aid in activities such as city/state planning, targeted prevention efforts, raising awareness about disease risk in communities, enhancing surveillance efforts, completing community health assessments, and informing policy, among others. We hope the strategies in these stories inspire you to work with the Tracking Program on similar activities for your locale.

NACDD congratulates the states featured in this publication and joins CDC in celebrating their achievements and successful outcomes.

Before tracking, even simple questions about health and the environment could take months to answer.

With a tracking network in place, public health officials can respond quickly, often within hours, to locate hazard sources or answer citizens’ concerns. To learn more, visit www.cdc.gov/ephtracking
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Lack of Data Limits Delivery of Breast Cancer Services and Education

Breast cancer is the most common cancer among women in California. Breast cancer data are usually analyzed and reported for the state as a whole or at the county level. Not having city or neighborhood level data makes it difficult for public health professionals and health care providers to identify specific areas that are most in need of breast cancer services.

Small-Area Mapping Identifies Vulnerable Population

The California Tracking Program recruited and worked with an advisory group of breast cancer advocates, clinicians, and public health agencies to determine the best way to map breast cancer data for the state. The advisory group decided that the maps should show data not limited by county boundaries. The tracking program then analyzed and mapped invasive breast cancer data showing geographic areas with elevated rates, including portions of East Ventura and West Los Angeles. This was surprising because Ventura and Los Angeles Counties had not shown consistently elevated rates of invasive breast cancer when shown in previous county-level maps. The tracking program enhanced the cancer data by providing and analyzing demographic data for the areas with elevated rates, which was a key recommendation from the advisory group. Doing so highlighted that, compared to breast cancer patients across California, the women who were diagnosed with invasive breast cancer in the East Ventura/West Los Angeles area were more likely to be uninsured or receiving government assistance at the time of diagnosis.

Targeted Outreach and Education for Underserved Patients

A Los Robles Hospital & Medical Center oncology nurse saw the tracking program’s maps and wanted to learn more about the findings. The hospital, located in East Ventura invited the tracking program to present the findings to the breast cancer leadership committee and health care providers. Following this presentation and subsequent meetings, the breast cancer leadership committee used the mapping results to focus some of their outreach and education on low-income clients. They incorporated breast cancer-specific messages into other hospital education and outreach efforts. The tracking program’s maps helped them identify and focus efforts on meeting the needs of women in their community.

“The California Tracking Program’s Breast Cancer Mapping Project was instrumental in raising our awareness about the elevated breast cancer rates in the area our hospital serves. By providing data that was previously unavailable, the study helped us create educational and administrative strategies to improve screening of our population in order to detect cancer as early as possible. We hope this will lead to improved health among the women we serve.”

Cathy J. F. Cole, NP-BC, MPH, CHES, CBPN-IC, Oncology Nurse Navigator Breast Program, Los Robles Hospital and Medical Center, Thousand Oaks, CA
Limited Information to Address Water Challenges
To address water quality issues for the most impacted communities, it is essential to know the areas and locations that public water systems serve. Historically, this information has been difficult to obtain because there was no central, digital map of public water systems in California, and some water systems only had paper diagrams of their service areas. Additionally, it was challenging to find information for water systems serving areas that crossed zip code or county boundaries.

Tracking Program Creates Water Boundary Tool
The California Environmental Health Tracking Program created an easy-to-access web-based Water Boundary Tool (WBT), which allowed water systems to produce and upload digital maps of their service areas. To date, the tool has mapped public water systems serving over 90% of the state’s population, and has been used for research on water quality and costs, as well as for the ongoing surveillance of California’s water systems. Because of its utility, several state grantees within the National Environmental Public Health Tracking Network are considering using the tool.

Tool Helps Develop Regional Solutions for Water Challenges
A cross-sector partnership between local governments, engineering firms, and non-governmental organizations used the WBT to address water quality challenges for rural and underserved communities in California. The partnership used the tool to identify the locations of water systems with poor drinking water quality and inadequate waste water facilities, especially in disadvantaged communities in the Tulare Lake Basin and Kings Basin regions. Using WBT-generated maps, the partnership worked with community residents to identify solutions such as improving water system efficiency, reducing water costs, and consolidating resources across water systems. Information from the WBT has informed regional and state-wide planning efforts and may be used in the future to strategically allocate resources to improve water quality in disadvantaged communities.

“The water system boundaries from the California Environmental Health Tracking Program were a foundational piece to the Tulare Lake Basin Disadvantaged Community Water Study. Without the first layer of information showing where communities and water boundaries are located, identifying problems and developing lasting policy solutions that promote community health and well-being wouldn’t be possible.”
Carolina Balazs, PhD, Research Scientist, Community Water Center
Addressing Concerns About Elevated Levels of Uranium in Drinking Water

Uranium Levels Too High in the Water Supply
Routine water quality monitoring revealed that uranium levels in the drinking water at a state correctional facility in Sterling, Colorado had increased slightly and exceeded the limit set by the U.S. Environmental Protection Agency. The Colorado Department of Corrections was concerned about possible health risks and needed help finding the right information to share with those who drank water with increased levels of uranium. They also wanted to determine the best ways to protect the health of the inmates and staff at the Sterling area prison.

Tracking Data Clarify Health Risk
The Colorado Tracking Program worked with the state’s Water Quality Division (WQD) to determine the natural range of uranium in Colorado water supplies. These data showed that elevated levels of uranium were common in Colorado water. Their research supported other evidence that the small increase in uranium levels would pose a low risk to the health of those who drank the water. In addition to data analysis, the tracking program helped develop messages to educate prison staff and inmates about the low level of risk for health effects from exposure to uranium in the drinking water.

Prison Educates Inmates and Reduces Exposures
The warden of the Sterling area prison used information provided by the tracking program to explain the situation to inmates and respond to their questions and concerns about uranium exposure. As an extra measure to protect the health of staff, inmates, visitors, and volunteers, the Department of Corrections, in consultation with the WQD and state tracking program, decided to bring in drinking water to reduce uranium exposures until the water supply could be fixed. Now, a new, state-of-the-art water treatment facility supplies water with reduced levels of uranium to the prison.
Elevated Arsenic Levels Found in Drinking Water
People may experience skin damage, have problems with their circulatory system, or have an increased risk of getting some cancers if they drink water with high levels of arsenic over many years. The Florida Department of Health had been sampling drinking water wells for arsenic in central Florida based on suspected areas of concern. About one out of every three drinking water wells tested had elevated levels of arsenic. As a result, the Florida Department of Health in Hernando County and the Florida Tracking Program conducted a year-long study in “hot spot” areas that had a higher risk of arsenic exposure from well water.

Florida Tracking Program Leads Study to Determine Health Risks
The Florida Tracking Program led the well water project including designing the study methods, obtaining approvals, and implementing the study in Hernando County with help from the local department of health. The study looked at whether using filters on kitchen water faucets could reduce a person’s exposure to arsenic. The Tracking Program collected samples, analyzed the data, and summarized the findings. Results from the study confirmed that using filters is an effective way to reduce exposure to elevated levels of arsenic.

To help raise awareness of arsenic exposure and the need for testing private wells, the Tracking Program worked with multiple county media outlets and developed fact sheets and educational materials for well owners. They also wrote an easy-to-read final report that described the study and summarized the findings for well owners and partners. Read the full report online (see link on page 31).

Filters Effective in Reducing Risk of Arsenic Exposure
During the study, two households had such high levels of arsenic in their well water that they qualified for free bottled water or filters. Before the study, these households were not aware of the high arsenic levels and the need for a filter to reduce exposure. “The filters prevent people from getting arsenic in their bodies even though the arsenic levels in their water are above the level of concern,” said Al Gray, Environmental Manager at the Florida Department of Health in Hernando County. Also, study results showed that other exposures to arsenic in water from non-filtered locations in the home, such as bathrooms, did not significantly increase the level of arsenic found in a person’s body. Gray says that the strong collaborative relationships among the affected communities, the Florida Tracking Program, and local media contributed to the success of the study.

“The results of this study have helped assure residents that when properly used, filters provide protection against harmful levels of arsenic in their bodies.”

Al Gray, Environmental Manager, Florida Department of Health in Hernando County
Immunization Program Needed a Better Way to Share Data with Providers
The Iowa Immunization Program needed an efficient way to give vaccine providers data on human papilloma virus (HPV) vaccination coverage rates up to 4 times a year. This information could help providers see how well they were meeting their young patients’ need for this vaccine. The Immunization Program also needed a better process to enter data for each of 650 providers into individual fact sheets.

Tracking Adapts Data Display Tool to Reach Vaccine Providers
The Iowa Public Health Tracking Program helped the Immunization Program by adapting the program’s cardiovascular disease and air quality data display tool. This dashboard allows users to view data in multiple ways and to create county-specific fact sheets that show the information in an easy-to-read format. With the customized dashboard, the Immunization Program could more efficiently generate fact sheets with provider-specific data on HPV vaccination coverage, reducing steps and saving a significant amount of staff time.

Cost Savings and Better Communication of Public Health Information Result
A cost-benefit analysis showed annual savings of more than $15,000 for the Immunization Program as a result of using the Tracking-designed data tool to communicate with providers about vaccination coverage rates. The success of this project has led to the creation of additional immunization dashboards for dissemination of data related to other types of vaccines.

“\textit{The tool allowed the program to represent the data in a clear and concise manner, allowing providers to evaluate and take steps to improve immunization rates. Using the tool allows the program to provide timely data in a cost effective manner.}”

\textbf{Don Callaghan, Chief of the Bureau of Immunization and Tuberculosis, Iowa Department of Public Health}
Community Planners Need Information to Make Good Decisions
Designing communities that encourage healthy choices and reduce harmful environmental exposures is vital for the health of a community’s residents. Applying knowledge about population health and movement in a given area helps city planners make the best possible decisions about future transportation, infrastructure, and other projects.

Tracking Data Helps Estimate Population Changes Over Time
Iowa Public Health Tracking provided the Metropolitan Area Planning Agency (MAPA) for the Omaha, NE/Council Bluffs, IA metro area with easy access to 30 years of vital records data for four Iowa counties in a format not previously available. The birth and death records were combined with census data to create age-specific fertility and death rates and to estimate population migration at the county level.

Regional Forecasting for Public Health Improved
Having easy-to-access data enabled MAPA to meet federally mandated regional forecasting and transportation modeling requirements. The data also supported the agency’s application for funding from the U.S. Department of Housing and Urban Development to implement a “roadmap” for the future. The Heartland 2050 roadmap encourages a collaborative approach to managing regional growth, maximizing public investment, and improving community health.

“These population forecasts are being used to develop a spatial land use allocation model for our federally mandated regional socio-economic forecasts and transportation modeling as well as assisting MAPA in the three year HUD Sustainable Communities Grant (Heartland 2050).”

Paul Hunt, GIS Coordinator, Metropolitan Area Planning Agency (MAPA)
Carbon Monoxide Causes Sudden Illness at a Children’s Party
More than two dozen children were stricken with sudden severe headaches and nausea at an indoor pool party held at a hotel in a small Kansas town. Investigation found a surprising cause—carbon monoxide (CO) from the hotel’s pool heater. CO is a toxic gas that you cannot see or smell. It can make people sick or kill them in just minutes.

Tracking Helps Educate Residents About Less Common Sources of Carbon Monoxide
This incident and two others where people became ill after swimming near idling boat engines prompted the Kansas Tracking Program to educate residents about the less common ways people are exposed to CO. Tracking Program staff and the state health department public information staff developed an awareness campaign with educational materials that warn residents about risks for CO poisoning and ways they can prevent exposures to CO. Messages were shared through statewide news releases and social media.

Fewer CO Poisoning Reports After Education
The number of incidents of CO poisoning reported by the public and in the media decreased following the health education and outreach activities. The Tracking Program continues to monitor the incidence of CO poisoning and will maintain awareness activities.

CO incidents like the one at the hotel have prompted possible changes in state regulations that would require the medical community to report carbon monoxide poisonings. The change in regulations is currently under review by the department of health.

“Carbon monoxide is the silent killer that is rarely considered until after the harm has been done. The Kansas Tracking Program has brought attention to this problem and promoted prevention methods that will absolutely save lives.”

Thomas Langer, MPA, Director, Bureau of Environmental Health, Kansas Department of Health and Environment
Quality Data Needed for Community Health Improvement Plan
The New York State Prevention Agenda for 2013–2017 mandates local public health units to work with local hospitals and health care partners to complete a Community Health Improvement Plan. The Madison County Health Department’s Environmental Division was directed to submit an environmental health report as a part of the plan. The report identified the plan priorities related to issues such as water quality, air quality, healthy community design, and transportation. Madison County used some of its local data for parts of the assessment. But they wanted to add more information to draw a full picture of the county’s environmental health.

Tracking Data Supplement County Data
To complete the assessment, Madison County secured additional data from the New York State Tracking Network. They also used CDC’s Tracking Network data on climate change and diseases, which was not available from the state. Because the Tracking Network had such a wealth of information available, Madison County compiled a comprehensive profile report for inclusion in the Community Health Improvement Plan. Read the full report online (see link on page 31).

Local Officials See Benefit of the Tracking Network
Local officials in Madison County are beginning to more fully understand the importance of collecting data at the local level in order to plan and make informed decisions on issues that are affecting, or could affect, the health of county residents. “I can truthfully say we are quite proud of this report, and attribute much of the content to our use of the Tracking Network,” said Geoffrey Snyder, Director of Environmental Health, Madison County Health Department.

As Madison County moves forward with implementing Community Health Assessment strategies, county health department staffers are using the state’s tracking network to assess connections between conditions in the environment that may be contributing to chronic disease at the county level. In addition, they are promoting use of the state and national Tracking Networks with their partners.

“I can truthfully say we are quite proud of this report, and attribute much of the content to our use of the Tracking Network.”

Geoffrey Snyder, Director of Environmental Health, Madison County Health Department
MAINE
Promoting Early Detection and Prevention of Lyme Disease

Lyme Disease Cases on the Rise in Maine
The number of new cases of Lyme disease in Maine has increased dramatically over the past two decades. All residents and visitors are potentially at risk for Lyme disease from the bite of infected ticks. Raising public awareness of the Lyme disease risk and promoting prevention and early detection of Lyme disease can reduce the number of Lyme disease cases and minimize longer-term health effects of this disease.

Tracking Program Meets the Need for Information About Lyme Disease and Tick Distribution
Residents and local government leaders often requested that the Maine Center for Disease Control and Prevention (MCDC) provide Lyme disease case information specific to their county. MCDC had been responding to these requests one at a time. In an effort to respond to requests more efficiently, the Maine Tracking Program collaborated with the Division of Infectious Disease to include Lyme disease data on Maine’s tracking network. The Tracking program then widely publicized the availability of the Lyme disease data to the public, health professionals and local officials.

Maine Communities Are Better Protected
Now, people can access information and data about Lyme disease directly without waiting for an MCDC response. In addition, Lyme disease data are the most frequently visited topic since the Maine Tracking Network’s launch, confirming the value of this information. Local students use the data to help complete Lyme disease related projects, and the press uses the data when writing articles. Mainelyticks.com, a tick management website calls the Lyme disease data and information on the Maine tracking network an “Excellent resource for tables, charts, trend charts, maps and more…..[A] Valuable resource for Maine Residents!”

Raising public awareness of the Lyme disease risk and promoting prevention and early detection can reduce the number of Lyme disease cases and health effects that come from this disease.
Private Well Water Safety Maintained Through Testing
More than half of all Maine homes rely on private wells for drinking water. Many wells have levels of arsenic, uranium, or other chemicals that can cause serious health effects such as cancer or low birth weight. These contaminants can only be detected through laboratory testing. Private well owners are responsible for testing their own water and correcting any problems.

Tracking Program Displays Town-level Well Water Quality Data
For the first time, the Maine Tracking Program is displaying town-level measures for six potentially hazardous substances on its website. Users can view data from more than 11,000 well water tests and the percentage of homes that have tested their wells. Also, users can create reports such as the percentage of wells in a specific area with contaminant levels that exceed Maine’s health-based maximum exposure guidelines. While everyone who gets drinking water from a private well should regularly test the water, these data highlight areas where residents may be at higher risk for exposure to harmful chemicals.

Data Help Target Safety Interventions
One tracking program partner, the Healthy Community Coalition, uses the tracking data to identify areas where they will target well water safety interventions. They send a mobile health unit to events in high-risk, rural areas of Maine where they educate residents about well water safety and give free well water test kits. Two other community partners who recently received contracts to carry out well water safety initiatives also use the tracking data to identify and select high-risk communities where they will work to increase rates of testing through community events and local media.

“The Maine Tracking Network is the only source for private well water data for the town-level. It’s a great resource to help us focus our outreach to the towns that need it the most.”

Jennifer McCormack, Executive Director, Healthy Community Coalition
Toxic Vapor at Children’s Recreation Site Worries Parents
Environmental factors, including exposure to toxic chemicals, can negatively affect children’s health. Trichloroethylene (TCE) exposure, for example, is potentially linked to autoimmune effects and congenital heart defects in children. Environmental testing in Dracut, Massachusetts, showed that TCE was present in the indoor air at a site where children had batting practice for baseball. Although the batting cage facility was immediately moved, residents expressed concern about their children’s exposure to TCE during the years when the facility was in use.

Tracking Data Aids Risk Evaluation
The Massachusetts Tracking Program reviewed information about possible children’s health outcomes related to TCE exposure. They decided to evaluate pediatric Type 1 diabetes—an autoimmune disorder—and certain heart defects associated with exposure to TCE. Tracking Program staff analyzed state data over a period of years to determine if there were increases in Type 1 diabetes and certain heart defects in the Dracut community.

Tracking Provides Answers for Concerned Families
Because Tracking program data were readily available, it was quickly established that the Dracut children, compared with children in other parts of the state, did not have an increased risk for pediatric Type 1 diabetes or heart defects associated with TCE exposure. The Dracut Board of Health shared this information with the residents to address concerns about their children’s health. Also, tracking staff attended meetings to help answer questions from residents. “We’re grateful to the Massachusetts Department of Public Health’s Bureau of Environmental Health for providing important information from the Tracking Program in the fact sheet that helped us allay residents’ concerns about exposure to substances found on the site,” says Tom F. Bomil, Director of the Dracut Health Department.

To protect others from possible TCE exposure, efforts to clean up the site have included demolishing one building and sealing floors and adding new air intakes and exhausts in other buildings.

“We’re grateful to the Massachusetts Department of Public Health’s Bureau of Environmental Health for providing important information from the Tracking Program in the fact sheet that helped us allay residents’ concerns about exposure to substances found on the site.”

Tom F. Bomil, Director of the Dracut Health Department
MASSACHUSETTS
Tracking Data Helps Inform Decisions About Transportation Projects

Law Requires Transportation Plans to Consider Health Effects
Transportation projects, like road and bridge construction, can affect the health of people living nearby. The 2009 Massachusetts Transportation Reform Law required the development of methods for health impact assessments (HIAs) for use in all state transportation plans. HIAs can show potential effects of transportation projects on the health of state residents, especially vulnerable populations like children or the elderly, and provide recommendations to manage and monitor those effects. Gathering health information and data is essential to an HIA but can be difficult and time-consuming if data are hard to find.

Tracking Data Useful for Health Impact Assessments
The Massachusetts Department of Public Health Bureau of Environmental Health (MDPH/BEH) coordinated with the state Department of Transportation (Mass DOT) for the first ever HIA mandated by law for a proposed project to de-elevate the aging McGrath Highway in East Somerville. They asked the MA Tracking Program for help because the state tracking network has easy-to-access health and environment data which could be readily incorporated into the HIA. The tracking program provided data on cancer, pediatric asthma and diabetes, and hospitalizations for asthma and heart disease. The HIA using data from the tracking network showed that project alternatives were a major public health improvement to the elevated roadway. Read the full report online (see link on page 31).

Transportation Decision Protects Residents’ Health
Tracking data informed the decision to recommend two specific alternatives of the three proposed for the original de-elevation plan. As a result, the selected plans for East Somerville meet the transportation needs of the area while providing maximum protection to the health of the area residents. Mass DOT describes the tracking program as a valuable and efficient resource for transportation-related HIAs and they recommend that their contractors and partners use tracking program data when completing HIAs.

Mass DOT describes the tracking program as a valuable and efficient resource for transportation-related HIAs.
Data Gaps Hinder Public Health Action
Chronic obstructive pulmonary disease (COPD) affects more than 15 million adults in the United States, according to the Centers for Disease Control and Prevention. Millions more may have it but are currently undiagnosed. Historically, there has been no national-level surveillance data on COPD prevalence. Even today very few hospitals track the number of hospital stays for COPD. These information gaps make it difficult for decision-makers to plan public health actions and make informed policy decisions to reduce COPD.

Tracking Program Makes Data More Accessible
With help from the Minnesota Tracking Program, Minnesota was one of the first states in the country to measure COPD burden statewide. Tracking Program staff analyzed risk factor, hospital, and death certificate data for the state to determine the number of COPD cases, rates of hospital stays, and death rates by race and ethnicity. The Tracking Program provided data, which showed striking disparities particularly for American Indians compared to other groups. In 2014, the Tracking Program published new data on COPD hospital stays by ZIP code for the Twin Cities metropolitan area, which will aid in targeting prevention services where they are most needed.

Communities Benefit from Enhanced Outreach and Awareness
Because of the efforts of the Tracking Program, COPD data are now available for decision-makers, health care and public professionals, and community organizations who can work to reduce COPD in Minnesota. For example, the Minnesota Pollution Control Agency will use the ZIP code level data on COPD in a new state initiative to inform communities about air pollution, the Air Quality Index, and respiratory health. In addition, having these data has allowed the Tracking Program to expand its partnerships with state agencies and organizations such as the American Lung Association, which invited the Tracking Program to contribute data and content to a joint report entitled, “The Scope of COPD in Minnesota.” This report is used to raise awareness and inform decision makers about COPD across the state.

“…Making the data available through the MN Tracking Program is an integral element in our work in Minnesota.”

Jill Heins, Director of Respiratory Health with the American Lung Association of the Upper Midwest
Hurricane Sandy Slams East Coast
Hurricane Sandy, a severe storm in October 2012, affected 24 states. The superstorm caused severe damage in many areas, especially in New Jersey, New York City, and other parts of New York State. Many communities in these areas experienced strong winds, heavy rainfall, widespread flooding, power outages, and damage to roads, bridges, buildings, and homes. As a result, millions of residents had no power, heat, or running water for multiple days during cold, fall weather.

Right after the storm, residents of these areas faced several health risks. These risks included carbon monoxide poisoning from improper use of generators or gas heaters; hypothermia from not having heat; worsening symptoms of heart and lung disease from exposure to cold temperatures; not having access to medical care; and foodborne illnesses from a lack of refrigeration caused by power outages.

Tracking Programs Play Role in Disaster Surveillance and Response Efforts
Tracking programs offer experienced, skilled staff; provide easy access to health and environment data; and have existing technology systems that can be quickly adapted for new purposes. For all of these reasons, local tracking programs are valuable partners during disasters or other emergency events. Tracking program staff from NJ, NYC, and NYS provided expertise and innovative strategies to assist with Hurricane Sandy surveillance and response.

New Jersey
Before the storm hit NJ, the state Tracking team and its partners quickly created and activated a real-time surveillance tool to track hurricane-related emergency room visits throughout the state. Additionally, NJ added a hurricane-related data feature to EpiCenter, the state health department’s existing real-time surveillance system.

Tracking program staff from NJ, NYC, and NYS provided expertise and innovative strategies to assist with Hurricane Sandy surveillance and response.
Because of the magnitude of the storm, staying informed was critical as the state worked to allocate public health resources quickly. Dr. Jerry Fagliano of the New Jersey Environmental Public Health Tracking Program commented, “I would have preferred a less dramatic test of this tool, but Hurricane Sandy really proved the utility of the EpiCenter in tracking storm-related emergency visits.”

**New York City**
Like New Jersey, the NYC Tracking Program analyzed data from a real-time surveillance system of emergency department visits—as well as from Poison Center data—to track health issues after the storm. NYC Tracking staff analyzed data collected in the field to inform factsheets and alerts for health care providers and the public. In addition, the Tracking staff developed maps of high-rise apartment buildings in flooded areas to help responders conduct door-to-door outreach. The maps made it easier for the first responders to assess needs and provide assistance to residents remaining in those buildings.

**New York State**
The NYS Tracking Program assisted in the state’s response to Hurricane Sandy by using its existing GIS capabilities to map the locations of Disaster Recovery Centers for employees using tablets and other handheld devices. Having the maps made it easier for emergency responders and residents to find the centers and receive the services and support needed. The Tracking Program also developed a web-based mapping application to help track and manage the needs of health care facilities in the storm’s aftermath. Workers were able to enter information related to supply management, patient capacity, and access. Tracking program staff members were also sent to the facilities to assist with the emergency response efforts.

**Rapid Response Reduces Negative Public Health Effects**
The efforts of the tracking staff, in partnership with other health department staff and other agencies, informed emergency and public health responses to meet residents’ needs after Hurricane Sandy. Technology, staff expertise, and strong working relationships that were built during earlier tracking program activities helped workers assess effects of the hurricane on residents and to prevent additional health effects.

“I would have preferred a less dramatic test of this tool, but Hurricane Sandy really proved the utility of the EpiCenter in tracking storm-related emergency visits.”

*Dr. Jerry Fagliano*, New Jersey Environmental Public Health Tracking Program
Reliable Data Needed to Identify Populations in Need
The Partnership for Maternal and Child Health of Northern New Jersey (The Partnership) was completing a request for funding to expand their home visitation programs. The Partnership needed to include several kinds of detailed birth data in their proposal to clearly identify the populations they wanted to serve.

Data from Tracking Network is Readily Accessible
The Partnership was able to obtain the data it needed from the NJ Tracking Network. The NJ Tracking Network provides data on births by birth weight, duration of pregnancy, race, and municipality. Since NJ’s Tracking Network had these data available online, The Partnership easily accessed the system, queried the data, and downloaded data to include in their funding proposal. Having 24-hour access to easy-to-understand data and information made it easy for The Partnership to identify, describe, and plan interventions for populations in need.

Funding Supports Needed Services for NJ Families
Because of the data available through the NJ Tracking Network, The Partnership thoroughly outlined the needs of the populations that would benefit from services provided with the funds. The Partnership was awarded $477,536 by the NJ Department of Children and Families to offer the Parents as Teachers home visitation program and the Nurse Family Partnership home visitation program. The Partnership is now able to provide home visitation services to 110 additional families in northern New Jersey.

*The New Jersey Tracking Network provides data within a system called the New Jersey State Health Assessment Data (NJ SHAD) System. Health and environmental data are provided for public health professionals, communities and interested residents.

“I was able to download the detailed data I needed, outside of normal business hours. NJ SHAD is a really helpful tool; it makes New Jersey data accessible any time, from anywhere.”

Naomi Savitz, Director of Quality Assurance at The Partnership
NEW MEXICO
Protecting New Mexico Residents from Wildfire Smoke

Wildfire Smoke Affects Health
Wildfire season in New Mexico typically starts in May and ends in early July. Prolonged exposure to smoke is harmful to people of all ages but especially to young children, older adults, pregnant women, and people with heart and/or lung disease. Wildfires can spread fast causing air quality to change quickly. This allows little time for alerting nearby residents to take measures to protect their health.

Tracking Program Helps Residents Determine Smoke Danger
Wildfires in 2011 spurred a proactive approach by the New Mexico Department of Health in preparing for and dealing with the wildfire season. In support, the New Mexico Tracking Program created a number of resources, including fact sheets and posters, to educate residents about ways to protect their health during wildfires. Tracking program staff developed the 5-3-1 Visibility Method to help residents more easily judge smoke danger and decide when to head indoors. In addition, they devised an interactive mapping tool to help residents determine when wildfire smoke is near enough to cause them harm.

Residents Can Now Take Action to Protect Health
Using the tracking program’s method and resources, New Mexico residents do not have to wait for official smoke alerts before making decisions about how to protect their health during wildfires. Now they can monitor their community and move more quickly if needed. More residents are learning about the tracking program’s resources through the efforts of the US Forest Service, National Weather Service, and Southwest Coordination Center. The tracking program’s impact also extends beyond New Mexico—two states have adopted the program’s visibility tool for use in their forest management programs.

“Before the tracking network came up with the 5-3-1 tool we had a system which was wholly convoluted and complicated. It was very difficult for us to use as people trying to help inform the public and for the public to understand.”

Chuck Maxwell, Predictive Services Meteorologist, Southwest Coordination Center
Heat Waves Cause Illness and Death
Extreme heat events, or heat waves, are the most common cause of weather-related deaths in the United States. Scientists predict that New York City is likely to have more frequent and more severe heat waves in the coming decades due to climate change. Certain populations and neighborhoods are more at risk for severe heat-related illness and death. To protect people from heat waves, public agencies need information about the effects of extreme heat on specific communities and which are most vulnerable.

Tracking Data Used to Estimate Health Impact of Heat Waves
The NYC Tracking Program worked closely with staff from the city’s Climate and Health program, funded by the CDC Climate Ready States and Cities Initiative, to contribute to a city-wide strategic plan to prepare for the effects of climate change. Using tracking data for NYC, they estimated potential health impacts from increasing temperatures during the 2020s if no additional climate adaptation measures are taken by the city. The data showed that there could be 110–260 additional heat-related deaths and 80–200 heat-related cardiovascular hospital stays each year. The tracking program also established baseline rates of heat-related illness for the city so they can monitor trends over time. They also examined factors that make people more likely to get sick or die from extreme heat—including not having air conditioning at home, social isolation, and poverty status—and mapped those factors across neighborhoods.

Supporting Climate Adaptation Planning
NYC tracking program data on potential health impacts of warming temperatures are being used in NYC’s strategic plan for rebuilding and improving climate resilience after Hurricane Sandy. Findings were used in testimony by the City of New York that recommended improvements in the resilience of electric power grids during heat waves, especially in neighborhoods where residents are at higher risk for getting sick or dying during extreme heat events. In response to testimony from NYC, environmental organizations, and scientific experts, the Public Service Commission committed to having the electric utility company plan for and protect the grid from climate change effects, including extreme heat events.
Harmful Blue-green Algae Affect Vermont Lakes
Blue-green algae are found in ponds and lakes throughout Vermont. During the warm days of summer and early fall, blue-green algae can multiply rapidly to form blooms and produce toxins that can kill fish, mammals, and birds. Blue-green algae blooms may look like thick pea soup or green paint floating in the water. In 1999 and 2000, two dogs died after drinking water from the shore of Lake Champlain when a bloom was present. These toxins can make people sick, too.

Tracking Program Develops Innovative Monitoring System
The Vermont Environmental Public Health Tracking Program, in partnership with the CDC Climate and Health Program, developed a web-based blue-green algae portal to provide up-to-date information on blue-green algae conditions. Data are collected by a network of more than 100 volunteers trained by a local conservation group. Following approval by a site moderator, data are added to the Vermont Health Department’s blue-green algae web map. Reports are assigned to one of three alert categories based on the conditions observed by volunteers. Before the web-based monitoring system was put into place, it took staff up to a week to publish the data. Algal blooms can appear or disappear very quickly, making week-old data of little use for someone planning a weekend trip to the lake. Now the public can see algae conditions at more than 60 different locations shortly after the volunteers submit their reports.

Crowd-Sourced Data Help Protect Residents and Raise Awareness
Health officials have used information from the Tracking Program’s blue-green algae portal to inform community advisories about harmful blooms occurring in Lake Champlain and four other inland lakes. An added benefit to using crowd-sourced data is that it creates a core group of community members who know how to identify harmful algal blooms. People who visit the health department’s website can learn how to identify blooms and what steps to take to protect their pets and themselves from exposure.

“This system is as much an educational tool as it is a surveillance tool.”
David Grass, PhD, Director, Vermont Environmental Public Health Tracking Program
More Tick Data Needed in Vermont
Vermont has one of the highest rates of Lyme disease in the country. Lyme disease is transmitted by bites from infected ticks. Being able to track where ticks are living is one way to monitor how their range may be changing. Vermont’s tick surveillance activities involve sampling only a few locations a few times per year. As a result, data about the locations and timing of high tick activity are limited. This makes it difficult for public health workers to identify areas where people might be at high risk for Lyme disease or other tick-borne diseases.

Tracking Program Uses Crowd-Sourced Data to Monitor Risk
To help improve tick monitoring, the Vermont Tracking Program, in partnership with CDC’s Climate and Health Program, developed a “crowd-sourced” web application called the Tick Tracker. The Tick Tracker can be used by anyone to record tick sightings anywhere in the state and submit reports to the health department. In as little as a minute, they can add the sightings to an online map of Vermont. The map shows where people may need to take extra steps to prevent tick bites when spending time outdoors. Along with the map, the site has links to information about tick-borne diseases and preventing tick bites.

Tick Tracker Engages the Public in Tick Surveillance
The Tick Tracker gives members of the community an opportunity to get involved by identifying tick hot spots and sharing this information with others to help them make informed decisions about protecting themselves from tick bites. According to Erica Berl, Infectious Disease Epidemiologist at the Vermont Department of Health, the Tick Tracker has been an important new tool in helping educate Vermonters about tick-borne diseases.

“The Tick Tracker was released at the end of August in 2013. By the end of the fall, there were thousands of visits to the page, and more than 250 location-specific tick reports. Using crowd-sourced data will help us to improve our efforts to reduce Lyme disease.”

Erica Berl, Infectious Disease Epidemiologist, Vermont Department of Health
Radon Risk High in Parts of Washington State
Radon is a gas that you cannot see, smell, or taste. According to the U.S. Environmental Protection Agency, radon causes about 20,000 cases of lung cancer each year, making it the second leading cause of lung cancer after smoking. Radon can seep up from the ground and become trapped in buildings. Testing is the only way to know if radon levels are high in a particular home or office. While some regions in Washington are known to have high risk for radon exposure, the EPA’s Map of Radon Zones for Washington identified those zones only at the county level.

Tracking Program Maps Show Radon Risks
The Washington Tracking Program worked with state geologists to develop a new, more detailed radon exposure risk map. This map identified areas of low, medium, and high risk of radon exposure based on soil and rock types. Tracking staff also gathered state-wide radon testing data from national testing companies as well as data from the state radon program. These data were used to produce maps that showed testing results by ZIP code. Tracking program staff developed a radon content area on the Washington tracking portal that included maps of radon test data and exposure risk. Layering these maps showed new, previously unknown hot spots, such as around the Puget Sound. It also showed many high to moderate risk areas where no testing had been performed in the past. Based on this new information, tracking program staff raised public awareness about the importance of radon testing through outreach to local public health officials, a news release, and web and social media posts.

Radon Awareness Leads Tracking Employee to Test Her Own Home
Meghan works in the Washington Tracking Network program. While working on this project, she realized that the home she and her family recently moved into was in a high-risk area for radon and should be tested. Testing revealed an elevated radon level in a basement room her step-daughter had chosen as her bedroom. Acting on the test results, the family took the simple, recommended steps to mitigate the radon. Adding a fan and keeping the bedroom door open as much as possible to increase air circulation helped to lower the radon level and keep Meghan’s family safe.

“I’m so happy we discovered the high radon levels quickly and not after many years of exposing our children to them.”

Meghan, a Washington Tracking Network program employee
Funding Challenges Reduce Capacity for Data Analysis
The Wisconsin Childhood Lead Poisoning Prevention program helps local health departments, health care providers, and community organizations prevent, detect, and treat childhood lead poisoning. In 2012, the lead program experienced significant funding and staffing reductions, including the loss of the program’s senior epidemiologist. As a result, the program was unable to provide data analysis for its partners as it had previously done, despite the continued requests.

Tracking Network Fills Data Gap
The Wisconsin Tracking Program and the state’s lead program had been collaborating for many years to share data and resources. Because the lead program’s data were available to the Wisconsin tracking staff, they were able to help answer some of the continued data requests. Using the Wisconsin Tracking Network’s surveillance reporting platform, tracking program staff were able to respond to requests for lead data in a quick and comprehensive fashion. For example, data from the state’s lead surveillance system that were available on the Tracking Network were provided to the Menomonee Valley Benchmarking Initiative to help track how well the community was doing in the areas of environmental preservation, community well-being, and economic development. The Initiative completed a critical analysis of lead poisoning and developed an updated report for dissemination.

Data Help Focus Prevention Efforts
Because of the data from the lead surveillance system, combined with the expertise and capabilities of the Wisconsin Tracking Program, the Initiative’s report was able to identify communities that had the highest rates of childhood lead poisoning. The City of Milwaukee, neighborhood advocates, and property developers used the data to determine where to distribute resources for lessening the effects of exposure to lead. In addition, information in the report was used to inform citizens, investors, policy makers and leaders about childhood lead poisoning at the neighborhood level.

“The Menomonee Valley Benchmarking Initiative has relied on Wisconsin’s Tracking Program since 2003. Without this important resource, we would be unable to track the connections between new economic development, nearby housing conditions and the rates of children who become poisoned by lead-based paint.”

Benjamin Gramling, Director of Environmental Health, Sixteenth Street Community Health Centers, Milwaukee, WI
Expanding Tracking’s Reach

The ultimate goal of CDC’s Tracking Program is to expand to every state. CDC’s Tracking Program currently funds health departments in 25 states and one large city. However, creative use of resources and partnerships has helped extend the Tracking Program’s reach. CDC offers many opportunities and resources for states, counties, and cities not funded as part of the Tracking Program. These offerings help increase awareness of tracking and improve environmental public health surveillance.

Tracking Fellowship Increases Capacity in Non-funded States

External partnerships have helped increase capabilities for tracking in non-funded jurisdictions, including Cincinnati and Washington, D.C. CDC’s Environmental Public Health Tracking Peer-to-Peer Fellowship Program, sponsored jointly with the Association of State and Territorial Health Officials (ASTHO), is one such partnership.

The ASTHO Tracking Fellowship Program helps non-funded health agencies build their public health surveillance capacity. This program provides opportunities for fellows to:

• develop and implement a pilot project to advance environmental public health surveillance in their jurisdictions,

• receive guidance from funded participants in CDC’s Tracking Program, and

• become familiar with CDC standards and resources for environmental public health tracking.
CINCINNATI, OHIO

Cincinnati Data Not Readily Available to Residents and Officials
Local level data give public health officials and residents the information they need to make informed decisions related to disease patterns, health conditions, and exposures to environmental hazards. Before Cincinnati joined the Tracking Fellowship Program, most of the Ohio environmental and health data available were for state or county level only. Very few data were readily accessible in one place.

One of the first activities of the Cincinnati Health Department (CHD) Tracking Fellowship project was to form a work group. Members include the CHD Vital Records Department, the City of Cincinnati Information Technology Centers (now Enterprise Technology Solutions), and the Ohio Department of Health. New York City, an experienced Tracking Program grantee, mentored CHD staff. They helped the CHD educate the mayor, Cincinnati City Council, and local health leaders about the value of a well-developed tracking network. During the fellowship period, CHD worked on developing the IT infrastructure, training work group members, and forging strong relationships with state and local agencies.

Cincinnati Residents and Officials Now Have Improved Local Data Source
After participating in the Tracking Fellowship Program a second time, Cincinnati now has online, searchable data about births for the city. It also offers fun facts, such as the most popular newborn names. In the future, they plan to expand their system’s capability to allow comparisons between maternal and child health data and chronic diseases within specific geographic areas of the city. This will allow users to study how health effects may be related to environmental hazard exposures. The overall goal of the city’s tracking program is to help ensure equity in health service delivery and health protection of the Cincinnati population.

“I advise other cities building a local tracking network to start small, work with a narrow initial scope, and create a technical advisory committee to provide expertise on network development.”

Denisha Porter, Cincinnati Tracking Program Fellow project
WASHINGTON, D.C.

Initial Washington D.C. Tracking Work
The District of Columbia (D.C.) has been working on environmental public health tracking since 2002. As part of the original CDC Tracking Program pilot projects, Washington D.C. made good progress. They successfully inventoried and evaluated environmental and public health databases, established a planning process, and garnered funding to sustain their efforts.

Fellowship Opportunity Helps Preserve Tracking Work
Although CDC funding ended in 2006, D.C. continued tracking efforts through the Tracking Program Fellowship. With guidance from an established Tracking Program state, the District of Columbia Department of Health (DCDOH) identified new data sources and re-established a technical advisory group during the first year as a Tracking Fellowship Program. Participating in a second year of the Tracking Fellowship Program allowed DCDOH to expand its tracking efforts by adopting and customizing an existing database system and entering 10 years of data on asthma and heart attacks. The health department also partnered with the Maryland Department of Health and Mental Hygiene (MDHMH), which currently hosts the District’s data on asthma and heart attacks. DCDOH continues to look for ways to sustain and expand the database and continues working with MDHMH to establish a regional data system. Users can access the regional data system online with the login ID “testuser” and password “test1Password” (see link on page 31).

“The Tracking Fellowship Program gives the department of health a new capacity for assessing environmental exposures and health problems. I would advise anyone looking to build a tracking network to work with programs that have a fully developed network—it’s cost-effective and promotes success. The Fellowship made it easier to build important relationships and gain access to much-needed technical support.”

Dr. John Davies-Cole, The DC Tracking Program Fellow Project
Funded Programs and Contacts

The Tracking Program provides information communities can use to improve their health. This information comes from a nationwide network that integrates health data and environmental data. CDC’s Tracking Program has laid the foundation of this national system by providing grants to state and local health departments.

CDC funds health departments in 25 states and 1 city to build and implement local tracking networks. These state and local data systems feed into the national Tracking Network. Previous projects by these grantees have improved information technology through better infrastructure, expanded environmental public health tracking capacity, and trained public health workers. Most importantly, grantees have developed better ways to make information accessible on the Tracking Network to those who need it to take action, such as policy makers and public health officials.
Connect to Learn More: Tracking Program Website Links

pages 5-6  California Environmental Health Tracking Program
http://cehtp.org/

page 7    Colorado Tracking Program
http://www.coepht.dphe.state.co.us/

page 8     Florida Tracking Program
http://www.floridatracking.com/
2013 Hernando County Arsenic Study Project Summary

pages 9-10 Iowa Public Health Tracking Program
http://www.idph.state.ia.us/EHS/EPHT.aspx

page 11    Kansas Tracking Program
http://keep.kdhe.state.ks.us/EPHT/portal/

page 12    Madison County — Healthy Environments Report
http://issuu.com/cjcoe63/docs/7-madisondoh_cha_environmental

pages 13-14 Maine Tracking Program
https://data.mainepublichealth.gov/tracking/

pages 15-16 Massachusetts Tracking Program
https://matracking.ehs.state.ma.us/
Health Impact Assessment of the Massachusetts Department of Transportation (MassDOT)
Grounding McGrath Study
http://www.mass.gov/eohhs/docs/dph/environmental/hia/hia-mcgrath-final-report.pdf

page 17    Minnesota Tracking Program
http://www.health.state.mn.us/tracking/

pages 18, 20 New Jersey
http://www.state.nj.us/health/epht/

page 21    New Mexico Tracking Program
https://nmtracking.org/en/

pages 19, 22 New York City
NYC’s Strategic Plan for Rebuilding and Improving Climate Resilience After Hurricane Sandy

page 19    New York State
https://www.health.ny.gov/environmental/public_health_tracking/program/

page 23    Utah Tracking Program
http://epht.health.utah.gov/epht-view/

pages 24-25 Vermont Environmental Public Health Tracking Program
http://healthvermont.gov/tracking/
Tracking Program’s Blue-Green Algae Portal
http://webmail.vdh.state.vt.us/vtracking/bluegreenalgae/d/
CDC — Lyme Disease Incidence Rates by State, 2003-2012
http://www.cdc.gov/lyme/stats/chartstables/incidencebystate.html
Tick Tracker
http://healthvermont.gov/ticktracker/

page 26    Washington Tracking Program
http://doh.wa.gov/WTN

page 27    Wisconsin Tracking Program
http://www.dhs.wisconsin.gov/epht/

page 28    ASTHO Tracking Fellowship Program
http://www.astho.org/Programs/Environmental-Health/Tracking-Environmental-Health-Hazards/

Cincinnati, Ohio
http://www.cincinnati-oh.gov/noncms/health/epht/fast_facts.cfm
Washington, D.C.
http://dmv.ephttracking.net/dmv_staging_secure/login.aspx?rt=map_flex