

**ENVIRONMENTAL PUBLIC HEALTH TRACKING NETWORK
PROGRAM & MARKETING OUTREACH
DATA STEWARDS TEAM**



Dear Tracking Grantee,

Each of you is entrusted with the enormous responsibility of communicating and building relationships with data stewards for participation in your network. In your communication efforts it is important to help data stewards understand Environmental Public Health Tracking, and to show data stewards the opportunities and benefits participation can bring.

To help you with this, the Program and Marketing Outreach workgroup's Data Stewards Team has developed a set of compelling materials to assist you in building relationships and forming partnerships with data stewards. The materials can be used individually or together as a "Benefits Package" as a supplement to your current data steward outreach efforts. The package includes:

- [A 1-page overview of the National Tracking Network](#)
- [Frequently Asked Questions Package](#)
- [A Benefits to Data Stewards document with examples from Tracking grantees](#)

Electronic copies of these files can be found on the CD-ROM as well as the SharePoint Web site (<http://ephtn.sharepointsite.com/default.aspx>). The Data Stewards Team thanks the Association of State and Territorial Health Officials for sponsoring this project. If necessary, you may request additional printed copies by contacting Abraham Kulungara at 202-371-9090 or akulungara@astho.org. Additional printing fees may be assessed.

We sincerely hope that this product will assist you as you reach out to sister agencies, non-profit organizations, and other data stewards on behalf of your Tracking Program.

Sincerely,

The Data Stewards Team

DATA PARTNERSHIPS TO IMPROVE HEALTH

DATA STEWARDS OUTREACH: NATIONAL ENVIRONMENTAL PUBLIC HEALTH TRACKING NETWORK

The Centers for Disease Control and Prevention (CDC) is currently leading an initiative to build the National Environmental Public Health Tracking Network. The National Tracking Network is a web-based system that will bring together data from several systems that look at environmental hazard monitoring, human exposure surveillance and health effects surveillance. Information from the National Tracking Network will help local, state and federal agencies develop and evaluate actions that improve public health.

THE NATIONAL TRACKING NETWORK & YOU

The success of the National Tracking Network will depend largely upon high quality, relevant data. State and local tracking programs look to data stewards, like you, to provide this essential information. Through collaboration, data stewards can provide public health professionals with a better understanding of how the environment affects health. The nexus of data brought together through the state, local and national tracking networks will inform efforts to prevent and control environmental-related health conditions.

NATIONAL TRACKING NETWORK SUCCESS & YOU

Quality data, engaged people and dependable technology are critical to the success of the National Tracking Network. CDC has partnered with state and local health departments, schools of public health, and several national partners. The products of these ongoing collaborations include developing environmental public health tracking capacity, and identifying, organizing and improving the quality of relevant data

FUTURE OF THE NATIONAL TRACKING NETWORK & YOU

Over time, the National Tracking Network will grow incrementally through a tiered approach with functional components at the local, state and national levels. It is by continuing to nurture cooperative efforts toward sharing environmental public health data that tracking can contribute to improving the status of the nation's health.

THE TRACKING NETWORK...

Is a web-based, secure, distributed network of nationally consistent electronic health and environmental data.

Relies on data and information housed at state and local sites and within national-level data systems.

Provides means to access hazard, exposure and health data and tools for environmental health analysis.

Supports tracking efforts by improving information, standardization, identification, access and analysis.



DATA BENEFITS

The image features a vibrant, monochromatic orange and red background, characteristic of a sunset or sunrise. In the foreground, several wheat stalks are silhouetted against the bright light. One prominent stalk curves from the lower left towards the upper right, framing a bright, glowing sun. Other stalks are visible in the background, some standing upright and others leaning. The overall composition is artistic and evocative, suggesting themes of nature, growth, and the passage of time.

From increased visibility to increased efficiency, data stewards will benefit from a partnership with the Environmental Public Health Tracking Program.

The New Jersey Tracking Program collaborated with data stewards from the New Jersey Childhood Lead Poisoning Prevention Program to obtain, geocode and analyze five years of childhood blood lead measurements for more than 326,000 children throughout the state. In addition, data stewards from the New Jersey Department of Environmental Protection provided lead contamination data from several sources, including public water systems. This was the first time New Jersey childhood blood lead data were geocoded, mapped and linked to both census and environmental data on a statewide basis. This demonstration project described geographic patterns of childhood blood lead concentration and examined the contribution from lead in air and drinking water to potential lead poisoning in these children. The results suggested an association between blood lead concentration and water contamination.



Access to Analytical Tools

Data made available on tracking networks will be accompanied by services and analytical resources, including:

- analysis and visualization tools,
- modeling tools that estimate hazards, exposures and health effects.



Cockroach and rodent infestations are a public health concern in New York City. The New York City Tracking program combined pesticide use and infestation data, census, housing, and community health survey data to create a comprehensive pests and pesticide tracking system. Their system unites household data about the prevalence of cockroaches and rodents, symptoms of asthma, and the use of off-the-shelf and commercial pesticides along with pesticide-related exposures and hospitalizations. New York City has been able to develop a deep understanding of the scope of pests, pesticides and their health consequences. The findings have been used to launch interventions to reduce the use of pesticides. These interventions include community education and integrated pest management demonstrations in public and private housing. New York City's tracking data have been used to justify and successfully secure additional programmatic funding for pest control and for pesticide use reduction. Data and indicators from this tracking effort were also used to inform public policy, including the passage and implementation of legislation that has made NYC the largest municipality to implement governmental pesticide reduction laws.

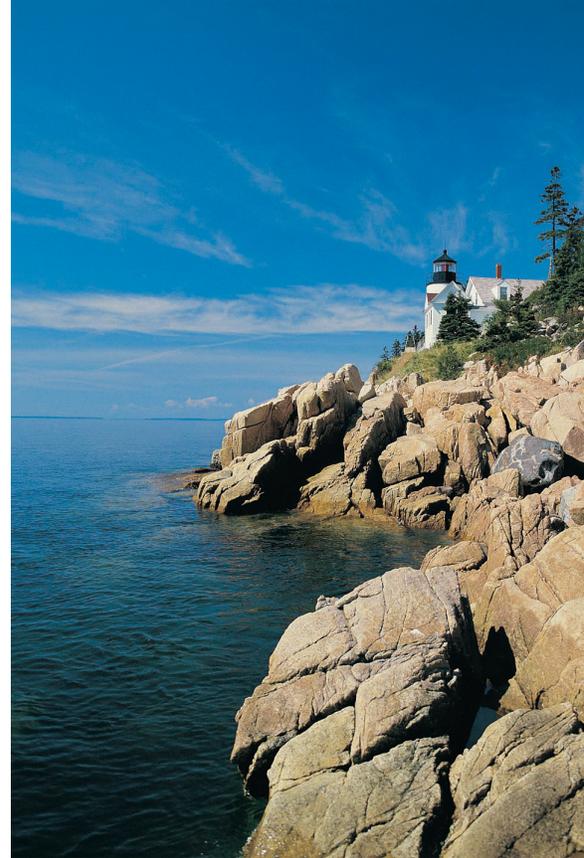
Positive Health Outcomes

Information brought together through tracking networks can assist public health practitioners in identifying and targeting effective public health interventions and advance public health research. This information can also be used by policymakers to guide public health legislation and outreach campaigns.

The Public Health Air Surveillance Evaluation (PHASE) was a collaborative project between federal and state partners to develop, evaluate, and demonstrate the advantages and limitations of different methods of generating air quality characterization surveillance data.

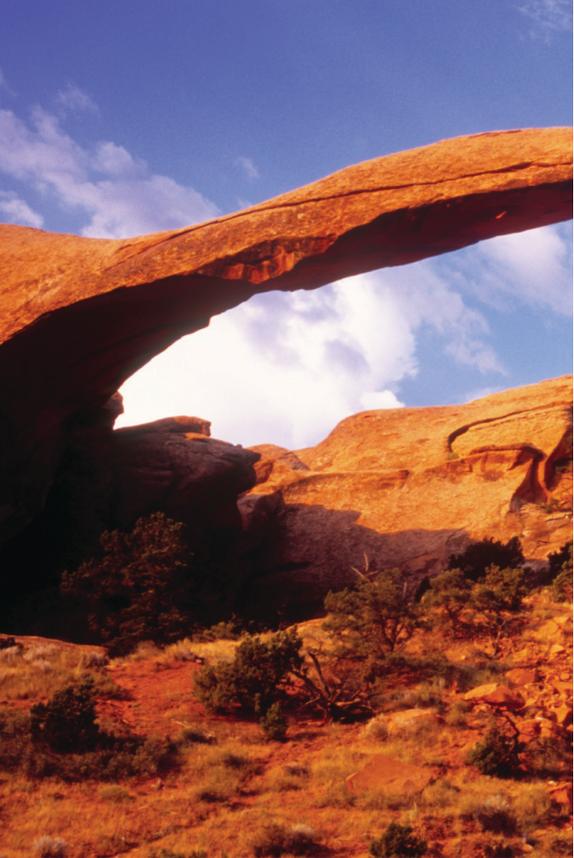
Using data from PHASE, Maine linked particulate matter data and asthma-related emergency department visit data at community and statewide levels. Maine's demonstration project showed an association between increased emergency department visits and changes in ozone and particulate matter levels.

Partners in the PHASE project were the Centers for Disease Control and Prevention, US Environmental Protection Agency, Maine Center for Disease Control and Prevention, New York State Department of Health and Wisconsin Division of Public Health.



Opportunities for Collaboration

Tracking networks provide a view of relevant environmental public health data across geographic or political boundaries.



The average time for a cancer investigation by the Utah Department of Health was approximately six months to one year. Much of that time was spent acquiring and formatting data so it could be used for investigation. To make epidemiologic investigations more efficient, the Utah Tracking Program acquired a complete set of cancer data which was then geocoded and organized for use by two query tools. One tool was a secure cancer query module developed by the Utah Indicator-Based Information System for Public Health (IBIS-PH). The other was the Rapid Inquiry Facility (RIF) application. The IBIS-PH is an active web-portal with both a public query module and a secure query module. The IBIS-PH also allows the public to access to more than 140 indicators about the health status in Utah. Implementing cancer into the secure query module allows authorized users such as local health officers to conduct quick analysis of cancer rates for small geographic areas. Implementing cancer into the RIF application allows state and regional epidemiologists to conduct epidemiologic investigations of cancer in a few hours.

By making arrangements to acquire complete datasets, developing procedures to geocode and organize the data for use in these analytical tools, and by providing access to the tools, the Utah Tracking Program allowed local health departments to more easily respond to local concerns and decreased the time it takes for epidemiologists to perform investigations. This effort also reduced the cost and resources required to conduct cancer investigations.

Increased Efficiency

Tracking networks will provide the means to identify available data and use data without requiring human intervention to support every transaction. This will reduce incoming data requests to your program staff. This, combined with the use of analytical tools, will make data exchange and reporting of information more timely and complete.

Wisconsin's Tracking Program worked with the state's Department of Natural Resources to develop a website for presenting air monitoring data. Through this portal, air quality data are made available for website visitors to view in real time.



Increased Audience Reach

Tracking networks can help your organization reach a new or larger, more diverse audience.

Tracking Networks are designed to serve a wide variety of audiences:

- public health practitioners at local, state and national levels,
- academic professionals,
- health care professionals,
- policymakers,
- staff at non-governmental and nonprofit organizations with an interest in environmental public health data and information,
- business and industry leaders,
- journalists and other members of the media, and
- the general public.



In Maryland, efforts are underway to build an online metadata inventory system with the goal of creating an expanded metadata resource for datasets throughout the state. The plan incorporates a mechanism for online metadata entry and access to information through a search tool on the Maryland tracking website.

An Enhanced Metadata Registry

Metadata are commonly referred to as “data about data.” Metadata describes the context, content and structure of records and their management through time.

A metadata registry will house information about data available on the National Tracking Network. States and local health departments may develop local metadata registries depending on their needs.

DATA PARTNERSHIPS TO IMPROVE HEALTH

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FAQ's

DATA PARTNERSHIPS TO IMPROVE HEALTH

Frequently Asked Questions

BENEFITS OF PARTICIPATING	1
USING THE NETWORK.....	2
SECURING THE DATA AND NETWORK.....	3
PROTECTING PRIVACY.....	4
CREATING METADATA.....	6
METADATA ON THE NETWORK.....	7
GLOSSARY.....	9

DATA PARTNERSHIPS TO IMPROVE HEALTH

Frequently Asked Questions

The Centers for Disease Control and Prevention (CDC) is leading the initiative to develop a national network for Environmental Public Health Tracking. This initiative begins with state and local health departments that receive CDC funding to build tracking networks. These networks are web-based systems that bring together data from several health and environmental systems. The data can be analyzed and used so that public health professionals can address public health concerns. The information in these state and local networks will help build CDC's National Network.

BENEFITS OF PARTICIPATING

How can I become involved?

As a data steward, you can partner with a state or local tracking program and become a data partner in their network. State and local tracking programs look to data partners to provide the high quality, relevant data for use on the local and state tracking networks. This data will also contribute to the National Network.

Why should I make my data accessible from the tracking networks?

The benefits of data-sharing range from informing public health interventions to advancing environmental public health knowledge. By sharing your organization's health and/or environmental data, you are helping to expand the quality of public health interventions beyond your jurisdiction.

State and local tracking programs often provide assistance and resources to enhance data collection and surveillance, making the benefits for data stewards even more localized. State and local tracking programs have created web-based and electronic reporting systems, geocoded available data, expanded the temporal and geographic coverage of data, funded new data collection efforts by including new questions in health surveys (such as The Behavioral Risk Factor Surveillance System), and developed and shared tools for data analysis.

How will the data be used?

Data can be used to improve health. Data can be used by local and state health departments, physicians and other public health officials to analyze trends over time, identifying high-risk groups, target effective public health and environmental interventions and advance public health research. Information from these networks can also be used by policymakers to guide public health legislation.

USING THE NETWORK

Who will have access to the data?

Tracking networks are designed to serve a wide variety of audiences. Both state and local networks as well as the National Network can be used by health departments, physicians, policymakers and the general public. For this reason, the tracking networks are constructed to allow for role-based access. As a data partner, you determine what level of data are available to different audiences. For example, public health officials can view data in a greater level of detail than the public

Are the tracking networks constructed to help users correctly utilize the data?

The state, local and national networks make extensive use of descriptive metadata. Metadata is commonly referred to as data about data, and it guides users to utilize data appropriately. Through descriptive metadata, a user can determine the content of the resource, why it was created, how it was created, limitations of the data, access and use restrictions, data quality, and contact information. This is why metadata is so critical to tracking networks.

Can I update the data I provide?

Yes, the state, local and national networks are designed to provide up-to-date information. Data on the network will be updated as frequently and as often as you can provide it.

Can I make corrections to data I post?

Yes, the integrity of the tracking networks relies on accurate

information. If incorrect data is posted, you will work with your partnering tracking program to post the revised data set and any erroneous files will be removed as necessary.

SECURING THE DATA AND NETWORK

How do I know who has access to the data I contribute?

Through a data use agreement. The data use agreement allows you to determine what level of data is available to different audiences. The National Network will use role based access controls to enforce this agreement. Your partnering tracking program can provide you with more in-depth information about its access controls.

Can I find out who has accessed my data from the tracking networks?

Log files and audit trails will be maintained on the National Network. Not every state and local tracking program will use log files on their network. Your partnering tracking program can provide you with more in-depth information about data access.

What is being done to protect the stored data?

The CDC takes data security seriously and has implemented steps to ensure data security on the National Network. The National Network uses digital certificates to authenticate users as well as limiting data access based on user roles. Your partnering tracking program can provide you with more in-depth information about its security measures.

Once my data are on the tracking networks, who owns them?

All data posted on a tracking network continue to belong to the original data owner or contributor.

DATA PARTNERSHIPS TO IMPROVE HEALTH

More on Metadata and Metadata Frequently Asked Questions

Metadata are commonly referred to as “data about data.”

The Environmental Public Health Tracking Network makes extensive use of descriptive metadata; it is considered the backbone of the state, local and national networks. Descriptive metadata are important to the functionality of the network, they allow for discovery and provide descriptive information about data resources on tracking networks.

Descriptive metadata includes information that describes the content, quality, and context of a data resource for the purpose of facilitating identification and discovery. It may reference additional information like quality assurance documents and data dictionaries. Through descriptive metadata a user can learn the what, why, when, who, where, and how for a data resource.

The importance of descriptive metadata

Descriptive metadata enhance network functionality by...

Allowing for the discovery of data resources on tracking networks. Network users can locate resources through a variety of means including keywords, geographic boundaries, and date and time. All of these elements are part of the descriptive metadata entry.

Providing descriptive information about data resources available on tracking networks. Through descriptive metadata, a network user can determine the content of the resource, why it was created, how it was created, any limitations, access and use restrictions, data quality, and contact information. Descriptive metadata helps a user decide if a resource is appropriate for the intended use.

CREATING METADATA

Who creates metadata for the Tracking Network?

Descriptive metadata are best developed by those that know and understand the contents of the data resource. This may be the person(s) who collected or reviewed the data.

Are there tools that will help me create descriptive metadata?

CDC has developed a tool for data stewards to use in creating and managing metadata records. The Metadata Creation Tool will both simplify and standardize the creation of descriptive metadata for the Tracking Network.

In addition, software already exists to aid in metadata creation. Some programs include built-in metadata editors (e.g. Arc-GIS) and allow you to create associated metadata files and edit them.

What are the costs associated with developing descriptive metadata?

The upfront resources for developing descriptive metadata primarily involve staff time. Staff time is needed to learn the metadata creation tool/editor, collect basic information about the data resources, creating the metadata and ensure quality assurance of each metadata entry. However, these initial costs are offset by the benefits of improved public health, opportunities for collaboration and access to analytical tools.

Are there standards for creating and maintaining descriptive metadata on the Network?

Yes, the Metadata Subgroup (MDSG), a group within the CDC Tracking Program's Standards and Network Development workgroup, investigated three primary standards for describing data resources on the National Tracking Network.

- Dublin Core <http://dublincore.org/>
- International Organization for Standardization (ISO) <http://www.iso.org/iso/en/ISOOnline.frontpage>
- Federal Geographic Data Committee (FGDC) <http://www.fgdc.gov/>.

The MDSG found the FGDC Content Standard for Digital Geospatial Metadata to be the most appropriate and adaptable for use within the National Network and that it provides the most utility because it allows for the description of both geospatial and non-geospatial data resources. CDC has adopted this standard for the Tracking Program.

Does a resource exist that provides information about the metadata?

Yes. The Environmental Public Health Tracking Network Metadata Profile outlines the format and content for describing data resources on the National Network. It was developed to make the creation of descriptive metadata easier for data stewards.

The profile complies with the FGDC Content Standard for Digital Geospatial Metadata. It contains 52 of the 195 total data elements available for completion in the FGDC Standard. This represents the minimum description necessary for providing data to EPHT networks. The profile consists of a template and recommendations to assist in the completion of each element.

METADATA ON THE NETWORK

How do I access descriptive metadata on the Tracking Network?

The National Network will include a search function that will allow you to locate data resources.

Where do descriptive metadata reside once they are created?

Descriptive metadata should be stored as closely to the actual data resource as possible for ease of access. The storage method might be a central repository (database) with different permission levels, or simply a collection of extensible markup language (XML) files stored in a common location. In either case, the goal is to keep the metadata connected to the data in a way that will encourage people to use this important documentation to obtain a better understanding of the data, and encourage the metadata's maintenance.

In addition, a Metadata Registry is being created to be an online repository of Tracking Network Metadata records. Once operational, data partners will be able to upload their descriptive metadata into the repository.

When should descriptive metadata be created?

As a best practice, descriptive metadata should be created at the same time as the data resource.

How often should descriptive metadata be updated?

Descriptive metadata should be updated whenever the data resource is updated. This is especially important for changes that alter the structure, content, quality, conditions, and other characteristics of the resource. Updating metadata can also establish when the resource was altered, and by whom. This is important for determining the resource version and how it was altered.

Additional Metadata Resources

Federal Geographic Data Committee (www.fgdc.gov)

U.S. Geological Survey (<http://geology.usgs.gov/tools/metadata>)

Examples of completed descriptive metadata entries are available at GeoSpatial One Stop (<http://gos2.geodata.gov/wps/portal/gos>)

The benefits of descriptive metadata

As more data are being created and stored, there is a need to document data resources for future use and improve accessibility. The benefits of creating descriptive metadata include:

- helping an organization arrange and maintain its data assets;
- limiting duplication of effort by ensuring that others in the organization are aware of the existence of data resources.
- assisting in both determining and improving the quality of data resources;
- improving an organization's ability to comply with rules, regulations, and policies relating to data access;
- reducing the loss of institutional memory for data resources when key staff move on;
- providing information about an organization's data holdings users can locate available resources relevant to an area of interest or study;
- providing the ability to advertise and promote the availability of data resources via online services;
- supplying the means to document limitations about the data resource or disclaimers that are important for potential users to be aware of.

DATA PARTNERSHIPS TO IMPROVE HEALTH

Glossary

CDC's National Tracking Network (National Network) –

A Web-based, secure, distributed network of standardized electronic health and environmental data. The Tracking Network draws data and information from state and local tracking networks as well as national-level and other data systems.

Data Steward –

Entities that collect and administer public health and environmental data for potential use on the Tracking Network

Descriptive Metadata –

Metadata are commonly referred to as “data about data.”

Descriptive metadata includes information that describes the content, quality, and context of a data resource for the purpose of facilitating identification and discovery. It may reference additional information like quality assurance documents and data dictionaries. Through descriptive metadata a user can learn the what, why, when, who, where, and how for a data resource.

Environmental Public Health Tracking –

The ongoing collection, integration, analysis, and interpretation of data about the following factors: (1) environmental hazards, (2) exposure to environmental hazards, and (3) health effects potentially related to exposure to environmental hazards. In fiscal year 2002, Congress appropriated CDC funding to begin developing the nationwide environmental public health tracking network and to develop capacity in environmental health within state and local health departments.

Metadata Creation Tool –

An online tool currently under development by CDC that provides an interface to create and manage metadata records.

Role Based Access Controls –

Model for advanced access control for the Tracking Network where users are assigned to particular roles and through those role assignments acquire the permissions to perform particular operations.

State and Local Tracking Networks –

Those web-based, secure, distributed network of standardized electronic health and environmental data that are developed by the local and state health departments that receive Tracking funding from CDC.

State and Local Tracking Program –

A multi-disciplinary collaboration that involves the ongoing collection, integration, analysis, interpretation, and dissemination of data from environmental hazard monitoring, human exposure surveillance, and health effects surveillance.

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