The Centers for Disease Control and Prevention’s National Environmental Public Health Tracking Program

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September, 2011
“…create a federally supported Nationwide Health Tracking Network with the appropriate privacy protection, that informs consumers, communities, public health practitioners, researchers, and policymakers on chronic diseases and related environmental hazards and population exposures. This will provide the capacity to understand, respond and prevent chronic disease in the country.”
Tracking = Public Health Surveillance

Health and environmental information together in one easy to access website

- [www.cdc.gov/ephtracking](http://www.cdc.gov/ephtracking)

Public and Secure portals

23 state and NYC networks
State and Academic Partners

- University of California Berkeley
- University of Utah
- University of Illinois
- University of Pittsburgh
- New York City, NY
- University of Medicine & Dentistry of New Jersey

Legend:
- Blue: Funded states and cities
- Pink star: Academic Partners of Excellence
Data from State and City Sources

- Asthma hospitalizations
- Birth Defects
- Carbon monoxide emergency visits
- Carbon monoxide hospitalizations
- Community drinking water
- Heart attack hospitalizations
Data from National Sources

- Age of housing
- Asthma prevalence
- Cancer
- Childhood lead poisoning
- Mortality data
- Motor vehicle fatalities
- PM2.5 and ozone
- Population characteristics
- Reproductive and birth outcomes
- Mode of transportation
- Well water monitoring
Coming Soon

- Climate Change
- CDC asthma call-back survey data
- Developmental disabilities
Launched July 7, 2009

Design based on iterative user testing

Version 2 to be launched in October

Allows user to query data

Provides contextual information and prevention messages

www.cdc.gov/ephtracking
Outdoor Air

Air Quality

National Environmental Public Health Tracking

Air Quality

Tracking Links

Quick Links

Outdoor Air and Health
Tracking outdoor air
Search Outdoor air data

Air and health
Air monitoring in the US
Air contaminants

Air pollution in the United States poses a public health threat affecting people throughout the country. It is associated with health problems in emergency department visits and hospital stays for breathing and heart issues in illnesses such as pneumonia and bronchitis.

The Tracking Network includes data about air quality and carbon monoxide concentrations.

Air monitoring in the United States is conducted by many federal, state, local, and tribal air agencies. The Environmental Protection Agency (EPA) provides air pollution data about ozone and particulate matter (PM2.5) to CDC for the Tracking Network. The EPA maintains a database called the Air Quality Tracking Tool (AQTT) which contains data from approximately 4,000 monitoring stations around the country, mainly in urban areas. Data from the AQTT is considered the “gold standard” for determining outdoor air pollution. However, AQTT data are limited because the monitoring stations are usually in urban areas or cities and because they only take air samples for some air pollutants every three days or during times of the year when air pollution is very high.

CDC and EPA have worked together to develop a statistical model (Hierarchical Bayesian) to make modeled predictions available for environmental public health tracking purposes in areas of the country that do not have monitors and to fill in the data gaps when monitors may not be recording data.

There are two primary benefits to creating modeled air pollution data:
- approximately 20% of counties in the United States have actual air monitors. With modeled data, the Tracking Network is able to create indicators for counties that do not have monitors (excluding Alaska and Hawaii);
- most PM2.5 air monitors take samples every three days and many ozone monitors sample only during the ozone season. Modeled data helps to fill in these time gaps.

Monitor + Model Air Data

Air and health
Air monitoring in the US
Air contaminants
Dynamic Queries

Step 1: Select Your Content
- Air Quality
- Annual PM 2.5 Level Monitor + Modeled
- Annual average ambient concentrations

Step 2: Choose Geography & Time
- Checkboxes for California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho

Step 3: Advanced Options
- No Advanced Options

Step 4: Submit
- Run Query

Air Quality | Annual PM 2.5 Level (Monitor + Modeled) | Annual average ambient concentrations of PM 2.5 in micrograms per cubic meter | Multiple Geo | 2005, 2006
Displaying Data

Air Quality | Annual PM 2.5 Level (Monitor + Modelled) | Annual average ambient concentrations of PM 2.5 in micrograms per cubic meter | Multiple Geo | 2005, 2006

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Secure Portal Vision and Implementation

- Components envisioned
  - National data repository
  - Metadata services
  - Tools, methods and other resources
  - Collaboration and knowledge management functions

- Phase II
  - Role-based access control
  - Drag and drop query and custom report building
  - Methods and tools repository
Making Data Available

- **Nationally Consistent Data and Measures**

- **Protecting privacy on Public Portal**
  - Aggregation
  - Suppression
  - Smoothing

- **Secure Portal**
  - Registered users
  - Authentication – CDC SAMS
  - Authorization
    - Application – role based
    - Data access - Role and use based; approval of data steward
Tracking in Action

- **Maine**
  - Data supported bill to require CO detectors in all new homes, rental property and existing homes at the time of transfer

- **Massachusetts**
  - Responded to community concerns about cancer incidence in towns near the Vermont Yankee Nuclear Power plant

- **California**
  - Worked with Bay area NWS to provide evidence to keep cooling centers open in City of San Jose this summer
Tracking Challenges

- Remaining flexible and adaptable to changing health landscape
- Sustaining resources
- Addressing community concerns and research needs
  - Utility for diverse audiences
  - Right to know vs. right to privacy
- Filling data gaps
Questions?

For more information please contact Centers for Disease Control and Prevention
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E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.