Program Mission: To provide information from a nationwide network of integrated health and environmental data that drives actions to improve the health of communities.
Tracking Network: At-A-Glance

A web-based information system that exists at the local, state, and national level that serves the public, environmental public health agencies, health care providers and researchers.

Functions:
- Provide Nationally Consistent Data and Measures
- Describe and Discover Data
- Exchange Data
- Provide Data Management and Analysis Tools
- Inform and Interact with the Public
National Tracking Network

Public Portal

- One-stop access to health and environmental information
- Risk and prevention messages + query system
- Design based on extensive user testing

Secure Portal

- Supporting secure collaboration among multiple partners
- Integrating health, exposure, hazard, and other data
- Sharing of methods, tools, and ideas
- Drawing board for turning data into information

Showcased at Feb 09 National Conference
# Current Data Sources

**Directly from States:**
- Asthma, MI, CO hospitalizations
- CO ED
- Drinking water
- Birth defects

**Requested from Federal partners:**
- Childhood lead poisoning
- Vital statistics
- Cancer
- Air
- USGS water

- Obtaining state health data from Feds – data steward involvement
Data on Version 1.0 of Public Portal

- Asthma, MI, and CO hospitalization
- CO ED
- Childhood lead poisoning and testing
- Housing
- Cancer (Lung and childhood leukemia for SEER states excluding LA)
- Air
- Drinking water
- USGS ground water
Why Cancer as a Content Area?

- Public concern
- States priority area
- Pew Commission recommendation
- Need for local response capacity
- Congressional expectations
Cancer Content Workgroup

- **Co-Leaders**
  - Barbara Goun – Grantee
  - Missy Jamison – National-level Data Steward

- **Membership**
  - Grantees
  - State-level and Local-level data stewards

- **Purpose**
  - Develop recommendations for data and specific indicators to be included on the national portal
Workgroup’s Surveillance Goals

- Increase access to and use of existing cancer incidence data
- Examine geographic patterns and temporal trends in incidence of selected cancers
- Expand public health surveillance of cancer incidence by examining potential ecologic relationships with environmental exposures.
Criteria for Selection of Cancers

- Scientific basis for environmental risk factors
- Attributable risk
- Geographic variability or temporal trends
- Feasibility of obtaining relevant environmental data
- Potential for intervention
- Frequency (incidence rate)
- Public concern
Recommended Cancers

Total population
- Female breast
  - <50 years of age
  - 50+ years of age
- Lung and bronchus
- Bladder (including in situ)
- Brain & Other Nervous System
- Thyroid
- Non-Hodgkin lymphoma
- Leukemia
  - chronic lymphocytic
  - acute myeloid

Childhood (<15 yrs & <20 yrs)
- Brain & Other Nervous System
- Leukemias
  - acute lymphocytic
  - acute myeloid
Recommended Indicators

All indicators calculated at state and county levels

- Annual Counts for each selected cancer
- Age-adjusted or age-group specific incidence rates per 100,000 for non-childhood cancers
- Age-adjusted or age-group specific incidence rates per 1,000,000 for childhood cancers

* Rates age-adjusted to 2000 U.S. Standard Population
Recommended Data Sources

- Data from State Cancer Profiles (SCP) [http://statecancerprofiles.cancer.gov/](http://statecancerprofiles.cancer.gov/)
  - SEER and NPCR data
  - CDC/Tracking requesting data for all states, not just Tracking grantees

- CDC/Tracking has made formal data requests to both the SEER Program and NPCR
Implementation on National Public Portal

**Cancer Types**

- Total Population
  - Breast (females; <50 and 50+)
  - Lung and bronchus
  - Bladder (including *in situ*)
  - Brain & Other Nervous System
  - Thyroid
  - Non-Hodgkin lymphoma
  - Leukemia
    - Chronic lymphocytic
    - Acute myeloid

- Childhood
  - Brain & Other Nervous System
  - Leukemia
    - Acute lymphoblastic
    - Acute myeloid

**Display**

- State
  - Annual Counts & Rates
  - Sex and Race/Ethnicity

- County
  - 5 Year Counts & Rates
  - Sex and Race/Ethnicity
  - Smoothed & Unsmoothed

- State
  - Annual Counts & Rates
  - Sex and Race/Ethnicity
Implementation on National Public Portal (cont’d)

- Phase 1: 8 SEER states (CA, UT, NM, IA, KY, NJ, CT, HI)
- Phase 2: Expand to include willing NPCR states
- Years included:
  - 2001 – most current available
# Data Request

## Environmental Public Health Tracking

### Data Dictionary for Aggregate Data

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Description</th>
<th>Data Type</th>
<th>Code Scheme</th>
<th>Legal Values</th>
<th>Field Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANCER</td>
<td>Cancer category</td>
<td>Integer</td>
<td></td>
<td>1 - 11</td>
<td>2</td>
</tr>
<tr>
<td>STATE</td>
<td>State patient resided</td>
<td>String</td>
<td>FIPS</td>
<td>01-99</td>
<td>2</td>
</tr>
<tr>
<td>COUNTY</td>
<td>County patient resided</td>
<td>String</td>
<td>FIPS</td>
<td>U = Unknown, Valid county code, U</td>
<td>5</td>
</tr>
<tr>
<td>YEAR</td>
<td>Calendar year of diagnosis</td>
<td>Integer</td>
<td>yyyy</td>
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<td>4</td>
</tr>
<tr>
<td>SEX</td>
<td>Sex of the patient</td>
<td>Text</td>
<td></td>
<td>M = Male, F = Female</td>
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<tr>
<td>AGE GROUP</td>
<td>Patient age interval</td>
<td>Integer</td>
<td>0 = under 1 year, 1 = 1-4 years, 2 = 5-9 years</td>
<td>0 – 19</td>
<td>2</td>
</tr>
<tr>
<td>ETHNICITY NHIA-derived</td>
<td>Patient ethnicity, NHIA-derived</td>
<td>Text</td>
<td>H = Hispanic, NH = non-Hispanic</td>
<td>H, NH, U</td>
<td>2</td>
</tr>
<tr>
<td>RACE GROUP</td>
<td>Patient race group</td>
<td>Text</td>
<td>W = White, B = Black</td>
<td>W, B, AP, N, O, U</td>
<td>2</td>
</tr>
<tr>
<td>COUNT</td>
<td>Count of cases</td>
<td>Integer</td>
<td></td>
<td>0 to nnnnnnnnn</td>
<td>8</td>
</tr>
</tbody>
</table>
Goals of presenting data

- Communicate underlying disease risk
- Generate stable estimates of disease risk
- Protect confidentiality
Protecting Privacy on National Public Portal

● Guidance for re-release plan:
  ○ General: CDC re-release policy; CDC-CSTE workgroup recommendations
  ○ Specific: NPCR-CSS, Jan 31, 2008; SEER; SCP

● Key principles in development:
  ○ Utility
  ○ Privacy
    ■ match or exceed current protection standards
    ■ meet data stewards requirements
  ○ Science

● Tracking plan for cancer data: will follow suppression criteria utilized on SCP
National Public Portal
Environmental causes of chronic diseases are hard to identify. Measuring amounts of hazardous substances in our environment in a standard way, tracing the spread of these over time and area, seeing how they show up in human tissues, and understanding how they may cause illness is critical. The National Environmental Public Health Tracking Network is the start of that system.

The National Environmental Public Health Tracking Network is a system of integrated health, exposure, and hazard information and data from a variety of national, state, and city sources. On the Tracking Network, you can explore information and view maps, tables, and charts about health and environment across the country. Learn more about tracking.
There is a gap in information about how the environment affects chronic diseases like asthma and cancer.

**Asthma**
- Asthma and the Environment
- Tracking Asthma
- Search Asthma Data

**Childhood Lead Poisoning**
- Childhood Lead Poisoning and the Environment
- Tracking Childhood Lead Poisoning
- Search Childhood Lead Poisoning Data

**Birth Defects**
- Birth Defects and the Environment
- Tracking Birth Defects
- Search Birth Defects Data

**Heart Attacks**
- Heart Attacks and the Environment
- Tracking Heart Attacks
- Search Heart Attacks Data
The most common environmental health hazards are air and water pollution.

- **Homes**
  - Homes and Health
  - Tracking Housing Conditions
  - Search Homes Data

- **Outdoor Air**
  - Outdoor Air and Health
  - Tracking Outdoor Air
  - Search Outdoor Air Data

- **Water**
  - Community Water
  - Search Community Water Data
  - Well Water
  - Search Well Water Data
Query and Results

Step 1: Select a State.
Indicators and Data

Environmental public health tracking is the ongoing collection, integration, analysis, and dissemination of data. It is essentially environmental public health surveillance. These data can be used to:

- Quantify the magnitude of a public health problem
- Detect unusual trends in health, exposures, and hazards
- Identify populations at risk of environmentally related diseases or of exposure to hazards
- Generate hypotheses about the relationship between health and the environment
- Direct and evaluate control and prevention measures and individual actions
- Facilitate policy development

Indicators

An environmental public health indicator provides information about a population’s health status with respect to environmental factors. Tracking Indicators were developed in collaboration with national, state, and local environmental health partners. Here you can access detailed information about each indicator available on the Tracking Network.

View Indicator Definitions and Documentation:

Search for Data

Metadata are “data about data”. Metadata describe the content, quality, and context of a dataset and provide links to additional information such as quality assurance documents and data dictionaries. The Tracking Network contains metadata records for datasets used to create the Tracking Indicators and for datasets maintained by national, state, and local environmental health partners.

Search Data—Indicators and Data:

Type in Keywords: 

Advanced Search
Indicator: Incidence of Lung and Bronchus Cancers

Cancer data will be available on the Tracking Network soon. Please visit the Related Links section to find additional resources for Cancer information or visit the Cancer State Profiles.

Content Area:
- Cancer

Indicator:
- Incidence of Lung and Bronchus Cancers

Type of EPHT Indicator

<table>
<thead>
<tr>
<th>Health Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Annual number of cases for selected cancers</td>
</tr>
<tr>
<td>2. Annual age-adjusted incidence rate for selected cancers per 100,000 population (aged &lt;15 years) or per 1,000,000 population (aged &lt;20 years) for childhood cancers</td>
</tr>
</tbody>
</table>

Measures

As defined below, annual counts and incidence rates for each of the selected cancer types will be available by predetermined age groups, sex, and race/ethnicity groups.

Numerator is composed of counts of unique invasive primary incident cases of cancer "x" diagnosed during a specified calendar year within residents of a specified geographic region. Incident cancer data were originally collected by state and regional cancer registries. It is proposed that data for the National EPHT Network be obtained from the NCI and CDC joint venture, State Cancer Profiles.

Denominator is composed of counts of the population residing in the geographic region of interest as of a specified date. Population data were originally collected by the U.S. Census. For these national cancer indicators, it is proposed that population data be obtained from the NCI and CDC's State Cancer Profiles, which use U.S. Census data as modified by SEER.

A list of cancer sites/types has been recommended by the EPHT CWG Cancer Team for inclusion in the EPHT Network as indicators and measures:

- Breast cancer (females)*
  - <50 years
  - ≥250 years

Derivation of
Cancer

Cancer is a group of disease in which abnormal cells in the body grow out of control. Cancer is not just one disease but many different diseases, with more than 100 different types. Cancer is one of the most common chronic diseases in United States, second only to heart disease as the leading cause of death.
Cancer and the Environment

Cancer is a disease with many risk factors; those factors can affect the illness in ways that are not fully understood. Most cancers take a long time to develop. Studies have documented that it may take as long as 40 years for some cancers to develop after exposure to some substances, depending on the type of cancer.

Through surveillance and tracking, scientists have shown trends in cancer that sometimes correlate with the presence of certain environmental pollutants. This correlation does not rule out other causes but does suggest that environmental factors may increase the risk for particular cancers.

Additional Links
- Leukemia
- Female Breast Cancer
- Lung Cancer
- Bladder Cancer
- Cancer of the Brain & Central Nervous System
- Thyroid Cancer
- Non-Hodgkin Lymphoma
By using these data, you signify your agreement to comply with the following requirements:

1. Use the data for statistical reporting and analysis only.
2. Do not attempt to learn the identity of any person included in the data and do not combine this data with other data for the purpose of matching records to identify individuals.
3. Do not disclose or make use of the identity of any person or establishment discovered inadvertently and report the discovery to:

   Associate Director for Science  
   Office of Science Policy and Technology Transfer, CDC  
   Mail Stop D50  
   Phone: 404-639-7240

4. Do not imply or state, either in written or oral form, that interpretations based on the data are those of the original data sources or CDC unless the data user and data sources are formally collaborating.

5. Acknowledge, in all reports or presentations based on these data, the original source of the data and CDC.

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View Data Related To:

- **Content Area**: Cancer
- **Indicator**: Select Indicator
- **Measure**: Select Measure

Location and Time:

- **Select** Indicator first and then Measure to display Geography. **Select** Geography and then click Show TimePeriod to display Time Period.
Query and Results

View Data Related To:
Content Area:
Cancer
Indicator:
Incidence of Lung and Bronchus Cancers
Measure:
Age-adjusted rate per 100,000 population over a 

Location and Time:
Select Indicator first and then Measure to display Geography. Select Geography and then click Show Time Period to display Time Period.

Title: Age-adjusted incidence rate of Lung and Bronchus Cancer per 100,000 population over a five year period
Geographic Resolution: One State All Counties NM
Time Resolution: 2001 - 2005
Addressing Privacy/stability

Footnotes

1. Data provided by NCI’s Surveillance Epidemiology and End Results Program. Data for CA, KY, and NJ also provided by CDC’s National Program of Cancer Registries Cancer Surveillance.

2. Incidence rates (cases per 100,000 population per year) are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ..., 80-84, 85+). Rates are for this period.
Age-adjusted incidence rate of Lung and Bronchus Cancers per 100,000 population over a five year period.

**NEW MEXICO**

<table>
<thead>
<tr>
<th>County</th>
<th>2001 - 2005</th>
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<tbody>
<tr>
<td>BERNALILLO COUNTY, NM</td>
<td>45.31</td>
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<tr>
<td>CATRON COUNTY, NM</td>
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<tr>
<td>CHAVES COUNTY, NM</td>
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<tr>
<td>CIBOLA COUNTY, NM</td>
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<tr>
<td>COLFAX COUNTY, NM</td>
<td>****</td>
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<td>CURRY COUNTY, NM</td>
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<td>DEBACA COUNTY, NM</td>
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<tr>
<td>DONA ANA COUNTY, NM</td>
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<tr>
<td>EDDY COUNTY, NM</td>
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<td>GUADALUPE COUNTY, NM</td>
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<td>HARDING COUNTY, NM</td>
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<td>HIDALGO COUNTY, NM</td>
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<tr>
<td>LEA COUNTY, NM</td>
<td>37.8</td>
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<tr>
<td>LINCOLN COUNTY, NM</td>
<td>****</td>
</tr>
<tr>
<td>MASON COUNTY, NM</td>
<td>****</td>
</tr>
<tr>
<td>LINCOLN COUNTY, NM</td>
<td>****</td>
</tr>
</tbody>
</table>
Age-adjusted incidence rate of Lung and Bronchus Cancer per 100,000 population over a five year period

NEW MEXICO

BERNALILLO COUNTY, NM
CATRON COUNTY, NM
CHAVES COUNTY, NM
CIBOLA COUNTY, NM
COLFAX COUNTY, NM
CURRY COUNTY, NM
DEBACA COUNTY, NM
DONAANA COUNTY, NM
Query and Results

**Title:** Age-adjusted incidence rate of Leukemia in children less than 20 years of age per 1,000,000 population

**Geographic Resolution:** All States No Counties

**Time Resolution:** Multiple Years: 2004, 2005,
Smoothing

View Data Related To:
Content Area:
Cancer
Indicator:
Incidence of Lung and Bronchus Cancers
Measure:
Age-adjusted rate per 100,000 population over a

Location and Time:
Select Indicator first and then Measure to display
Geography. Select Geography and then click Show
TimePeriod to display Time Period.

- All Counties
- 2001 - 2005
- CALIFORNIA
- CONNECTICUT
- HAWAII
- IOWA
- KENTUCKY
- NEW JERSEY
- NEW MEXICO
- UTAH

Title: Age-adjusted incidence rate of Lung and Bronchus Cancer per 100,000 population over a five year period
Geographic Resolution: One State All Counties NM
Time Resolution: 2001 - 2005
Smoothed: Yes
Why Smoothing?

- **Unsmoothed rates:**
  - Assumes outcomes in each administrative jurisdiction are statistically independent of those in nearby counties.
  - Suppression makes it difficult to determine patterns.

- **Smoothed rates:**
  - Provide information where counts and rates may have been suppressed.
  - Enable pattern recognition and comparison tasks.
  - Not rate readout task and must be explained to user.
Smoothing Methods

- Utilizing a locally-weighted average model
  - Evaluated several methods
  - A “moving average” approach
  - Induces stability by enlarging the effective population for each estimate
  - Facilitates pattern recognition
Secure Portal

● Expected to launch soon after the Public Portal

● Features:
  o Role/based access giving data owners the ability to delegate access to their data to other secure portal users.
  o Drag and drop report building based on the Business Objects software tool.
  o Access to the Tracking Toolkit
  o Access to the Tracking metadata creation tool.

● Planned enhancements:
  o Online training modules
  o Maps
  o Collaborative workspace
What Does this Mean for You?

- Increased awareness
- Available tools
- Opportunity for expansion to address your needs
  - E.g. CWG interest in adding data from other sources on SES; smoking; etc.
- Tracking states:
  - Leveraging expertise
  - Some interested in obtaining pre-processed state-specific SCP data (in collaboration with their registries)
Questions

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770-488-3827