CDC’s Environmental Public Health Tracking Program:

“An Update on Current Activities and Projects”

Greg Kearney, DrPH, MPH, RS
Lisa Hines, MPH, CHES

Environmental Public Health Tracking Branch

Outline

- Background
- Update of Current Activities
- New Activities and Projects
  - National Portal
  - Academic Partner Projects
- State Success Stories
- Coming Soon
- Resources
Established Associations Between Environmental Factors and Health Effects

- Lead ➞ Impaired cognitive development in children; nervous system dysfunction in adults
- Arsenic ➞ Skin cancer
- Benzene ➞ Leukemia
- Vinyl chloride ➞ Angiosarcoma of the liver
- Methylmercury ➞ Adverse reproductive outcomes; neurotoxic effects
- Asbestos ➞ Lung cancer; mesothelioma

Suggested Associations Between Environmental Factors and Health Effects

DBP’s, Pesticides, Bisphenol A, Endocrine Disruptors, Pharmaceuticals in DW, Selected birth defects, Cancers, Developmental disabilities (Complicated by lifestyle & Behavioral choices)

Public Perceptions of Environmental Health Risks

“How important are environmental factors in causing disease?”

- Very Important: 53%
- Somewhat important: 37%
- Don’t know: 1%
- Not important: 9%

Princeton Survey Research Associates, 2000; Margin of error ±3%
In 2000, the Pew Environmental Health Commission detailed a report to Congress...

"America’s Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network Environmental...

...a lack of basic data and information needed to document links between environmental hazards and chronic diseases.

The Pew Charitable Trust: Report

Outlined the steady increase of Chronic Diseases in the US:

• Birth Defects - #1 Cause of Infant Mortality
• Learning and Behavioral Disorders – rising, over 50% in the past 10 years
• Asthma rate - 75% increase (1980-1994)
• Cancers: increases in incidence of selected cancers

Found that the EPHS was fragmented, neglected and ineffective.

Despite evidence of increasing rates of disease and environmental links, a coordinated system to track many of the exposures to health effects that may be related to environmental hazards did not exist.

http://healthyamericans.org

The Mission

"To provide information from a nationwide network of integrated health and environmental data that would drive actions to improve the health of communities"
The Tracking Network

The Tracking Network is a system of integrated health, exposure, and hazard information and data from a variety of national, state, and city sources.

www.cdc.gov/ephtracking

National Public Portal

- One-stop access to health and environmental information
- Allows user to query data
- Provides contextual information and prevention messages

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Tracking Network Implementation

- 2009 - The National Network launched
  http://www.cdc.gov/nceh/tracking/

- Key Functions:
  - Provide Nationally Consistent Data and Measures
  - Describe and Discover Data
  - Exchange and Provide Data & Information
  - Provide Analytical Tools
  - Inform and Interact with the Public

Goal: Improve the Health of Communities

Q. Why is Tracking an important tool in environmental public health?

A. It can be used to:
   - Respond to questions from the public about environmental hazards, exposures or health conditions
   - Identify patterns and trends that are not normal
   - Develop or assess public health programs, rules, or policies
   - Identify problems with data and work to improve them
   - Explore connections among environmental hazards and health outcomes
   - Produce ideas and plans for research
   - Provide data for studies and investigations

Tracking Partners

- Federal, State and local health departments and Agencies
- National public health and EPH organizations
- Other CDC Programs
- Federal, State and local health registries
- Universities
Current Tracking Grantees

State/City are responsible for implementing, maintaining and expanding their own Tracking Network while providing data feeds to CDC.

Tracking - Indicators

Data & Information on Health, Environmental Hazards & Exposures

- Hospitalizations
- Water
- Air Quality
- Childhood Lead
- Birth Defects
- Reproductive Outcomes
- Cancer

Current Data - National Sources

- Health Outcome
- Asthma prevalence – CDC, BRFSS
- Selected Cancer – CDC, NPCR and SEER
- Childhood lead poisoning – CDC, Lead
- Mortality data – CDC, NCHS
- Reproductive and birth outcomes – NCHS
- Environmental
- PM2.5 and ozone – US EPA
- Socio-demographics (other)
- Age of housing – US Census
- Population characteristics – US Census
- Types of transportation – US Census

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Updates: Since Last AEC

- New states contributing data: CO, LA, MN, SC, KS, VT, and IA (coming soon)
- Updated data on birth defects, CO poisoning, childhood lead poisoning, heart attack, cancer data from all grantees

Updates: Since Last AEC (cont’d)

- Carbon monoxide poisoning:
  - Mortality data for all 50 states; added years of data
- Asthma prevalence for adults and children
  - BRFSS
- Community design
  - Types of transportation to work
  - Air quality (ozone and PM$_{2.5}$)
  - Childhood lead poisoning
  - Motor vehicle-related fatalities
- More up-to-date air monitoring and cancer data

NEW PROJECTS: ADVANCING EPHT THROUGH SCIENCE

- Academic Partners
- Health Impact Assessment – Air Pollution
- Geographic Health Query Tool

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Academic Partners

- September 2010
- Contracts – with 2 year renewable option
- Requires deliverables and collaboration with grantees
- Four topic areas, Seven total awards
- Topic 1 – Development of Epi Methods and Tools for Tracking
- Topic 2 – Development of Exposure Methods
- Topic 3 – Data Linkage of Air Quality and CVD
- Topic 4 – Data Linkage of Drinking Water and Health

Academic Partners

- The University of California – Berkeley
- The University of Pittsburgh
- University of Medicine & Dentistry of New Jersey
- The University of Illinois – Chicago*
- The University of Utah*

*New EPHT partner

Academic Partners Projects

**Topic 1**
*The University of CA – Berkeley:*
Developing Tracking model to detect unexpectedly high disease rates associated with environmental exposures

**Topic 2**
*The University of Pittsburgh:*
Using air quality and bio-monitoring data to identify populations at higher risk for childhood lead poisoning
Academic Partners Projects (cont’d)

Topic 3
University of Medicine & Dentistry New Jersey:
Conducting a comprehensive analysis of PM 2.5 and cardiovascular disease studies to determine how reducing air pollution levels may improve public health
University of Pittsburgh:
Data Linkage of air quality and heart attacks, heart disease, and stroke using hospitalizations and mortality data
UC Berkeley:
Linking air quality and CVD using the application of biomarkers using NHANES data

Academic Partners Projects (cont’d)

Topic 4
The University of Illinois – Chicago:
Linking water contamination and adverse reproductive and birth outcomes
The University of Utah
Studying how chemicals in tap water may impact reproductive and birth outcomes

Health Impact Assessment - Air Pollution

Two-year collaboration between CDC, Emory, EPA, and selected EPHT Partners (Florida, NY City, NY State, Oregon)

Purpose: Examine methodologies for making defensible decisions regarding the conduct of health impact assessments for ambient ozone and PM2.5 concentrations at the state and sub-state level

Objective: Train EPHT selected partners on US EPA software and evaluate use and feasibility for EPHT
**HIA - Definition**

- “a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population” (1999 Gothenburg consensus statement, [http://www.euro.who.int/en/what-we-do/health-topics/environmental-health/health-impact-assessment](http://www.euro.who.int/en/what-we-do/health-topics/environmental-health/health-impact-assessment)).

**HIA-Air Pollution Tool**

[BenMAP](http://www.epa.gov/air/benmap/)

**Geographic Health Query Tool**

(coming soon)
TRACKING SUCCESS STORIES

Responding to the Deep Water Horizon Oil Spill in Louisiana

- Tracked worker & resident exposures and health effects
- Mapped hazard and emergency response data
- Provided info on safety, seafood, water, and air quality
- Tracking identified worker safety violations; ensured workers were provided appropriate personal protective equipment

Identifying High-risk Neighborhoods in California

- Routine review of data on the California Tracking Network noted a pattern in the risk of preterm birth in Fresno County
- Notified the Fresno Department of Public Health
- Maps and data used to ID high risk census tracts and target activities related to childhood lead poisoning, air quality and asthma.
- Included in a new 5-year plan to address maternal and child health in the county
Supporting Built Environment Policy Changes in New York City

- Bureau of Chronic disease wanted to evaluate potential health benefits of –
  - Requiring buildings to post signs encouraging stair use
  - Mandating new stairwell be made more accessible and appealing
- NYC EPHT estimated the number of additional people who would take stairs, modeled reductions in obesity
- Drafted health code and building code revisions

Florida

Consuming fish safely

http://www.floridatracking.com

South Carolina

Real time ozone level

http://www.scdhec.gov/environment/hac/appare.asp
Maryland

Ability to display multiple data sources on a single table, map, or chart

http://eh.dhmh.md.gov/ideaweb/maps.aspx

Challenges

- Remaining flexible and adaptable to changing health landscape
- Sustaining resources
- Addressing community concerns and research needs
  - Right to know vs. right to privacy
- Filling data gaps
- Communication and outreach

Lessons Learned

- Link people, programs, resources
  - Significant "up front" work
  - Participatory approach takes time
  - Different groups/languages speak different "languages"
- Policy changes may be required
- It’s easy to rebuid slicers
- Require innovation, adaptability, persistence
- Varying levels of state "readiness"
  - If you’ve seen one state, you’ve seen one state

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COMING SOON

National Network: Planned Enhancements in 2011
Public Portal: Additional data
  • Biomonitoring
  • Climate change
  • Developmental Disabilities
  • Additional states reporting birth defects data
  • Updates to current data sets

Tracking Climate Change Module Overview
  • Initial Module is to identify and evaluate heat-related health effects
    – Heat health effects messaging
    – 3 Heat Indicators
      • Heat vulnerabilities
      • Identifying heat episodes
      • Evaluating heat-associated mortality
National Network: Planned Enhancements in 2011

Public Portal: Functionality
- Enhanced mapping capabilities
- Improved graphs
- Easier query panel
- Second view feature
- Advanced view stratification

Coming Soon
- A redesigned query interface providing a more intelligent, friendly user experience
- A redesigned results panel allowing more ways to interact with maps, charts, and tables
New map view provides larger view for better on-screen comparison

Options for multiple charts, benchmarks, and sortable table columns

New options allow the comparison between different states and years

Callout box provides additional mapping options the ability to view related information
RESOURCES

Tracking Resources for Non-Funded States
- Products and Communities of Practice
- Workgroups and meetings
- How to Guide (coming soon)
- List-serv: eph@cdc.gov
- Webinars
- Training: online training page on the Network
- Mentoring program

Resources cont.
- Webinars: ongoing and archived
  - The National Tracking Network, an Overview
  - Insights into Web Portal Development and Design
  - Trading Partner Agreements (TPAs) and Effective Messaging
- Mentoring program
- NACCHO workgroup

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Tracking 101

• 12 Modules covering a variety of topics related to Tracking

• Free continuing education credits
  – NEHA Approved CE Credits
  – Certified Health Education Specialists (CECH)
  – Nursing CNE credits

• http://nehacert.org

Communication Materials

• Network overview
• Grantee profiles
• Program summary
• Data Sources
• Podcast Series

Electronic Sharing

• Widget
• Buttons
• List-serv: epht@cdc.gov
• Social Media
  – YouTube video
  – Facebook
  – Twitter

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In the Future

- Content specific fact sheets
- Awareness event toolkits
- Tracking 102 online training
- Updated state fact sheets
- New 5 Year Strategic Plan

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
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.

Lisa Hines: lhines@cdc.gov
Greg Kearney: gkearney@cdc.gov

Thank you!