

# Overview of the National Environmental Public Health Tracking Program

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# Presentation Overview

- How did the tracking program come about?
- What has been done so far?
- Implementing birth defects environmental health tracking

# The Future of Public Health (IOM, 1988)



“The removal of environmental health authority from public health agencies has led to fragmented responsibility, lack of coordination, and inadequate attention to the health dimensions of environmental problems.”

# Typical Environmental Exposures: TODAY



## Infectious Agents

**Fire Byproducts**  
Particulates, PAHs, CO

## Heavy Metals

Lead, Mercury,  
Palladium, Cadmium

## Industrial Chemicals

PCBs, Dioxin, Toxaphene,  
VOCs, Phthalates,  
Adipates, PBDEs  
and many others

## Chlorination Byproducts

Chloroform, Bromoform, etc.

## Vehicular Emissions

CO, Ozone,  
Particulates, Benzene, etc.

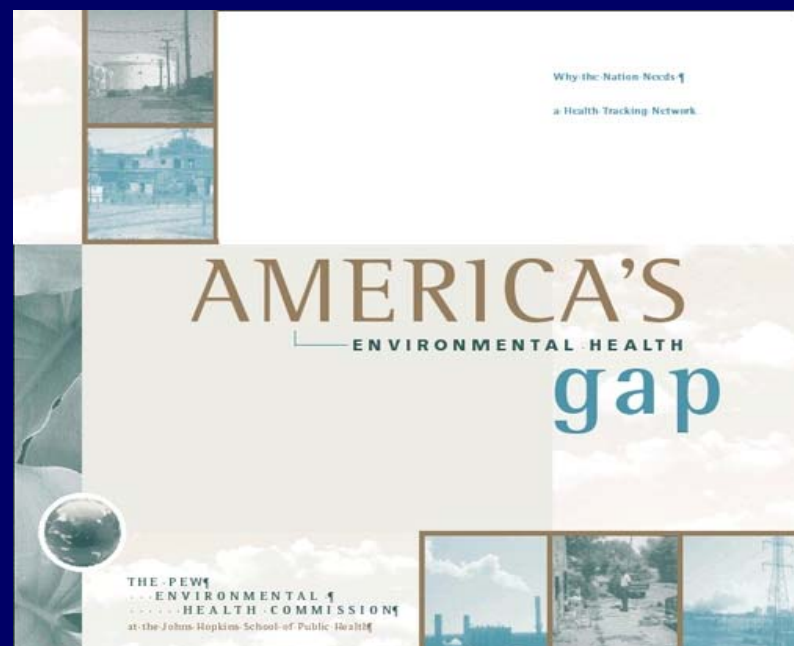
## Pesticides

DDT, Mirex, 2,4-D,  
Atrazine, Malathion, etc.



# America's Environmental Health Gap

- Pew Commission Study
  - Survey of local and state health departments
  - Review of existing data sources
  - Review of federal tracking systems



## Report Findings (2000)

- No national strategy
- National leadership void
- No linkages between hazard, exposure and outcome tracking
- Limited co-ordination of efforts across country eg no data standards
- Less than 50% pop covered by BD registries
- Public expectation – balance knowledge vs privacy

# Recommendations

1. Establish baseline network for diseases and exposures (incl. birth defects, asthma, cancer)
2. Early warning system – EH emergencies
3. State pilot tracking programs
4. Federal investigative response capability
5. Linkage to community and academia

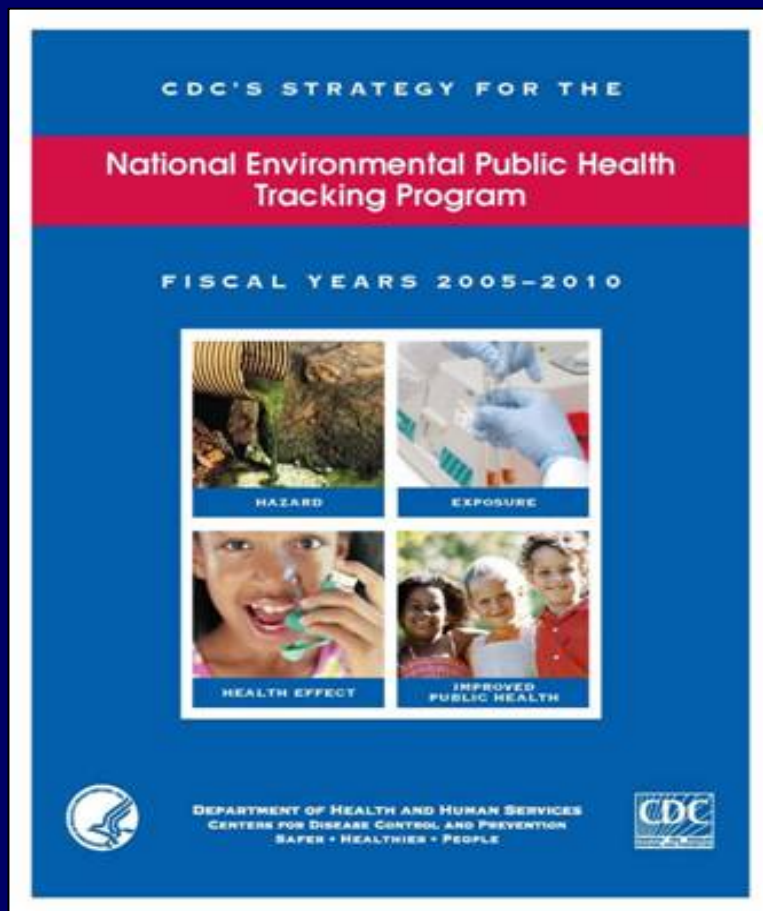
# Congress Responds

- CDC's National Environmental Public Health Tracking Program initiated in 2002
  - Congressional funding for *"development and implementation of a nationwide environmental health tracking network and capacity development in environmental health at State and local health Departments"*





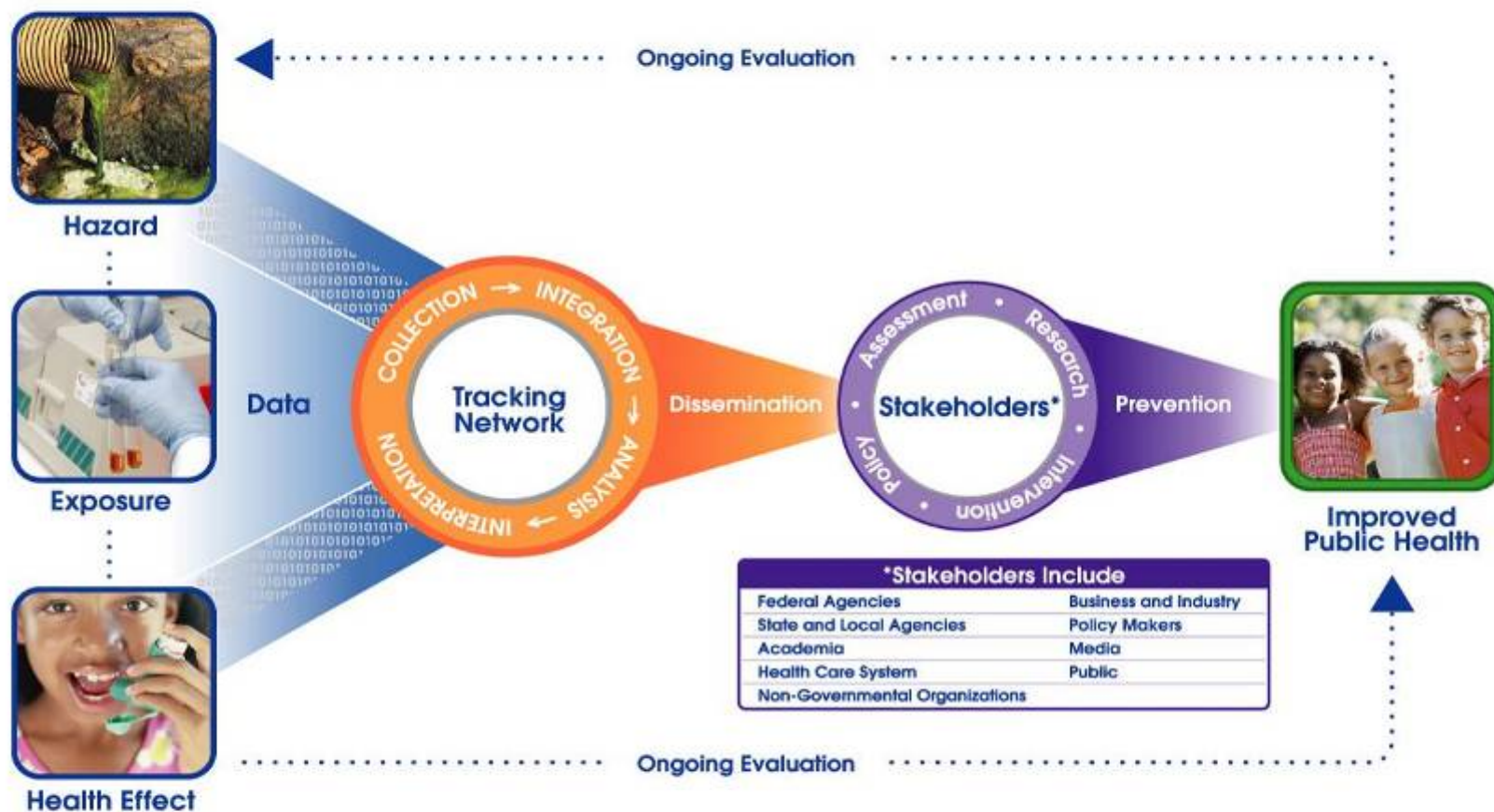
# National Environmental Public Health Tracking Program



## MISSION:

To provide information from a nationwide network of integrated health and environmental data that drives actions to improve the health of communities

# ENVIRONMENTAL PUBLIC HEALTH TRACKING



**\*Stakeholders Include**

Federal Agencies	Business and Industry
State and Local Agencies	Policy Makers
Academia	Media
Health Care System	Public
Non-Governmental Organizations	



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION  
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# 2002 - 2006 Building Capacity and Pilot Testing





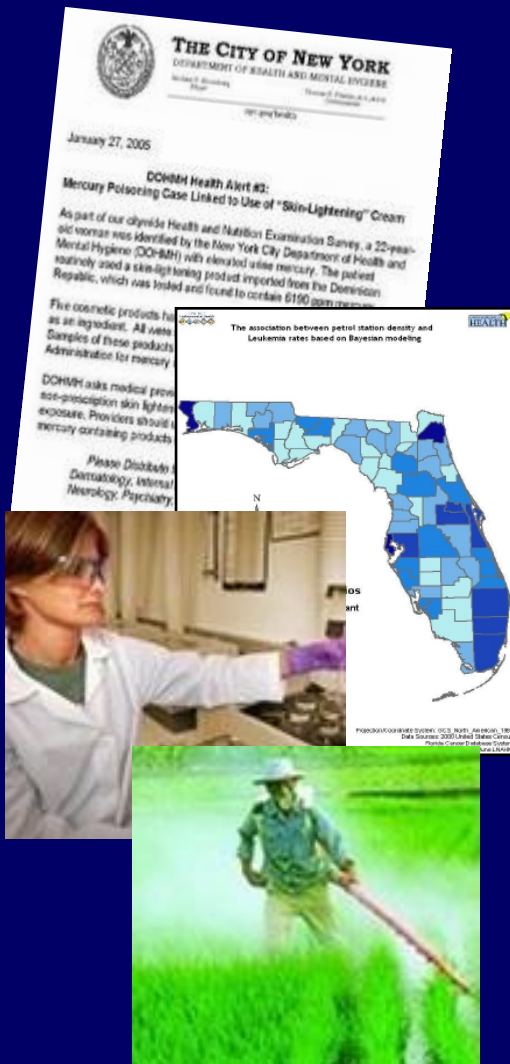
# Pilot Projects

Measured	# Grantees	# Projects
Air	13	19
Asthma	11	14
Water	11	23
Cancer	8	9
Lead	6	7
Birth defects	5	7
Pesticides	4	4
Reproductive health	4	4
CO	3	3
Fish/shellfish	2	2

# Birth Defects Pilot Projects

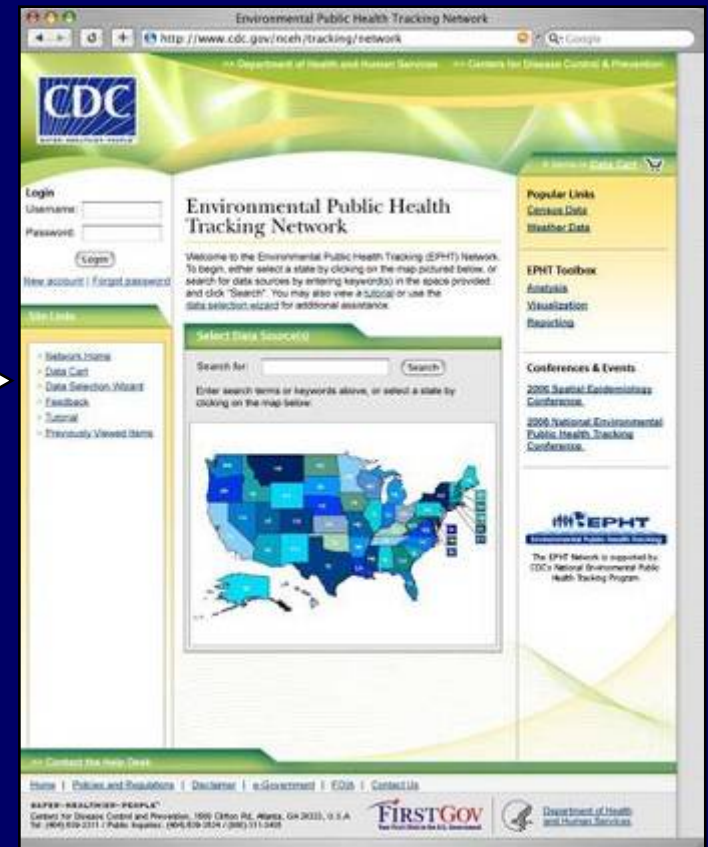
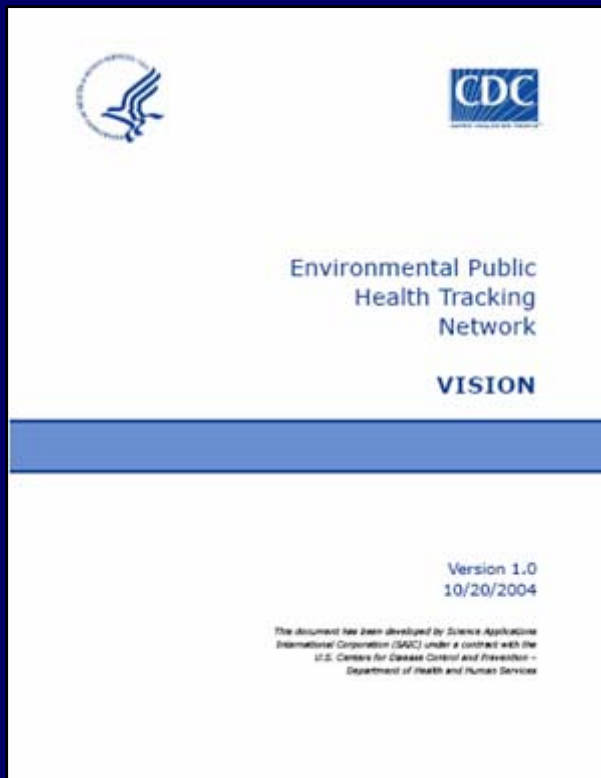
- Strengthen existing registries (eg geocoding)
- Test environmental linkage
  - FL – spatial analysis methods (RIF, WinBUGS, Satscan)
  - MA – drinking water – distribution system boundaries
  - NJ – Clefts, Cardiac, Downs, Hypospadias, Craniosynostosis, Gastroschisis – drinking water
  - OK – linkage methods
  - UT – tract level analysis – proximity to TRI sites
  - Development disability – PCB (NYS) pesticides (CA)

# Overall Results from Funded Projects



- Increased capacity
- Increased availability and enhancement of existing data
- Built new data systems
- Created analytic tools
- Linked data
- Took action

# Piloting to Implementation



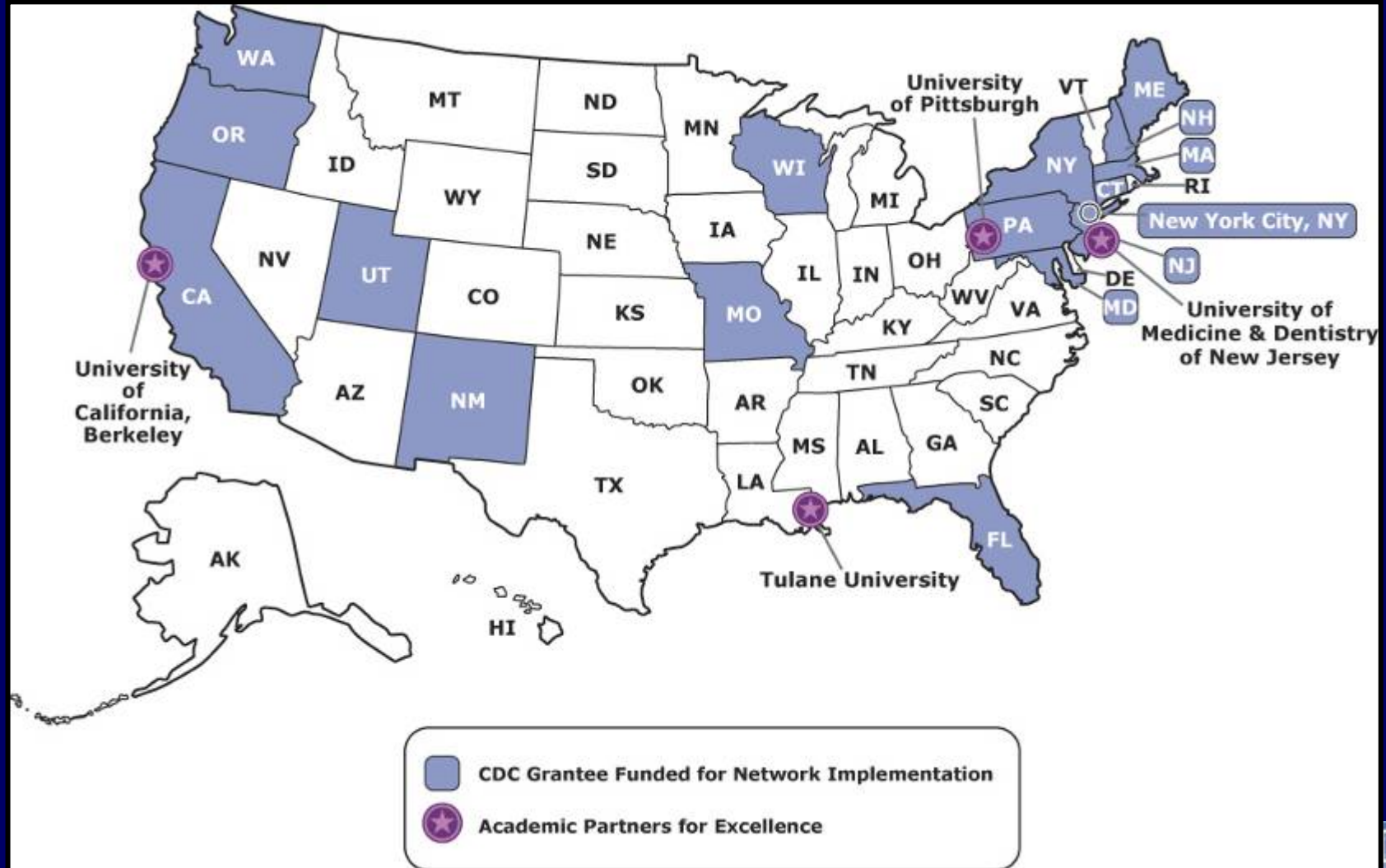


# New Tracking Funds in 2006

*(CDC RFA-EH06-601)*

- To provide state health departments the resources to implement statewide EPHT networks that will be part of the National EPHT Network
- 17 awards
- Project Period: 5 Years

# CDC's Tracking Program Grantees



# National Tracking Network

## Key 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

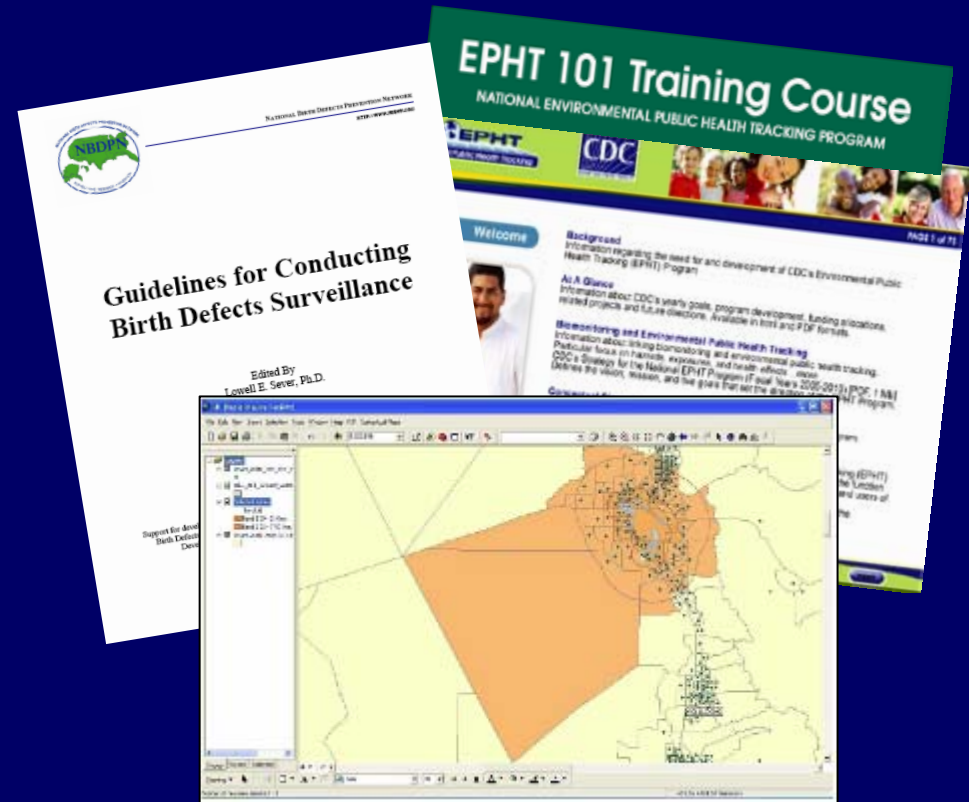


# Tracking Objectives

- Ecologic linkage and population level tracking
  - Unknown effects
    - Generate hypotheses
  - Known associations
    - Identify and quantify at risk populations
    - Monitor intervention impacts
- Facilitate individual level and multilevel studies
  - Facilitate data exchange and development of tools
  - Measure associations

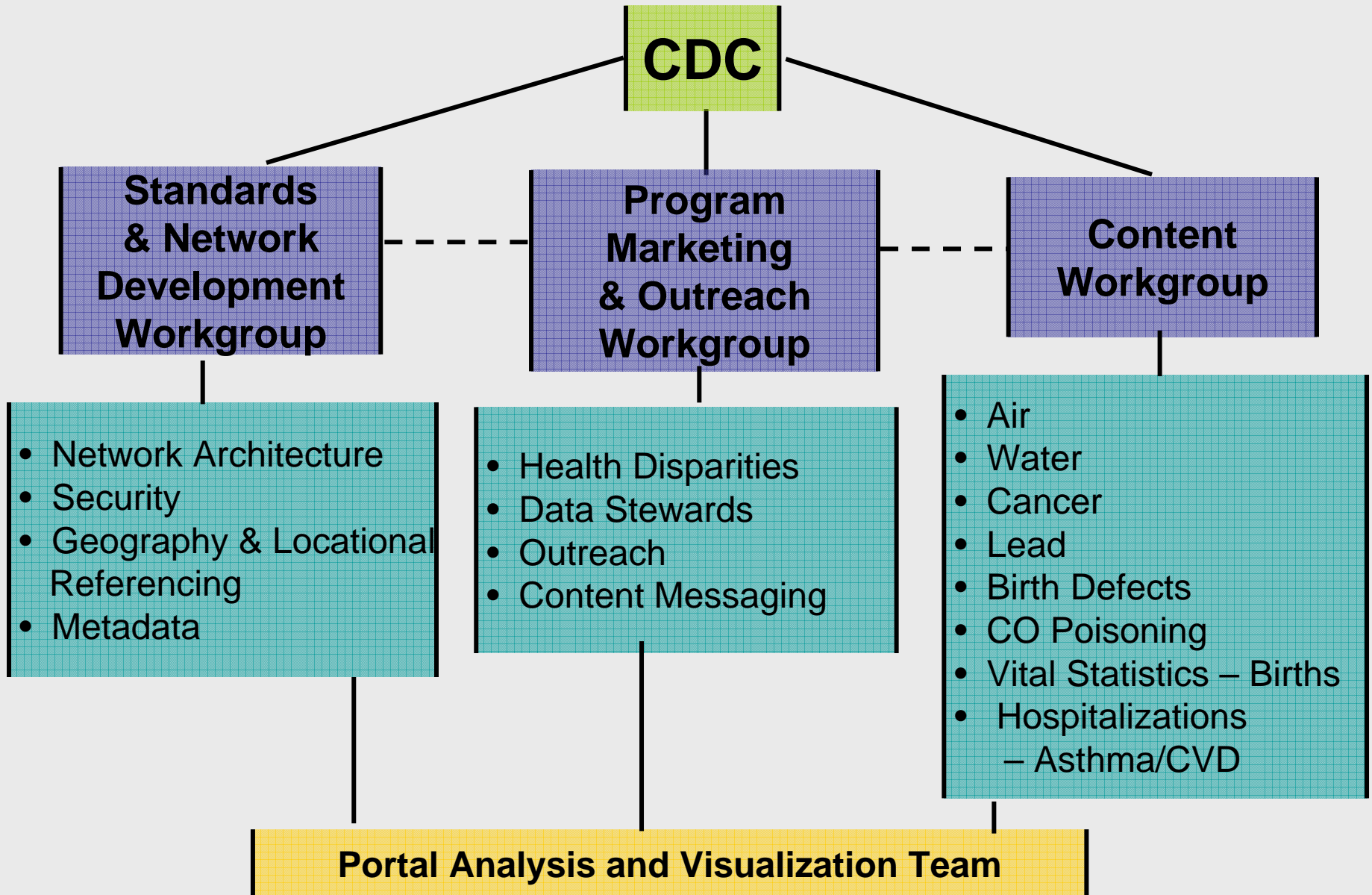
# National Approach

- Identification and adoption of standards (NCDMs)
- Tools development (PAVR)
- Training
- Partnership and Collaboration



Metadata Information				
Identification	Entity and Attributes	Metadata Reference	Time Period Information	Contact Information
Element	Selected Data Source			

# Ensuring Stakeholder Input



# Birth Defects Implementation

- Content Work Group
- 10 of 17 grantees commence 2008
- Collaboration between registries and EPHTN programs

State	CDC codes	Age	Type	Outcomes
CA	Yes	Up to age 1	P	FD, T†
CT	No	Up to age 1	P	
FL	Yes	Up to age 1	A & P	FD
ME	No	Up to age 1	A & P	FD, T
MD	No	Newborn	P	FD, T
MA	Yes	Up to age 1	A	FD
MO	No	Up to age 1	P	FD
NH	Yes	Up to age 1	A	FD, T
NJ	No	Up to age 2*	P	
NM	No	Up to age 4	A & P	FD, T
NY	Yes	Up to age 2	A & P	
NYC	Yes	Up to age 2	P	
OR	NA	NA	NA	NA
PA	No	Up to age 2	P	FD
UT	Yes	Up to age 2	A	FD, T
WA	No	Up to age 1**	P	FD
WI	No	Up to age 2	P	FD

† all systems capture live births; FD = fetal deaths; T=terminations \* voluntary to 22 \*\* to 10 FAS





# Implementation Issues

- Privacy and small numbers
- Legislative mandates
- Data quality
- Geocoding
- Non live birth cases
- Registry establishment and support
- Organizational

# Positive Impact of Tracking

- Geocoding
- Support for code change eg fetal diagnosis
- Record linkage with hospital discharge
- Support for web based reporting
- Registry provision of EPHTN data
- Secure access to data
- Enhanced data collection for tracking defects
- Supplement reporting with birth certificates
- Data linkage projects eg pesticides and hypospadias

# Data to Action

## *Key Issues for Tracking*

- Reaching local levels
- Measuring exposure
- Linking health, exposure, & hazard data
  - Measuring impact
- Utility to stakeholders



# Linking data by place

Social  
demographic  
eg census, BRFSS

Health events  
eg hospitalisations  
births

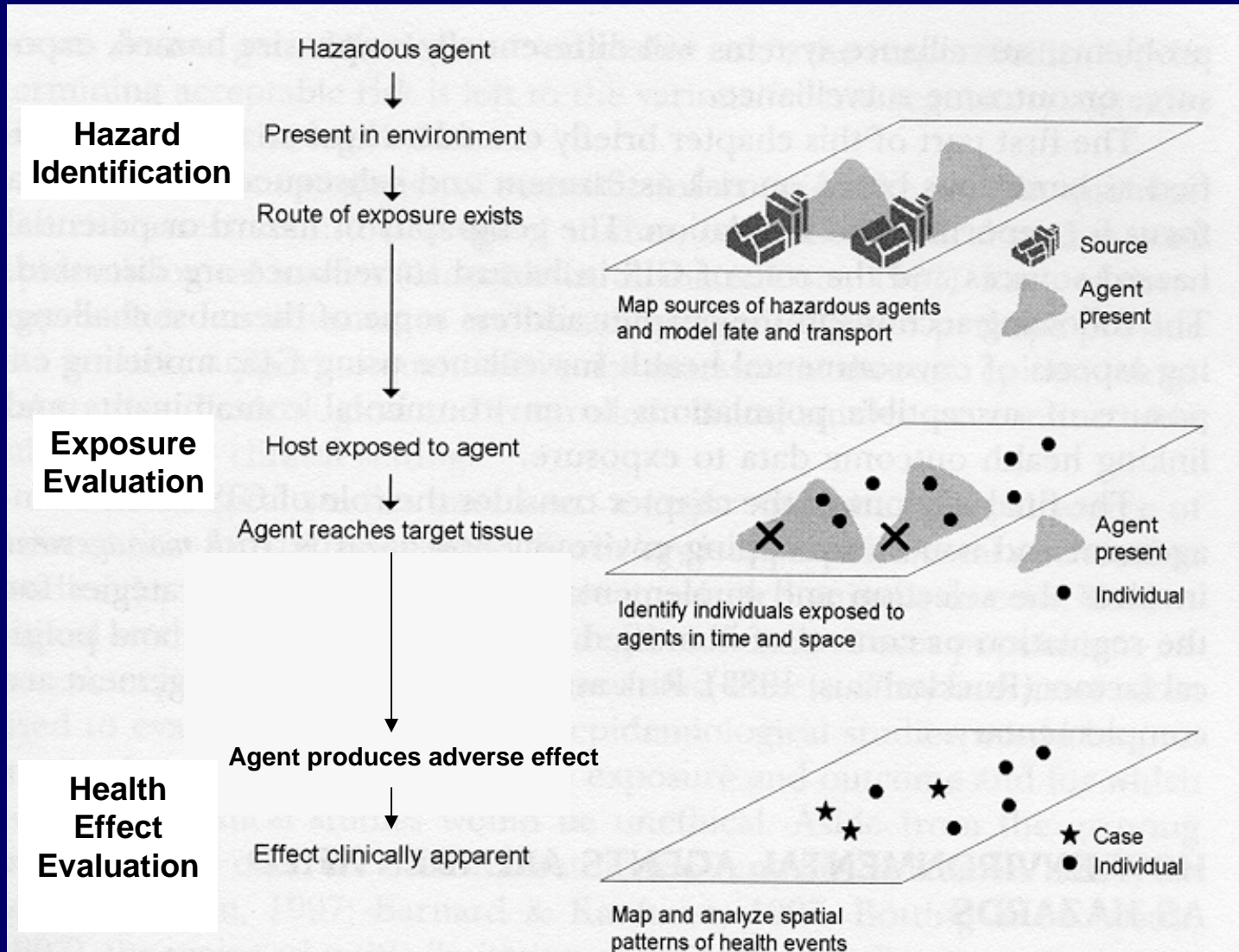
Physical environment  
eg water supply, air  
toxic substances

home  
work  
school

areas (eg county, tract, zip)  
points (eg street address)  
lines (eg roads, rivers)

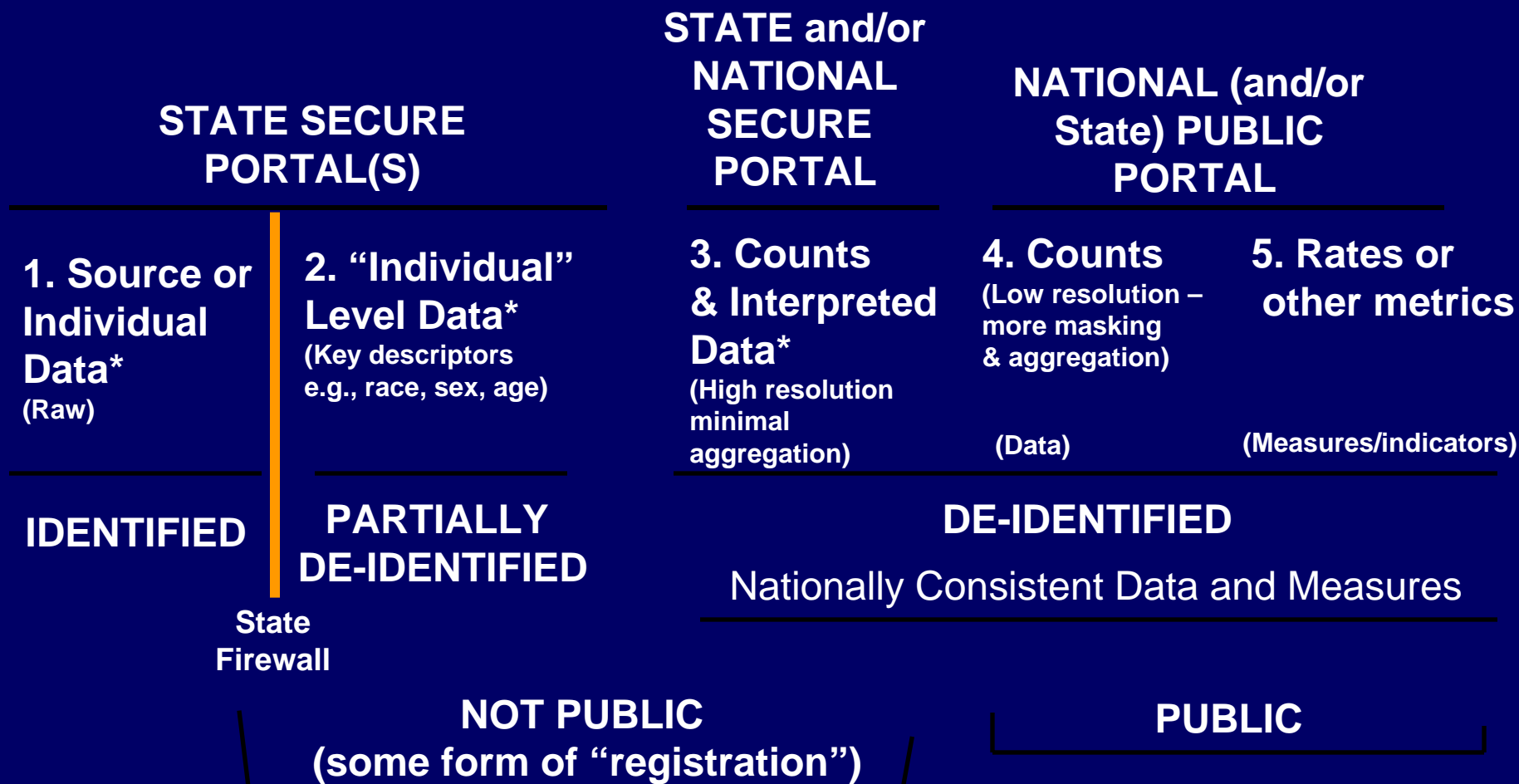
# Environmental-Spatial Model

## Environmental Public Health Tracking



Adapted from "GIS and Public Health," Cromley and McLafferty 2002

# DRAFT EPHTN HEALTH DATA MODEL



\*Conceivably linkable data

# Summary

- Tracking data are essential to successful public health
- Success depends on cooperation among many organizations
- Excellent progress to date
- Next step - staged implementation at local, state and national level
- Vision: Healthy Informed Communities





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## ENVIRONMENTAL HAZARDS & HEALTH EFFECTS

# National Environmental Public Health Tracking Program

### IN THE SPOTLIGHT



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Online registration and online abstract submission forms for the National Tracking Conference now available ...[more](#)



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National EPHT Program Newsletter with news, events, and updates on EPHT activities, partners, workgroups, and committees ...[more](#)



#### **2006 Spatial Epidemiology Conference**

CDC and SAHSU at Imperial College London sponsor this conference featuring geographical variations in environmental health ...[more](#)

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For more information: [www.cdc.gov/nceh/tracking](http://www.cdc.gov/nceh/tracking)

Contact us: [EPHT@cdc.gov](mailto:EPHT@cdc.gov)

