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# **Primer on Environmental Public Health Information Activities**

**Information Management Workgroup (IMWG)  
Environmental Health Data Action Team (EHDAT)**

**Second Edition**

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## Organization of this Document

This document is organized around the various agencies that have significant roles in environmental public health information management. The matrix on the following page represents the "index" to this Primer. This matrix is not intended to be a comprehensive overview of agency activities, but only represents information included within this Primer. It provides links to various agency activities that are described in the body of the Primer. Within the agency descriptions, there are also links from activities that lead to summary lists at the end of the document. In turn, the summary lists may be browsed, with links back to specific agency activities within the Primer. The activity categories in the matrix and summary lists are representative of the types of activities conducted in the course of environmental public health information management.

### Primer Index to Major Environmental Public Health Activities

Who	HHS					EPA			Other			
	Office of Secretary	NIH NIEHS	CDC IRMO	CDC NCEH/ATSDR	CDC NCHS	ORD	Program Offices & Regions	OEI	ECOS	ASTHO	CTSE	NACCHO
Standards	X		X	X	X		X	X				
Architecture	X		X					X				
Data Linkages				X		X						
Grant Activities			X	X		X		X				
Registries				X				X				
Research Methods		X		X	X	X	X					X
Data Exchanges			X	X				X				
Alerts			X				X					
Early Detection			X									
Models			X	X		X	X					
Indicators				X		X	X	X			X	
Tools			X		X	X	X	X		X		X
Response			X	X								
Biomonitoring				X		X	X					
Partnerships			X	X		X	X	X	X	X		

# Primer on Environmental Public Health Information Activities

## I. Primer Purpose

This Primer provides an updated overview on various organizations and their information management-related environmental public health activities. The first version of the Primer was prepared for the State-EPA Information Management Workgroup (IMWG) and led to the formation of the IMWG Environmental Health Data Action Team (EHDAT). The purpose of this version is to provide an updated perspective on environmental health information efforts, challenges, and needs. The number of agencies and organizations engaged in environmental health activities is large and growing. The focus of this Primer is primarily on the activities of the Environmental Protection Agency, the Department of Health and Human Services, and their partners, that address environmental public health tracking and environmental health protection.

## II. Drivers

The connections between public health and the environment are increasingly apparent. A few national-scale developments, as well as numerous local, state, and regional events and initiatives, have led public agencies and others to pursue information on environment-health connections. Three significant national initiatives in this area are the establishment of the CDC Environmental Public Health Tracking Program in response to the Pew Environmental Health Commission call for such an effort, the EPA Environmental Indicators Initiative and the publication of the 2003 Draft Report on the Environment, and the mobilization of Federal and State biodefense preparedness and response programs. These are discussed as examples of the current high level of interest in environmental health interactions.

### *The "Pew Report" and Establishment of the National Environmental Public Health Tracking Program*

In 2001, the Pew Environmental Health Commission issued a report entitled *America's Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network*. The report outlines the country's gap in critical environment-health knowledge that hinders national efforts to reduce or eliminate diseases that might be prevented by better managing environmental factors. The report specifies that, while overt poisoning from environmental toxins has long been recognized, the environmental links to a broad array of chronic diseases of uncertain cause is unknown. What is needed is a way to systematically, comprehensively, and on a coordinated basis, track information about the health of Americans and their environment at all levels from the local community to the nation as a whole. This information would enhance the country's ability to establish the relationship between environmental hazards and disease, to identify at risk populations, and to track progress towards achieving a healthier nation and environment. ([http://www.pewtrusts.com/pdf/hhs\\_enviro\\_health\\_gap\\_technical.pdf](http://www.pewtrusts.com/pdf/hhs_enviro_health_gap_technical.pdf)) In response to the Pew Commission's report and the increasing awareness of the linkages between public health and the environment, the U.S. Congress provided CDC with funding of \$17.5 million in FY 2002 and about \$28 million in FY 2003 to begin development of a nation-wide environmental public health tracking network and develop capacity in environmental health within state and local health departments. This program is discussed in more detail below.

### *Biodefense Preparedness and Response*

In response to the 2001 anthrax attacks and the continued threat of bioterrorism in the U.S., federal investments in **biodefense activities** have risen from \$294 million in FY2001 to \$5.2 billion in FY2004. **(response)** The Department of Health and Human Services and Department of Homeland Security are working together to build capacity and capability in state and local agencies and hospitals. Bioterrorism response plans have been developed, hospitals have upgraded capacity, states have developed mandated disease detection systems, more workers and expertise have been mobilized for public health emergency preparedness, public health laboratory capacity has increased, improved alerting systems have been developed and implemented, communications capacity has been enhanced, food safety procedures have been improved, vaccine supplies have been increased, and biodefense research and development priorities have been identified and funded. (<http://www.hhs.gov/news/press/2004pres/20040428.html>)

### *EPA Environmental Indicators Initiative and the 2003 Draft Report on the Environment*

**EPA's Environmental Indicators Initiative** aims to improve the Agency's ability to report on the status of and trends in environmental conditions and their affects on human health and the nation's ecological conditions. **(indicators)** Using available data and indicators, EPA and its partners recently published a Report on the Environment. The Report addresses many of the public's frequently-asked questions, documents national environmental and human health conditions, and highlights gaps in information needed to answer questions about national status and trends of human and ecological health. The Environmental Indicators Initiative and Report on the Environment highlighted the ongoing need for more quality information that can make clear, defensible linkages between human health and the environment. ([www.epa.gov/indicators/](http://www.epa.gov/indicators/))

## **III. Major Entities and Activities—The Department of Health and Human Services**

Many organizations are actively creating, collecting, and using information to better understand the connections between the environment and public health. HHS (<http://www.hhs.gov>) is the country's principal agency for protecting the health of all Americans and providing essential human services. HHS includes more than 300 programs that cover a wide spectrum of activities. As indicated previously, much of the federal biodefense funding is currently being managed through HHS.

There are 12 agencies within HHS. Many conduct work that is indirectly related to environmental-health, but three agencies have specific responsibilities in this area: CDC/National Center for Environmental Health (NCEH), the Agency for Toxic Substances and Disease Registry (ATSDR), and the National Institutes of Health/National Institute of Environmental Health Sciences (NIEHS). HHS also has various information management activities that affect all aspects of data development and use within the organization.

### *Overarching Information Management Activities at HHS*

**The HHS Federal Health Architecture** is a multi-departmental business and technical architecture that facilitates identification of collaborative business opportunities to leverage existing efforts and investments, develop a performance measurement and outcome strategy, set technical and data standards, and develop specifications to implement those standards. (<http://www.hhs.gov/fedhealtharch/index.html>) **(standards, architecture)**

**The National Health Information Infrastructure (NHII)** is an activity within the Office of Science and Data Policy to bring about the collaboration between stakeholders in the private and public sectors and among all levels of government to adopt standards for communication and interoperability between systems, incorporate privacy and security practices, and fund projects where there is evidence that specific projects have benefited health care. **(standards, architecture)** At HHS, the National Committee on Vital and Health Statistics (NCVHS) serves as a public advisory committee to the Secretary of Health and Human Services on national health information policy. Their report "Information for Health: A Strategy for Building the National Health Information Infrastructure" released in November 2001 outlines a vision and a process for building the NHII. (<http://aspe.hhs.gov/sp/nhii/>)

**Consolidated Health Informatics (CHI)** is an e-government initiative that will establish a portfolio of existing clinical vocabularies and messaging standards enabling federal agencies to build interoperable federal health data systems. **(standards, architecture)** More than 20 departments/agencies including HHS, Veterans Affairs, Department of Defense, the Social Security Administration, the General Services Administration, and the National Institute of Standards and Technology are active in the CHI governance process. Through the CHI governance process, all federal agencies will incorporate the adopted standards into their individual agency health data enterprise architecture used to build all new systems or modify existing ones. There is a Consolidated Health Informatics Council that leads the work. CHI conducts outreach to the private sector through the National Committee on Vital and Health Statistics. ([http://www.whitehouse.gov/omb/egov/gtob/health\\_informatics.htm](http://www.whitehouse.gov/omb/egov/gtob/health_informatics.htm))

The Federal Health Architecture, NHII, and CHI are working with industry data and technology standards (HL7, SNOMED, LOINC, web services, etc.) and other public information resources (PHIN/NEDSS, eLEXNET, SafetyNet [Patient Safety], LEADERS, EPANET).

## THE CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States. As of early 2004, CDC was organized into 13 Centers and Offices (see Box A) (<http://www.cdc.gov/aboutcdc.htm>). Currently, CDC is being reorganized around four coordinating centers and a few offices (shown in Box B) (<http://www.futures/update.htm>)

*Overarching Information Management Activities at CDC*

Within CDC, the **Public Health Information Network (PHIN)** is designed to provide an information management framework for all CDC data-related activities **(standards, architecture)**. Currently, this effort is managed through the Office of the Director by an Executive Committee, chaired by the Associate Director for Informatics. PHIN is a framework that seeks to enable the consistent exchange of response, health, and disease tracking data among public health partners through defined data and vocabulary standards and strong collaborative relationships. PHIN will be compliant with the standards set by **Health**

### Box A: The Centers for Disease Control: Centers/Institutes/Offices (organization as of early 2004)

1. National Center on Birth Defects and Developmental Disabilities
2. National Center for Chronic Disease Prevention and Health Promotion
3. National Center for Environmental Health /Agency for Toxic Substances and Disease Registry
4. Office of Genomics and Disease Prevention
5. National Center for Health Statistics
6. National Center for HIV, STD, and TB Prevention
7. National Center for Infectious Diseases
8. National Center for Injury Prevention and Control
9. National Immunization Program
10. National Institute for Occupational Safety and Health
11. Epidemiology Program Office
12. Public Health Practice Program Office
13. Office of the Director

**Level 7 (HL7)**, a not-for-profit membership-based organization comprised of providers, vendors, government groups, consultants, and others who develop standards in the healthcare area. (<http://www.hl7.org>) (**standards**) PHIN is comprised of five coordinated functions: detection and monitoring, data analysis, knowledge management, alerting, and response. PHIN has developed or is developing standards and specifications for the following nine priority functions:

1. The Automated Exchange of Data Between Public Health Partners
2. The Use of Electronic Clinical Data for Event Detection
3. Manual Data Entry for Event Detection and Management
4. Specimen and Lab Result Information Management and Exchange
5. Management of Possible Case, Contacts and Threat Data
6. Analysis and Visualization
7. Directories of Public Health and Clinical Personnel
8. Public Health Information Dissemination and Alerting
9. IT Security and Critical Infrastructure Protection (<http://www.cdc.gov/phinf/>)

There are several components that comprise PHIN (<http://www.cdc.gov/phinf/components/>). These are described as follows:

**Laboratory Response Network (LRN)** was established in 1999 by the Centers for Disease Control and Prevention. The purpose of the LRN is to run a network of laboratories that can respond quickly to acts of chemical or biological terrorism, emerging infectious diseases and public health threats and emergencies. (**response**) The LRN is a national network of about 120 labs. The network includes the following types of labs: Federal, State and local public health, Military, Food Testing, Environmental, Veterinary and International. (<http://www.bt.cdc.gov/lrn/factsheet.asp>)

**BioSense** is an early event detection system meant to improve preparedness for bioterrorism events. It involves near real time reporting of health data, aggregation of diagnostic and pre-diagnostic data, enhanced connections between clinical care and public health, and the advancement of early detection analytics. (**early detection**) BioSense Phase One became available for use in October of 2003 to provide real-time access to time series and geographic views of indicators for all involved jurisdictions. A next step for BioSense will be to connect relevant regional data from hospital systems, health plans, and clinical information systems vendors.

**EPI-X** is the Centers for Disease Control and Prevention's web-based communications solution for public health professionals. Through *Epi-X*, CDC officials, state and local health departments, poison control centers, and other public health professionals can access and share preliminary health surveillance

**Box B: Proposed CDC Organization  
(July 2004)**

**Coordinating Center for Infectious Disease** – includes the National Center for Infectious Diseases, the National Immunization Program, and the National Center for STD, TB, and HIV Prevention.

**Coordinating Center for Health Promotion** – includes the National Center for Chronic Disease Prevention and Health Promotion; the National Center for Birth Defects and Developmental Disabilities; and Genomics.

**Coordinating Center for Environmental Health, Injury Prevention, and Occupational Health** – includes the National Center for Environmental Health/Agency for Toxic Substances and Disease Registry, the National Center for Injury Prevention and Control, and the National Institute for Occupational Safety and Health.

**Coordinating Center for Public Health Information and Services** – includes the National Center for Health Statistics, a new National Center for Health Marketing, and a new center for public health informatics.

**Office of Global Health**

**Office of Terrorism Preparedness and Response**

**Office of the Director**

information --- quickly and securely. Users can also be actively notified of breaking health events as they occur. **(alerts)** Key features of *Epi-X* include unparalleled scientific and editorial support, controlled user access, digital credentials and authentication, rapid outbreak reporting, peer-to-peer consultation, and CDC-assisted coordination of investigations. (<http://www.cdc.gov/epix/>)

**The Health Alert Network (HAN)** is a nationwide, integrated information and communications system serving as a platform for distribution of health alerts, dissemination of prevention guidelines and other information, distance learning, national disease surveillance, and electronic laboratory reporting, as well as for bioterrorism and related initiatives to strengthen preparedness at the local and state levels. **(alerts)** Most state-based HAN programs have over 90% of their population covered under the umbrella of HAN. The HAN Messaging System currently directly and indirectly transmits health alerts, advisories, and updates to over one million recipients. CDC is partnering with local and state health agencies and national public health organizations to connect local health agencies to the Internet by funding initial purchase and installation of electronic computing and communications equipment; to develop and deliver training in the use of information technology to prepare public health workers to respond to bioterrorist threats; to develop electronic tools to support preparedness for and response to bioterrorism and other disease threats; to rapidly disseminate health warnings; to deploy authoritative preparedness, diagnosis, and treatment guidelines; and to develop science-based, local health department performance standards related to domestic terrorism and other essential health services. (<http://www.phppo.cdc.gov/han/>)

**The Public Health Information Network Messaging System (PHIN MS)** is a specific instance of the ebXML version 2.0 Standard Message Service Handler for secure message transport compatible with PHIN standards. **(standards)** The PHIN MS uses state of the art encryption technology and is configurable to strictly adhere to HIPAA security regulations. When a Public Key Infrastructure is present, PHIN MS can use both public key encryption and digital signature to verify the integrity of the message. It always runs over secure socket layers so that any information in the “pipeline” is always encrypted. (<http://www.cdc.gov/phin/messaging/index.htm>)

**The PHIN Vocabulary and Thesaurus** recognize that vocabulary standards must be fostered and implemented for effective search, synthesis, and sharing of information at multiple locations. **(standards)** **PHIN initiatives** will address cross-cutting needs and specific programmatic requirements at local, state, and national levels. **(partnerships)** The goal is provision of timely public health information to all who need it. (<http://www.cdc.gov/phin/components/PHIN%20Brochure%20Vocabulary%20and%20Thesaurus.ppt>) and ([http://www.cdc.gov/phin/data\\_models/index.htm](http://www.cdc.gov/phin/data_models/index.htm))

**NEDSS and NEDSS Based System (NBS)** is an initiative launched in 1999 to promote the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, state and local levels to detect outbreaks rapidly and monitor the health of the nation. **(standards)** NEDSS will improve the nation's ability to identify and track emerging infectious diseases and potential bioterrorism attacks as well as to investigate outbreaks and monitor disease trends. The NBS is an example of a **NEDSS compatible system** that can be used by a state health department for the surveillance and analysis of notifiable diseases **(grants)**. The NBS provides a **platform to build modules** to meet state and program area data needs as well as providing a secure, accurate and efficient way for collecting and processing data. **(tools)** A primary goal of NEDSS is the ongoing, automatic capture and analysis of data that are already available electronically at (<http://www.cdc.gov/nedss/index.htm>) and ([http://www.cdc.gov/phin/components/PHIN%20Brochure\\_NEDSS%20NBS.ppt](http://www.cdc.gov/phin/components/PHIN%20Brochure_NEDSS%20NBS.ppt))

**The Environmental Public Health Tracking Network (EPHTN)** will be a sustainable standards-based national network that will allow direct electronic data reporting and linkage within and across health



effect, exposure, and hazard data. **(data exchanges)** The objectives of a coordinated and integrated environmental public health tracking (surveillance) network are to (1) provide information on levels of contaminants in the environment from available monitoring data, levels of actual exposure in the population, health effect rates, and spatial and temporal trends to guide public health intervention and environmental mitigation activities and policy; (2) facilitate research on possible associations between health effects and exposures/hazards; and (3) measure the impact of interventions such as regulatory and prevention strategies. Current activities within the EPHT Program are discussed below.

*National Center for Environmental Health (NCEH) / Agency for Toxic Substances & Disease Registry (ATSDR)*

CDC's National Center for Environmental Health (NCEH) has primary responsibility within CDC for providing leadership that promotes health and quality of life by preventing or controlling diseases, birth defects, disabilities, or deaths that result from interactions between people and the environment. Within the last year, the office of the Director of NCEH merged with ATSDR, but the full merger of the agencies requires an act of Congress.

#### Environmental Public Health Tracking

Within the Environmental Hazards and Health Effects (EHHE) Division of CDC/NCEH, the Environmental Public Health Tracking Branch is working to develop the **Environmental Public Health Tracking (EPHT) Program** and Network. The goal of the EPHT Program is to develop a network that will enable direct electronic data reporting and linkage of health effect, exposure, and hazard data, and that will operate with other public health systems. **(data linkages)**

As previously described, the EPHTN is a component of PHIN. The EPHT Program will have the capacity to detect problems; integrate and analyze accumulated data; create information, communicate alerts, basic public health information, trends in exposures, etc.; generate hypotheses; identify high risk populations; and evaluate intervention options. In 2002, \$14.2 million was awarded as cooperative agreements to 20 state and local health departments and three schools of public health (Academic Centers of Excellence) to establish the **EPHT Program**. ([www.cdc.gov/nceh/tracking](http://www.cdc.gov/nceh/tracking)) **(grants)** In 2003, an additional \$4.2 million was made available. The 2002 competitive cooperative agreements program offered two options described as Part A (Planning & Capacity Building) and B (Enhancement & Demonstration Project). Part A offered state and local health departments an average of \$500,000 per year for 3 years to develop plans and components of a standards-based, coordinated, and integrated environmental public health tracking (surveillance) system. Part B offered an average of \$700,000 per year for 3 years to develop or enhance exposure or health effect surveillance systems and conduct projects to assess the utility of linking and reporting health effect data with exposure and/or hazard data. Additional states were funded in 2003 to conduct data demonstration and linkage projects. Details about the grantees are provided in Section VII.

The grantees have been working with CDC on various EPHT Workgroups to develop approaches, standards, and protocols for environmental-health tracking. Four workgroups (Data Linkages, Program Marketing, Legislation and Partner Agreements, and Standards and Network Development [SND]) were established, consisting of members from the grantee organizations. The **SND Workgroup** formed four subgroups to address specific EPHT network standards related to Network Architecture, Metadata and Data Quality, Geography and Locational Referencing, and Data Access and Data Sharing. **(standards)** These subgroups are just beginning to issue recommendations to CDC for standards for the network.

State recipients of EPHT grant funds for **linkage/demonstration** projects were asked to link environmental exposure and/or hazard data with one or more of the following health effects. **(data linkages)** The table below indicates the specific health effects and states working on them.

Health Effect	State Grant Activity
Major structural birth defects	CA, MA, NJ, OK, WA, FL, NY
Developmental disabilities such as Autism, mental retardation, and other developmental disabilities	FL, MA, CA, NJ
Cancers, especially those for which there are shorter latency periods, such as hematopoietic, central nervous system, and childhood cancers	FL, MA, NJ, OK, WI, IL, LA, NM
Asthma and other chronic obstructive respiratory diseases	CA, FL, MA, NY, OK, NM, WI
Neurological diseases, including Alzheimer's disease, amyotrophic lateral sclerosis (ALS), multiple sclerosis (MS), and Parkinson's	WI
Autoimmune diseases such as Hashimoto's thyroiditis, rheumatoid arthritis, scleroderma, and systemic lupus erythematosus	MA
Pesticide Poisoning	NYC, WA, WI
Heavy Metal Poisoning (e.g. lead, mercury)	CA, MO, MA, NJ, OK, NYC
Carbon monoxide poisoning	WI
Adverse reproductive outcomes such as low birth weight, intrauterine growth retardation and preterm births	CA, NY

The NCEH/EHHE Division **Air Pollution and Respiratory Health Program** leads CDC's fight against environmental-related respiratory illnesses, including asthma, and studies indoor and outdoor air pollution. **(data linkages)** One of the primary activities of the program is tracking—collecting and analyzing data on an ongoing basis to understand when, where, and in whom asthma occurs. (<http://www.cdc.gov/nceh/airpollution/about.htm>)

The **Childhood Lead Poisoning Prevention Program** within the NCEH/Emergency and Environmental Health Services Division maintains the Childhood Blood Lead Surveillance System through which 46 states currently report lead poisoning data to CDC **(data exchange)**. This effort is being updated to a program area module for NEDSS. CDC uses the data to evaluate scientific research on childhood lead poisoning. (<http://www.cdc.gov/nceh/lead/about/program.htm>)

The **Health Studies Branch (HSB)** within NCEH/EHHE Division is responsible for investigating human health effects associated with exposure to environmental hazards and to natural and technological disasters. HSB's primary mission is to develop and evaluate strategies for preventing human exposure to environmental hazards and disasters and for minimizing the effects of such exposures when they do occur. **(research methods)** To accomplish this mission, HSB investigators conduct epidemiologic rapid response and research activities in cooperation with federal, state, local, and international health agencies. (<http://www.cdc.gov/nceh/hsb/>)

The NCEH/Division of Laboratory Sciences **Biomonitoring Program** develops instruments and tests for biomonitoring and builds biomonitoring capacity among state public health laboratories. In January 2003 they published the second *National Report on Human Exposure to Environmental Chemicals*. **(biomonitoring)**. The *Report* is the second in a series of publications that provide an ongoing assessment of the exposure of the U.S. population to environmental chemicals using biomonitoring. Biomonitoring is the assessment of human exposure to chemicals by measuring the chemicals or their metabolites in human specimens such as blood or urine. CDC's Biomonitoring Program uses tests and technologies to help 1) protect public health during emergencies involving chemicals, 2) investigate possible exposure of people to dangerous chemicals, and 3) study the effects of chemicals on health as well as standardize and improve their programs for measuring specific substances in people that affect their health. (<http://www.cdc.gov/nceh/dls/factsheets/biomonitor/default.htm>)

## Environmental Public Health Indicators

NCEH/EHHE Division in collaboration with the Council of State and Territorial Epidemiologists (CSTE) has developed a set of **NCEH/CSTE Environmental Public Health Indicators** (EPHIs) to assess health status or risk as it relates to the environment. (**indicators**) EPHIs may be used to assess baseline status and trends, track program goals and objectives, and build core surveillance capacity in state and local agencies. . The objectives of the project are to incorporate non-infectious diseases into a national public health surveillance system, identify program and policy needs, and bridge the gap between environmental protection and public health data and programs. (<http://www.cdc.gov/nceh/indicators/default.htm> and <http://www.ctse.org>)

## Registries

ATSDR is directed by congressional mandate to perform specific functions concerning the effect on public health of hazardous substances in the environment. ATSDR functions include public health assessments of waste sites such as Superfund National Priority List sites, health consultations concerning specific hazardous substances, health surveillance and registries, responses to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances. (<http://www.atsdr.cdc.gov/about.html>).

ATSDR's **Hazardous Substances Emergency Events Surveillance (HSEES)** system was established to collect and analyze information about releases of hazardous substances that need to be cleaned up or neutralized according to federal, state, or local law, as well as threatened releases that result in a public health action such as an evacuation. (**response**) Fifteen state health departments currently have cooperative agreements with ATSDR to participate in HSEES: Alabama, Colorado, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Oregon, Texas, Utah, Washington, and Wisconsin. The goal of HSEES is to reduce the morbidity and mortality that result from hazardous substances events, which are experienced by first responders, employees, and the general public. (<http://www.atsdr.cdc.gov/HS/HSEES/>)

ATSDR's **National Exposure Registry (NER)** is a critical, long-term effort that meets the need for collecting information concerning the potential impact of hazardous substances on human health. (**registries**) It is a listing of persons exposed to hazardous substances. It contains subregistries for specific substances. There are currently four active subregistries-- trichloroethylene (TCE), trichloroethane (TCA), benzene, and dioxin. An important purpose of the NER is to help scientists understand how long-term exposure to hazardous substances may affect human health. This is done by identifying and following the health of individuals who have come into contact with specific substances at selected locations. Another purpose of the registry is to have a mechanism through which participants can be notified of the results of research related to their exposure. (<http://www.atsdr.cdc.gov/NER/index.html>)

ATSDR is continuing several key health studies (see following list) to identify information needs and initiate research, and improve program activities to focus more specifically on children's health. ATSDR is improving the review of health studies and extramural awards by including more pediatricians in the peer review process and by promoting children's health issues when announcing requests for proposals. Additional health outcomes specific to children are being identified to make health studies more sensitive to illnesses experienced by children, and ATSDR seeks to identify health outcome databases that record these outcomes. (<http://www.atsdr.cdc.gov/child/ochchildhlth.html>) Ongoing studies include:

- › Birth Defects and Reproductive Disorders
- › Hanford Infant Mortality and Fetal Death Analysis, Washington

- › Case Control Study of Neural Tube Defects, New Jersey
- › Cardiovascular Malformations and Maternal Exposure, New York
- › Birth Defects in Children of Color, California
- › Drinking Water Contamination and Birth Outcomes, NJ
- › Volatile Organic Compounds in Drinking Water and Adverse Pregnancy Outcomes, Camp Lejeune, North Carolina
- › Public Drinking Water Contamination and Birth Outcomes, Iowa
- › Lung and Respiratory Diseases
- › Residential Exposure to Urban Air Toxicants and Childhood Asthma
- › Immune Dysfunction
- › Determining Immunotoxicity of Lead Exposure in Children in the Tri-State Mining District, Illinois, Kansas, Missouri
- › Reference Ranges for Immune Function Test Battery Results in Children
- › Neurotoxic Disorders
- › Impact of TCE Exposure on Oral and Motor Function and Speech and Hearing in Children
- › Exposure and Biomedical Testing
- › Coeur D'Alene River Basin Environmental Health Exposure Assessment, Idaho
- › Lead Screen Study, Silver Valley (Bunker Hill), Idaho
- › Biomedical Test Batteries Emphasizing Children

#### *National Center for Health Statistics*

The CDC **National Center for Health Statistics (NCHS)** is the Nation's principal health statistics agency and is active in both the gathering of and development of methods and standards for health-related information and data. (**standards**) Some NCHS data systems and surveys are ongoing annual systems, while others are conducted periodically. NCHS has two major types of **data systems**: systems based on populations, containing data collected through personal interviews or examinations; and systems based on records, containing data collected from vital and medical records. (**research methods, tools**) Major data systems include:

- › National Health Interview Survey (NHIS)
- › National Health and Nutrition Examination Survey (NHANES)
- › National Health Care Survey (NHCS)
- › National Vital Statistics System (NVSS)
- › National Immunization Survey (NIS)
- › State and Local Area Integrated Telephone Survey (SLAITS)

The NCHS established the **Public Health Data Standards Consortium** in January 1999, to serve as a mechanism for ongoing representation of public health and health services research interests in HIPAA implementation and other data standards-setting processes. The Consortium became a no-for-profit organization in July 2003 (see later discussion).

#### **NIH NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES**

The National Institute of Environmental Health Sciences (NIEHS) is one of 27 Institutes and Centers of the National Institutes of Health. The NIEHS mission is to reduce the burden of human illness and dysfunction from environmental causes by understanding each of these elements and how they interrelate. NIEHS works on multidisciplinary biomedical research programs, prevention and intervention efforts,

and communication strategies that encompass training, education, technology transfer, and community outreach. (<http://www.niehs.nih.gov>)

One of NIEHS's ongoing projects is the publication of a peer-reviewed journal, *Environmental Health Perspectives*, dedicated to the discussion of the effect of the environment on human health. *Environmental Health Perspectives* includes on-line articles on three regular issue areas: children's health, environmental medicine, and toxicogenomics (the study of biological responses to environmental toxicants and stressors at the genomic level). (<http://ehp.niehs.nih.gov/>)

**The Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM)** was established in 1997 by the Director of NIEHS to implement NIEHS directives in Public Law (P.L.) 103-43. This law directed NIEHS to develop and validate new test methods, and to establish criteria and processes for the validation and regulatory acceptance of toxicological testing methods. (**research methods**) P. L. 106-545, the ICCVAM Authorization Act of 2000, established ICCVAM as a permanent committee. The Committee is composed of representatives from 15 Federal regulatory and research agencies; these agencies generate, use, or provide information from toxicity test methods for risk assessment purposes. The Committee coordinates cross-agency issues relating to development, validation, acceptance, and national/international harmonization of toxicological test methods. (<http://iccvam.niehs.nih.gov/about/overview.htm>)

## IV. Major Entities and Activities—The U.S. Environmental Protection Agency

EPA is comprised of several offices that address various aspects of environmental protection and regulation, including air and radiation, water, and solid waste, pesticides, toxics, etc. Additionally, the Office of Research and Development conducts scientific research, while the Office of Environmental Information supports EPA's information management activities. The EPA mission of protecting human health and the environment means that the agency supports a large number of environmental health activities. A sampling of EPA environmental health activities are discussed following.

### OFFICE OF RESEARCH AND DEVELOPMENT (ORD)

ORD fosters the use of science and technology in fulfilling EPA's mission by conducting research on ways to prevent pollution, protect human health, and reduce risk. ORD is organized into three national laboratories and two national centers. (<http://www.epa.gov/ord/>). ORD provided leadership in development of the **Technical Document** as part of *EPA's 2003 Draft Report on the Environment*. (**indicators**) This report includes a variety of indicators that examine the relationships between human health and the environment. ([www.epa.gov/indicators/](http://www.epa.gov/indicators/)). ORD is the lead on developing the "2006" version of the Technical Document.

ORD's **National Health and Environmental Effects Research Laboratory (NHEERL)** is organized into nine research divisions, each of which specializes in a different field of health or ecology research. (**research methods**) The five health divisions are centrally located in Research Triangle Park, NC, while the four ecology divisions are strategically situated in ecologically significant geographic regions across the U.S. NHEERL is the Agency's focal point for **scientific research on the effects of contaminants and environmental stressors** on human health and ecosystem integrity. (**biomonitoring**) Its research mission and goals help to identify and understand the processes that affect human health and the environment, and to evaluate the risks that pollution poses to humans and ecosystems. The five research

divisions under the Associate Director for Health that conduct health effects research are the Human Studies Division; the Neurotoxicology Division, the Reproductive Toxicology Division, the Experimental Toxicology Division, and the Environmental Carcinogenesis Division. The types of research conducted, include, for example, the following activities in the ECD where the current emphasis is air toxics (especially particulate matter), water disinfection byproducts, arsenic, chemicals on the EPA's chemical contaminant list, and human health risk assessment strategies. The overall aim is to provide data for use in human cancer risk assessment models. Examples of the approaches are to identify hazard, to assess dose and tumor response through the use of informative biomarkers, and to develop dose response curves for tumor outcome in humans using rodent tumor data and/or cellular indicators of tumorigenicity, such as specific genetic alterations, regenerative cell proliferation following cytotoxicity, or preneoplastic lesions. (<http://www.epa.gov/nheerl/>)

The **National Center for Environmental Assessment (NCEA)** focuses on public health risk assessments and makes publicly available several databases and data sets. (**research methods**) NCEA studies the risk assessment paradigm (e.g., exposure/risk characterization, hazard identification and dose-response). NCEA makes available the Integrated Risk Information System (IRIS) Database of human health effects that may result from exposure to various substances found in the environment (<http://www.epa.gov/iris/>). The Exposure Analysis and Risk Characterization Group (EARCG) within NCEA conducts both exposure analysis to improve human and ecological exposure assessment science through methods development and direct program support implementing new methods into site- and chemical-specific assessments and risk characterizations for human-health and ecological assessments in NCEA and throughout EPA. (<http://cfpub.epa.gov/ncea/>)

The **National Center for Environmental Research (NCER)** focuses on exposure, effects, risk assessment, and risk management, working in conjunction with other research centers and laboratories within ORD. NCER provides scientific grants for leading-edge, extramural research in these areas. (<http://es.epa.gov/ncer/about/>) (**grants**)

The **National Exposure Research Laboratory (NERL)** conducts research that lead to improved methods, measurements, and models to assess and predict exposures on humans and ecosystems. (**models, research methods**) NERL's divisions develop advanced air quality models that can simulate the transport and fate of pollutants in the atmosphere, characterize aggregate human exposures from all sources, and conduct research to measure, characterize and predict the exposure of humans to chemical and microbial hazards. ([www.epa.gov/nerl/](http://www.epa.gov/nerl/)) NERL's Division of Human Exposure and Atmospheric Sciences supports the National Children's Study and maintains the **Human Exposure Database System (HEDS)** (**data linkages**) HEDS is a web-enabled data repository for human exposure studies, which are designed to either describe the level and extent of human exposure to various pollutant sources or to map the relationships between a person's environment and the impact of pollution sources from that environment. (<http://www.epa.gov/heds/aboutheds.htm>).

The **National Risk Management Research Laboratory (NRMRL)** and the National Homeland Security Center (NHSRC) conduct a variety of research programs that are related to environmental health effects, such as drinking water protection, air pollution control, and safe buildings. (<http://www.epa.gov/ord/nrmrl/>) (**research methods**)

The **Office of Science Policy (OSP)** provides funding for research activities in EPA Regions to address a variety of environmental and human health concerns. (**grants**) For example, Region 10 is using OSP funding to conduct research, in conjunction with NHEERL, to develop **Tribal Fish Consumption Survey Software**. (<http://www.epa.gov/osp/>) (**tools**)

## OFFICE OF ENVIRONMENTAL INFORMATION (OEI)

EPA's OEI works to ensure that EPA collects high quality environmental data, makes effective use of those data, and provides quality information to the public. OEI provides guidance to assist EPA's environmental information collection, management, analysis, and access. OEI oversees the **Information Enterprise Architecture** activities of EPA. (**architecture**) OEI is also engaged in several environmental health initiatives. OEI provides leadership in EPA's interactions with the CDC on environmental public health tracking activities and provides support to the HHS-EPA Memorandum of Understanding. OEI coordinates with representatives from ORD and EPA Program Offices in these activities.

OEI was responsible for publication of the **Public Report** as a component of the *2003 Draft Report on the Environment*. (**indicators**) OEI is playing a role in defining the future electronic version (e-ROE) of the document, identifying and addressing data gaps, including developing a data collection strategy, and improving the overall quality of the questions and indicators in the previously published documents. ([www.epa.gov/indicators](http://www.epa.gov/indicators)).

The Office of Information Analysis and Access within OEI is engaged in a variety of health initiatives, including developing **health screening tools**. (**tools**) Examples of tools include a dynamic choropleth map tool for examining national patterns of various diseases, investigating correlations between toxic releases and children's leukemia, establishing a Web portal to link EPA mercury Websites, and creating an annotated inventory of electronically accessible health data bases and registries. (<http://www.epa.gov/oei/>)

OEI also supports the **Information Management Workgroup (IMWG)**, consisting of State and EPA representatives, with common interests in effective and efficient information management and partnerships. (**partnerships**) The IMWG has overseen the development, over the last four years of the **National Environmental Information Exchange Network** (Exchange Network). (**data exchanges**) The Exchange Network is an Internet and standards-based secure data exchange between partners (primarily States and EPA). The Exchange Network consists of data exchanges between "nodes" or portals maintained individually by data partners. Once established, these data exchanges will replace and complement the traditional approach to information exchange that currently relies upon States feeding data directly to multiple EPA national data systems. The Exchange Network maintains an XML registry providing templates and XML schemas approved for use on the Network. EPA and State representatives and contractors have developed the vision, conceptual model, operating principles, and **standards for the Exchange Network**. These partners continue to work together to define specific implementation strategies to evolve the effort. (**standards**).

OEI has provided **node grants** to States and Tribes over the last three years to develop the Exchange Network (see Section VII). (**grants**). Approximately, \$25 million have been allocated annually. In addition, **Challenge Grants** have been made available to address specific data flows and coordination opportunities among partners. (**grants**) The Challenge Grants relevant to environmental-health are described in the table in Section VII.

OEI also provides access to **EPA's System of Registries**. (**registries**) The System of Registries includes the **Environmental Data Registry** (data standards, XML tags, and application metadata), the Substance Registry System (chemicals, biological organisms), Facility Registry System (facilities regulated for environmental discharges), and Terminology Reference System (environmental terms and definitions). (**standards**).

In 2003, the IMWG, established the **Environmental Health Data Action Team (EHDAT)** which provides a forum for senior health and environmental officials working on information activities to

identify and discuss common interests and issues. (**partnerships**) The EHDAT has produced this Primer and is examining tracking several projects to begin to examine the key challenges in integrating environmental and health data.

OEI also supports the **Environmental Data Standards Council (EDSC)** comprised of state and EPA representatives. The EDSC is a joint venture of States, Tribes, and EPA. (**partnerships**) Formed in Nov 1999, the EDSC has approved 13 data standards and has developed XML tags for some of them. Six more data standards are currently under development. The EDSC both creates standards and approves standards created by other organizations. **EDSC standards** potentially relevant to environmental health include: Chemical Identification, Contact Information, Date, Facility Identification, Lat/Long, Reporting Water Quality Results for Chemical and Microbiological Analytes, SIC/NAICS, Tribal Identifier, Standard Data Elements for Environmental Sampling, Analysis, and Results, Standard Data Elements for Measure, Standard Data Elements for Method, Standard Data Elements for Representation of Date and Time, Standard Data Elements for Sample Treatment. (**standards**) EDSC standards are available at the EDSC website and in the **EPA Environmental Data Registry** (<http://www.epa.gov/edr/>) (**registries**)

## OFFICE OF ENVIRONMENTAL JUSTICE (OEJ)

EPA's OEJ works to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Environmental justice is achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. OEJ oversees the National Environmental Justice Advisory Council (NEJAC), which is a federal advisory committee established to provide independent advice, consultation, and recommendations to the Administrator of the U.S. Environmental Protection Agency (EPA) on matters related to environmental justice. NEJAC has been working on a report entitled "Ensuring Risk Reduction in Communities with Multiple Stressors: Environmental Justice and Cumulative Risk/Impacts" This report was to be a topic of discussion at the NEJAC meeting in late April and has not yet been finalized. It acknowledges that the EPA's *Framework for Cumulative Risk Assessment* is an advancement to help communities and tribes address their various concerns. The Framework is important because it opens the scope of risk assessment to include environmental, health, social, and cultural factors. (<http://www.epa.gov/compliance/environmentaljustice/index.html>)

## OFFICE OF THE CHIEF FINANCIAL OFFICER (OCFO)

OCFO is responsible for overseeing the development of EPA's Strategic Plan. The *2003 Strategic Plan* was submitted to Congress and OMB on September 30, 2003, as required under the Government Performance and Results Act. EPA's *2003 Strategic Plan* serves as the Agency's road map for the next five years. EPA's Strategic Plan is built around five goals, centered on the themes of air and global climate change, water, land, communities and ecosystems, and compliance and environmental stewardship. These themes reflect EPA's mission, "to protect human health and the natural environment." The Plan discusses strategies the Agency is applying across all five goals, in areas such as science, human capital, innovation, information, homeland security, partnerships, and economic and policy analysis. OCFO is also contributing to the leadership of **EPA's Environmental Indicators Initiative** and development of the next Report on the Environment. (**indicators**). A goal in the coordination among



ORD, OEI, and OCFO in development of indicators is more effective measurement of EPA's progress in meeting its environmental and human health goals.

## **OFFICE OF THE ADMINISTRATOR—OFFICE OF CHILDREN'S HEALTH PROTECTION (OCHP)**

OCHP, part of the Office of the Administrator, supports and facilitates EPA's efforts to protect children from environmental threats. OCHP focuses on three work areas: (1) **regulations and standards**, (2) science and risk assessment, and (3) public awareness, community-based programs, and education. **(standards)**

In addition to work within EPA, OCHP plays a vital role working with other federal departments and agencies, and others on efforts to protect children from environmental health threats. In conjunction with the Office of Policy, Economics, and Innovation (see below), OCHP produced a series of papers on Children's Health and the Environment. Since February 2003, three reports have been released: *Overview of the Special Vulnerability and Health Problems of Children*, *Critical Periods in Development*, and *Children's Environmental Exposures*. (<http://yosemite.epa.gov/ochp/ochpweb.nsf/homepage>)

OCHP supports the National Children's Study, in cooperation with the National Institute of Child Health and Development, the National Institute of Environmental Health Sciences, and the Centers for Disease Control and Prevention. **The National Children's Study** will examine the effects of environmental influences on the health and development of more than 100,000 children across the United States, following them from before birth until age 21. (<http://nationalchildrensstudy.gov/>) **(research methods, biomonitoring)**

OCHP and the Office of Policy, Economics, and Innovation (OPEI) have jointly developed the nation's first assessment of environmental factors most likely to affect the health and well-being of children. They have developed a report entitled *America's Children and the Environment*, presenting key information about children's environmental exposures, biomonitoring, and diseases that may have environmental causes. (<http://www.epa.gov/envirohealth/children/>) **(indicators, biomonitoring)**

## **OFFICE OF POLICY, ECONOMICS, AND INNOVATION (OPEI)**

Located within the Office of the Administrator, OPEI develops new approaches and provides analysis to enable EPA to better address emerging environmental challenges. The office addresses cross-cutting environmental management strategies, identifies emerging issues, and serves as a catalyst for testing and institutionalizing integrative approaches to environmental protection. Within OPEI, the EPA *National Center for Environmental Economics (NCEE)* provides economic and health analysis of important environmental issues for the regulatory and policy process. NCEE recently co-authored the papers on Children's Health and the Environment listed above. (<http://www.epa.gov/opei/>)

## **OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES (OPPTS)**

OPPTS evaluates pesticides and chemicals to safeguard human health and threatened species and ecosystems. Within OPPTS, the Office of Pesticide Programs (OPP) regulates the use of all pesticides in the United States and establishes maximum levels for pesticide residues in food, thereby safeguarding the nation's food supply. The Office of Pollution Prevention and Toxics (OPPT) promotes the use of safer chemicals, processes, and technologies; promotes life-cycle management of environmental problems.

The Office of Science Coordination and Policy (OSCP) provides coordination, leadership, peer review, and synthesis of science and science policy within OPPTS. (<http://www.epa.gov/oppts/>)

The **Voluntary Children's Chemical Evaluation Program (VCCEP)** provides data on potential health risks to children associated with certain chemical exposures. (**research methods, biomonitoring**) Twenty-three chemicals are included in the VCCEP, selected based on monitoring data indicating that exposure to humans had occurred and if the chemicals are present in the environment. The biomonitoring data sets included samples from human blood, breast milk, and exhaled breath. Presence in the environment was established by monitoring data indicating presence in indoor air or drinking water. (<http://www.epa.gov/chemrtk/vccep/index.htm>)

## OFFICE OF AIR AND RADIATION (OAR)

OAR addresses indoor and outdoor air quality through technological solutions, pollution prevention and public education. Sources include large industrial complexes, electricity generation, small business operations, vehicles, household products, and non-anthropogenic sources. These sources contribute to ambient air quality and air toxics problems, radon, acid rain and other deposited pollutants, and stratospheric ozone depletion. OAR studies various aspects of air quality, including particulate matter (PM) and ozone to better establish **air quality and air toxics standards** that protect human health and the environment. (<http://www.epa.gov/air/urbanair/6poll.html>) (**standards**) These studies include risk assessments to periodically review and update National Ambient Air Quality Standards, and risk management research to support the implementation of air quality standards by state and local governments. OAR also studies human exposures to indoor air pollutants, which may be 2-5 times, and occasionally more than 100 times, higher than outdoor levels. OAR also conducts **specific health/risk assessments** on other pollutants such as carbon monoxide, radon, second-hand smoke, and ultraviolet radiation. (**research methods**)

OAR has a wide variety of **control, prevention, and educational programs** to address the Nation's air quality problems (<http://www.epa.gov/epahome/airpgram.htm>). (**tools**) OAR has a program for protecting the public from radiation (<http://www.epa.gov/radiation/>) OAR and the National Weather Service have developed the **Ultraviolet (UV) Index**, which provides a daily forecast of expected risk of overexposure to the sun ([http://www.cpc.ncep.noaa.gov/products/stratosphere/uv\\_index/index.html](http://www.cpc.ncep.noaa.gov/products/stratosphere/uv_index/index.html)) (**models, alerts**). OAR has a variety of measures and advances for transportation sources including retrofit of diesel engines (<http://www.epa.gov/otaq/retrofit/>)

OAR maintains a variety of databases, including the Air Quality System for the Nation's air quality data and the National Emissions Inventory. OAR developed the **Air Quality Index (AQI)** and manages **AIRNow**, which forecasts and publishes next-day air quality conditions to the public. ([www.epa.gov/airnow/](http://www.epa.gov/airnow/)) (**models, alerts**) OAR also develops the Nation's tracking of long-term trends in air quality ([www.epa.gov/airtrends](http://www.epa.gov/airtrends)).

## OFFICE OF WATER (OW)

OW has responsibilities to protect water quality for human uses such as drinking, fishing, and recreation. OW establishes **water quality standards** that take into account human health effects. (**standards**) The water quality criteria set by OW are numeric values that protect human health from the harmful effects of pollutants in ambient water. Under section 304(a) of the CWA, water quality criteria are based solely on data and scientific judgments about the relationship between pollutant concentrations and environmental and human health effects.

OW issues periodic “Drinking Water and Health Advisory Summary Tables” (<http://www.epa.gov/waterscience/drinking/>). They contain drinking water standards in the form of non-enforceable concentrations of drinking water contaminants, Maximum Contaminant Level Goals (MCLGs), or enforceable Maximum Contaminant Levels (MCLs). Maximum Contaminant Levels are the maximum permissible level of a contaminant in water delivered to users of a public water system. EPA OW **Health Advisories (HA's)** provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. **(alerts)** Health Advisories are guidance values based on non-cancer health effects for different durations of exposure (e.g., one-day, ten-day, and lifetime).

The Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA) address microbial contamination of the nation's waters. The CWA enables protection of surface water for drinking water, recreation, and aquatic food source uses. The SDWA enables regulation of contamination of finished drinking water and protection of source waters. Within EPA, programs were developed under the two Acts using differing indicators of contamination and differing approaches. EPA OW is currently developing a **coordinated strategy to address all important sources of microbial contamination**, anticipate emerging problems, and use program and research activities efficiently to protect public health. (<http://www.epa.gov/waterscience/humanhealth/microbial/microbial.html>) **(indicators, research methods)**

OW conducts **health risk assessments and research** on water pollutants such as arsenic, lead, copper, MTBE (methyl-t-butyl ether), radon, and microbial pathogens. **(research methods)**

OW has also developed a **beach advisory program** to protect recreational swimmers and fish contamination warnings. (<http://www.epa.gov/OW/index.html>) **(alerts)**

## **OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE (OSWER)**

OSWER provides policy, guidance and direction for the Agency's solid waste and emergency response programs. They coordinate the Agency's Emergency Operations Center. They develop guidelines for the land disposal of hazardous waste and underground storage tanks and provide technical assistance to all levels of government to establish safe practices in waste management. OSWER administers the Brownfields program to provide assistance in redeveloping and reusing potentially contaminated sites and manage the Superfund program to respond to abandoned and active hazardous waste sites and accidental oil and chemical releases. OSWER conducts **human health risk assessments** associated with the wastes and sites they are responsible for overseeing, and provide risk assessment tools as technical assistance for the public and other professionals. (<http://www.epa.gov/swerrims/>) **(tools)**

## **OTHER EPA INITIATIVES**

On October 29, 2002, EPA's Administrator announced the **EPA Aging Initiative**. **(research methods)** This effort led by ten Regional Office coordinators will develop a three-pronged National Agenda on the Environment and the Aging that will:

- › Prioritize and study environmental health threats to older persons;
- › Examine the affect that a rapidly growing aging population might have on our environment;
- › Encourage older persons to volunteer in their own communities to reduce hazards and protect the environment <http://www.epa.gov/aging/index.htm>

## V. Major Entities and Activities—National Not-for-Profit Organizations

### THE ENVIRONMENTAL COUNCIL OF THE STATES (ECOS)

ECOS works on improving the environment of the United States by (1) championing the role of States in environmental management; (2) providing for the exchange of ideas, views, and experiences among States; (3) Fostering cooperation and coordination in environmental management; and (4) Articulating state positions to Congress, Federal agencies and the public on environmental issues. (<http://www.ecos.org>) (**partnerships**) ECOS has addressed health issues over the last several years, focusing on children's health and asthma. ECOS is working with the Association of State and Territorial Health Officials (ASTHO) on a project related to the prevention and reduction of childhood asthma triggered or aggravated by indoor and outdoor environmental conditions. This project builds on work currently underway at ECOS and ASTHO, utilizing the childhood asthma information being collected through the Children's Environmental Health Profiles.

([http://www.astho.org/?template=children\\_s\\_environmental\\_health.html](http://www.astho.org/?template=children_s_environmental_health.html))

More recently ECOS has discussed with ASHTHO opportunities for collaboration and coordination with the CDC and their Environmental Public Health Tracking network. This effort would involve focusing on three primary activities: communications, information sharing, and partnerships with the Centers of Excellence. Communications activities involve state and region-wide discussions and teaching/training programs among health and environmental agencies; interdepartmental and intergovernmental meetings at federal, state, and local levels; and tools and communications to inform the public. Information sharing addresses means to exchange tracking information among all states (not just those funded by CDC), Centers of Excellence, and federal partners (e.g., CDC and EPA).

Additionally, ECOS members, at their April 2003 meeting, agreed to create an Environmental Health Forum to monitor the development of environmental health programs within EPA, CDC, and elsewhere. Under ECOS bylaws "Forums" can be composed of both ECOS and non-ECOS members and can be co-chaired by a cross-section of representatives. The intent of the ECOS Health Forum is to provide an opportunity to collectively examine critical issues and to strengthen the integrity of the various health-environment programs.

### ASTHO: ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS

ASTHO is the national nonprofit organization representing the state and territorial public health agencies of the U.S., U.S. Territories, and the District of Columbia (<http://www.astho.org>). ASTHO's mission is to formulate and influence sound national public health policy and to assist state health agencies in the development and implementation of programs and policies to promote health and prevent disease. (**partnerships**) ASTHO's programs that relate to environmental public health include the following:

- › The Environmental Health Program aims to inform state health agencies about environmental health issues and the role that environmental factors play in causing and preventing disease.
- › The State Asthma Initiative is a project aimed at implementing an action agenda to reduce environmental triggers of children's asthma. ASTHO is partnering with ECOS on this project.
- › The Environmental Health Communications Program includes Health and Environment Electronic Seminars – monthly electronic seminars for staff in state and local health and

environmental agencies. The Agency for Toxic Substances and Disease Registry supports this work.

- › The ASTHO **Public Health Informatics Project** assesses policy and programmatic issues related to health data, health data systems, surveillance systems, performance standards, and the capacity of the state and local public health information infrastructure to appropriately measure population health status and workforce capacity. ASTHO is currently examining requirements for a public health knowledge management portal in cooperation with CDC. **(tools)**
- › ASTHO is assisting with the establishment of the CDC's Environmental Public Health Tracking Network. ASTHO is serving as a conduit of information between CDC, state grantees, Centers of Excellence, and the unfunded states. In addition they are working to enhance partnerships between health and environmental agencies by conducting a number of activities in collaboration with ECOS and the National Environmental Health Association (NEHA). Some of the EPHT related activities being conducted by ASTHO include but are not limited to production of a state barriers and needs report; documentation of the types of data states across the U.S. have available to them for health surveillance and environmental monitoring activities; production of a "primer" with ECOS to familiarize environmental agency staff with public health and public health professionals with the environment; and querying and educating environmental health audiences about EPHT in collaboration with NEHA.

## THE COUNCIL OF STATE AND TERRITORIAL EPIDEMIOLOGISTS (CSTE)

CSTE is committed to improving the public's health by supporting the efforts of epidemiologists working at the state and local level to influence public health programs and policy based on science and data. CSTE promotes the effective use of epidemiologic data to guide public health practice and improve health. CSTE accomplishes this by supporting the use of effective public health surveillance and good epidemiologic practice through training, capacity development, and peer consultation, developing standards for practice, and advocating for resources and scientifically based policy. CSTE is currently in its 11th year of a cooperative agreement with the CDC and has approximately 15 separate collaborative activities with CDC, including children's health, surveillance coordination, bioterrorism, chronic diseases, and asthma. (<http://www.cste.org>)

During 2000, CSTE, CDC, ATSDR and EPA collaborated on the development of a set of environmental **public health indicators, or EPHI. (indicators)** The goal of the EPHI project is to develop a set of indicators that can be used by local, state and national agencies to track hazards, exposures, and adverse health events related to the environment. In addition to state and federal agencies, several organizations have participated in EPHI development: the Association of State and Territorial Health Officials (ASTHO), the National Association of City and County Health Officials (NACCHO), and the Public Health Foundation (PHF).

## NATIONAL ASSOCIATION OF COUNTY AND CITY HEALTH OFFICIALS (NACCHO)

NACCHO is the national organization representing local public health agencies (including city, county, metro, district, and tribal agencies). NACCHO's environmental health-related activities include development of the Protocol for Assessing Community Excellence in Environmental Health (developed in partnership with CDC/NCEH) and the Environmental Health Practices Project. ([www.naccho.org](http://www.naccho.org))

Community-based Environmental Health Assessment (CEHA) Program exists through a cooperative agreement with CDC's National Center for Environmental Health. NACCHO has developed and distributed the **Protocol for Assessing Community Excellence in Environmental Health (PACE EH)**, a guidance tool designed to assist local health officials in the planning and implementation of a

community-based environmental health assessment. **(research methods, tools)** The PACE EH methodology consists of thirteen interrelated tasks, including project planning, assessment team recruitment, environmental health issue identification, indicator development, and action plan development, that together describe a flexible and collaborative assessment process. (<http://www.naccho.org/project78.cfm>)

In June 2003, NACCHO entered into a new collaboration with CDC on the EPHT Network. The main objectives for NACCHO in this project are to promote and increase the knowledge base of local environmental and health professionals and to enhance the collaboration between public health agencies environmental agencies, partner agencies, and organizations to improve the efficacy of the EPHT program. Project activities will include: promotion through NACCHO's Web site and publications, publication and dissemination of EPHT educational materials outlining the goals and objectives, convening of focus groups, and participation in coordination activities. (<http://www.naccho.org/project95.cfm>)

### **TRUST FOR AMERICA'S HEALTH**

Trust for America's Health is a national non-profit organization whose mission is to protect the health and safety of all communities from current and emerging health threats by strengthening the fundamentals of public health defenses. **(tools)** The Trust's priorities are to:

- › Advocate for fair policies that ensure vigorous prevention and intervention of diseases for all communities;
- › Develop tools to reduce today's health threats, especially for those most at risk;
- › Ensure that every person has access to the information needed to understand and fight threats to our nation's health. ([www.healthyamericans.org](http://www.healthyamericans.org))

### **THE CENTER FOR CHILDREN'S HEALTH AND THE ENVIRONMENT (CCHE)**

CCHE is the nation's first academic research and policy center to examine the links between exposure to toxic pollutants and childhood illness. CCHE was established in 1998 within the Department of Community and Preventive Medicine of the Mount Sinai School of Medicine. CCHE's mission is to promote the health of children by conducting environmental health and policy research. CCHE works to:

- › Assist federal agencies in establishing health standards that are based on the unique exposures and special vulnerabilities of children;
- › Serve as an expert resource to the media and policy makers on children's environmental health issues;
- › Undertake targeted public education campaigns; and
- › Increase the visibility of environmental pediatrics in medical education and make environmental pediatrics a core component of pediatric practice. ([www.childenvironment.org](http://www.childenvironment.org))

### **PHYSICIANS FOR SOCIAL RESPONSIBILITY (PSR)**

Physicians for Social Responsibility (PSR) is a leading public policy organization with 24,000 members representing the medical and public health professions and concerned citizens, working together for nuclear disarmament, a healthful environment, and an end to the epidemic of gun violence. PSR's Environment and Health Program addresses an array of environmental health issues relevant to health

professionals in the United States and around the globe. These include toxics and health; children's environmental health; air pollution and health; climate change, energy, and health; chronic disease and the environment; and safe drinking water. PSR has created EnviroHealthAction, an education and action center that provides an online community for health professionals and others interested in environmental health. (<http://www.psr.org>)

PSR is currently collaborating with NACCHO to increase the knowledge base and technical skills of physicians with regard to EPHT. Specifically, PSR is working on engaging the medical community within states funded for EPHT and educating the medical community in states currently unfunded for EPHT.

## **PUBLIC HEALTH DATA STANDARDS CONSORTIUM (CONSORTIUM)**

The Consortium is a voluntary confederation of federal, state and local health agencies; national and local professional associations; public and private sector organizations; and individuals. The overall goal of the confederation is to develop, promote, and implement data standards for population health practice and research. The Consortium was originally supported through the CDC National Center for Health Statistics, but became a not-for-profit organization in July 2003. The Consortium is committed to bring a common voice from the public health community to the national efforts of standardization of healthcare information.

To fulfill its mission the Consortium:

- Promotes the integration of health-related data systems that will meet the health data needs of public and private organizations, agencies and individuals.
- Represents public health state and local agencies and health data professional organizations in the processes of development and implementation of national healthcare standards
- Identifies priorities for the development and implementation of new national data standards for population health including standardization of environmental, socio-cultural and economic data relevant to the health of the US population.
- Educates the public health community and other interested entities about health-related data standards.

The Consortium does not develop standards, but focuses on promoting the **use of data and systems standards** by public health community. (<http://www.cdc.gov/nchs/otheract/phdsc/phdsc.htm>) **(standards)**

## **NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION (NEHA)**

The mission of NEHA is "to advance the environmental health and protection professional for the purpose of providing a healthful environment for all." In pursuit of its mission, NEHA sponsors a variety of programs. Today, the association offers seven national credential programs (the Registered Environmental Health Specialist/Registered Sanitarian (REHS/RS), the Certified Environmental Health Technician (CEHT), the Registered Hazardous Substances Professional (RHSP), the Registered Hazardous Substances Specialist (RHSS), the Registered Environmental Technician (RET), the Certified Food Safety Professional (CFSP), the NEHA Radon Proficiency Program). In addition, NEHA conducts an Annual Educational Conference and Exhibition and a number of technical workshops each year including bioterrorism preparedness workshops. NEHA publishes a peer reviewed *Journal of Environmental Health*, supports professional continuing education, and performs additional services

ranging from networking to committee participation opportunities to the development of positions on timely and serious environmental concerns. (<http://www.neha.org/>) (**partnerships**)

## THE ASSOCIATION OF PUBLIC HEALTH LABORATORIES (APHL)

The Association of Public Health Laboratories (APHL) works to safeguard the public's health by strengthening public health laboratories in the United States and across the world. In collaboration with members, APHL advances laboratory systems and practices, and promotes policies that support healthy communities. The association connects U.S. public health laboratories in all 50 states and six territories, linking them with federal partners, such as the Centers for Disease Control and Prevention, the Environmental Protection Agency, the Department of Homeland Security and the Federal Bureau of Investigation.

APHL's strategic plan for June 2002 - 2005 identifies five goals and actions required to achieve them. The plan aims to: 1) build a competent public health laboratory workforce; 2) develop communications, partnerships and advocacy; 3) improve communication of laboratory data and information; 4) promote the use of quality laboratory practices; 5) assure that APHL's governance and membership are structured effectively. APHL is active in the areas of Policy Analysis, Information/Publications, Leadership Development, Laboratory Training, National Conferences, and domestic and international Technical Assistance. (<http://www.aphl.org/>) (**biomonitoring, research methods, tools**)

## VI. Collaborative Efforts

### HHS-EPA MOU PROJECTS

The signing of the EPA-HHS MOU and the ongoing meetings and collaborative calls between EPA and CDC have laid the groundwork for increased collaboration between these two federal agencies. EPA and CDC are in the process of determining how to formalize and solidify this groundwork through ongoing communications, information exchanges, and collaborative projects that will be mutually beneficial. Four collaborative projects have been initiated and are described below.

EPA ORD and OAR, CDC/NCEH, and NASA are collaborating with three CDC State EPHT Partners (ME, WI, and NY) in a pilot project called the **Public Health Surveillance Evaluation Project (PHASE)**. (**models, partnerships**) Using ambient air modeling, satellite data, and air quality modeling, the pilot aims to develop, evaluate, and demonstrate the advantages and limitations of alternative methods for generating air quality characterization surveillance data. These data could be systematically and routinely available to link with public health surveillance data as part of the Environmental Public Health Tracking Network. These data would supplement ambient air monitoring network data with emerging data sources, using statistical techniques to "combine" data from the various sources, and producing information that can be routinely used to track potential relationships between public health and air quality.

The **New York Pilot Data Exchange Project** is an effort involving the CDC/NCEH, CDC/IRMO, EPA OEI, and the NY State Departments of Health and Environmental Control to implement and test a system for exchange of air monitoring data between the New York State Environmental and Health Departments. (**data exchange**) The pilot, which is expected to be complete by September 2004, will examine the interoperability issues between CDC's PHINMS and EPA's NEIEN and provide lessons learned to CDC and other partners.



The **Health and Environment Linked for Information Exchange - Atlanta (HELIX- Atlanta)** was initiated by CDC in 2003. **(data linkages, data exchange)** Its objectives are to develop a local network, over the five-county metropolitan Atlanta area, of integrated environmental monitoring and public health data systems and tools for accessing, linking, analyzing, and disseminating data that will inform nationwide efforts. This collaborative effort with EPA and NASA includes 70 participants representing federal, state, local and academic environmental and health partners.

EPA Region 5, CDC/NCEH, and the State of Wisconsin are collaborating on an effort to **link asthma and various air pollutants** (e.g., ozone, PM, sulfur, nitrogen dioxides). **(data linkages, partnerships)**. Various other health conditions may also be examined. Many environmental data sets are being incorporated, including agricultural, land use, and pesticides databases. This is a local scale project.

## **OTHER COLLABORATIVE EFFORTS**

The **Rocky Mountain Biomonitoring Consortium (RMBC)** was formed to apply regional resources to address environmental public health problems in the states of Arizona, Colorado, Montana, New Mexico, Utah, and Wyoming. **(biomonitoring)** The goal of the RMBC is to implement and expand a regional laboratory-based biomonitoring program to assess the extent and nature of human exposures to environmental toxicants, including estimates of background exposure to naturally occurring and industrial chemicals that have the potential to cause harm, and to help prevent disease resulting from such exposures. To accomplish this goal, the RMBC has developed five objectives: (1) increase regional laboratory capacity to conduct biomonitoring, (2) support and enhance the collaboration between laboratories, epidemiologists, local public health agencies, and other partners within the region, (3) conduct biomonitoring activities, (4) complement and support on-going bioterrorism and chemical terrorism preparedness efforts, and (5) complement and support on-going Environmental Public Health Tracking (EPHT) efforts. ([http://www.dphhs.state.mt.us/epht/biomonitoring\\_executive\\_summary.htm](http://www.dphhs.state.mt.us/epht/biomonitoring_executive_summary.htm))

CDC has funded one other collaborative biomonitoring effort of five Upper Midwest states (Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin). They will use a biomonitoring communication module within **Wisconsin's Health Alert Network**, which is being integrated into Wisconsin's Environmental Public Health Tracking System. The five states also intend to share biomonitoring data and samples on toxicants such as metals and pesticides. (<http://www.cdc.gov/nceh/tracking/biomonitoring.htm>) **(biomonitoring)**

EPA ORD and NIH NIEHS are currently requesting applications from nonprofit institutions for grants that will fund six **centers for research on the etiology and prevention of health concerns in children** to explore those that may be related to environmental exposures. ([http://es.epa.gov/ncer/rfa/current/2003\\_child\\_health.html](http://es.epa.gov/ncer/rfa/current/2003_child_health.html)) **(grants)**

## VII. EPA and CDC Tracking and Related Grants (FY02 & 03)

Grantee	EPA One Stop Grants		CDC EPHTN Grants	
	Network Readiness Grant (FY)	Challenge Grant (FY); Description	Type* & (FY)	Description
Alabama				
Alaska		<b>Northwest Water Quality Data Exchange</b> (see Oregon) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_or.html">http://www.epa.gov/Networkg/state/2002/challenge_or.html</a>		
Arizona	02, 03			
Arkansas				
California	02, 03	<b>Beach Water Quality Exchange and RCRA Data Flows</b> (see New Jersey) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nj.html">http://www.epa.gov/Networkg/state/2002/challenge_nj.html</a>	B (02)  DLD (03)	CA EPHT – demonstration project to track asthma prevalence, low birth weight and preterm birth linked with traffic exhaust/air modeling.  Tracking Childhood lead poisoning data, birth outcomes, infant mortality (particularly SIDS), autism spectrum disorders, and mental retardation data linked with the EPA Hazardous Air Pollutant database, the California Pesticide Use Reports, and the California Air Resources Board's Community Health Air Pollution Information System (CHAPIS).  <a href="http://www.catracking.com/">http://www.catracking.com/</a>
Colorado	02			
Connecticut			A (02)	Planning and Capacity Building <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ct.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ct.htm</a>
Delaware	02, 03	<b>Beach Water Quality Exchange and RCRA Data Flows</b> (see New Jersey) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nj.html">http://www.epa.gov/Networkg/state/2002/challenge_nj.html</a>		
Florida			DLD (03)	Develop linkages among statewide surveillance systems for asthma, autism, mental retardation, behavioral disorders, select cancers, and select birth defects with EPA TRI, FDEP ambient air monitoring data, and data from well water surveillance program. <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/fl.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/fl.htm</a>

\* "A"—Planning and Capacity Building Activities Grant

"B"—Infrastructure Enhancement and Data Linkage Demonstration Projects

"CE"—Centers of Excellence Grants

"DLD"—Data Linkage Demonstration Pro

Grantee	EPA One Stop Grants		CDC EPHTN Grants	
	Network Readiness Grant (FY)	Challenge Grant (FY); Description	Type* & (FY)	Description
Georgia	02, 03	<b>Beach Water Quality Exchange and RCRA Data Flows</b> (see New Jersey) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nj.html">http://www.epa.gov/Networkg/state/2002/challenge_nj.html</a>		
Hawaii				
Idaho	03	<b>Northwest Water Quality Data Exchange</b> (see Oregon) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_or.html">http://www.epa.gov/Networkg/state/2002/challenge_or.html</a>		
Illinois	02, 03		B (02)	Conducting demonstration project that links data from Illinois cancer registry with TCE and PCE levels in ground water <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/il.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/il.htm</a>
Indiana	02			
Iowa	03			
Kansas	03			
Kentucky				
Louisiana	02, 03		DLD (03)	Implement a project in the regions surrounding 32 creosote hazardous waste sites that will link tumor data with groundwater contaminants and drinking water data <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/la.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/la.htm</a>
Maine	02, 03	<b>Electronic Storage and Sharing of Laboratory Information</b> (see New Hampshire) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nh.html">http://www.epa.gov/Networkg/state/2002/challenge_nh.html</a>	A (02)	Environmental Public Health Tracking Program <a href="http://www.maine.gov/dhs/ehu/epht/">http://www.maine.gov/dhs/ehu/epht/</a>
Maryland	02, 03		A (02)	Planning and Capacity Building <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ma.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ma.htm</a>

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	Network Readiness Grant (FY)	Challenge Grant (FY); Description	Type* & (FY)	Description
Massachusetts	02, 03		B (02)  DLD (03)	Examine pediatric asthma linked to indoor air quality in schools; developmental disability linked to PCB exposure, utilizing biomarkers; systemic lupus erythematosus linked with several pollutants  Examine blood lead levels with environmental data on ambient air contaminants, lead smelters, and drinking water distribution systems; childhood cancer incidence linked with drinking water quality and pesticide use databases; birth defects data and low birth weight data linked with drinking water quality data  <a href="http://www.state.ma.us/dph/beha/beha.htm">http://www.state.ma.us/dph/beha/beha.htm</a>
Michigan	02, 03			
Minnesota	02, 03			
Mississippi	02, 03			
Missouri	02, 03		B (02)	Initiate electronic reporting of laboratory results for blood lead levels, document environmental assessments and abatement activities, and create linkages with lead smelter and mining site databases and with other surveillance data. <a href="http://www.dhss.state.mo.us/EPHT/">http://www.dhss.state.mo.us/EPHT/</a>
Montana	03		A (02)	Montana Environmental PublicHealth Tracking Program <a href="http://www.dphhs.state.mt.us/epht/background.htm">http://www.dphhs.state.mt.us/epht/background.htm</a>
Nebraska	02			
Nevada			A (02)	Nevada Public Health Tracking Consortium <a href="http://www.healthtrack.nv.gov/">http://www.healthtrack.nv.gov/</a>
New Hampshire	02, 03	<b>Electronic Storage and Sharing of Laboratory Information</b> The project will implement a process of electronic data flow directly from the laboratories to the State Drinking Water Programs and ultimately to EPA via the Network node. New Hampshire is the lead state. (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nh.html">http://www.epa.gov/Networkg/state/2002/challenge_nh.html</a>	A (02)	Planning and Capacity Building <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nh.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nh.htm</a>

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Grantee	EPA One Stop Grants		CDC EPHTN Grants	
	Network Readiness Grant (FY)	Challenge Grant (FY); Description	Type* & (FY)	Description
New Jersey	02, 03	<p><b>Electronic Storage and Sharing of Laboratory Information</b> (see <i>New Hampshire</i>) (02)  <a href="http://www.epa.gov/Networkg/state/2002/challenge_nh.html">http://www.epa.gov/Networkg/state/2002/challenge_nh.html</a></p> <p><b>Beach Water Quality Exchange and RCRA Data Flows</b> - The project will build upon the proven Earth 911 Beach Reporting System (BRS) model currently utilized by a number of local and State agencies to provide real-time public notification of beach closures and associated health risks at recreational beaches. New Jersey is lead state.  (02)  <a href="http://www.epa.gov/Networkg/state/2002/challenge_nj.html">http://www.epa.gov/Networkg/state/2002/challenge_nj.html</a></p>	DLD (03)	<p>Three demonstration projects: (1) data on pediatric and other cancers with short latency periods with drinking-water-contamination and air-toxics-modeling data; (2) childhood blood lead data and adult heavy-metal-exposure data with New Jersey's Facility and Chemical Tracking System and modeled ambient-air exposure estimates for lead; and (3) adverse reproductive and developmental outcomes data with drinking water contamination and air toxics data.  <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nj.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nj.htm</a></p>
New Mexico	02, 03		<p>A (02)</p> <p>DLD (03)</p>	<p>Planning and Capacity Building  <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nm.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nm.htm</a></p> <p>Cancer incidence data from the NM Tumor Registry linked with arsenic concentrations in drinking water data from state SDWIS.</p> <p>Statewide Asthma Surveillance System and other respiratory diseases tracked by the Hospital Inpatient Discharge Database (HIDD) linked with air quality data.</p>
New York	02, 03		B (02)	<p>Improve surveillance capacity for this hazard and for these diseases: low birth wt, preterm births, intrauterine growth retardation, childhood mortality, and childhood asthma admissions linked to air pollution (O<sub>3</sub>, SO<sub>x</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, CO); birth outcome data (low birth weight, prematurity, and selected birth defects) linked with public water supply monitoring data geographically according to water district.  <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ny.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ny.htm</a></p>

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Grantee	EPA One Stop Grants		CDC EPHTN Grants	
	Network Readiness Grant (FY)	Challenge Grant (FY); Description	Type* & (FY)	Description
North Carolina	02, 03	<b>Beach Water Quality Exchange and RCRA Data Flows</b> (see New Jersey) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nj.html">http://www.epa.gov/Networkg/state/2002/challenge_nj.html</a>		
North Dakota	02			
Ohio	02, 03			
Oklahoma	02, 03		DLD (03)	Link data on childhood lead poisoning, asthma, birth defects, and cancer with environmental hazard data <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ok.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/ok.htm</a>
Oregon	02, 03	<b>Northwest Water Quality Data Exchange</b> Develop and implement a Network node of water quality data drawn from distributed sources throughout the four States comprising EPA Region 10. Specifically, the project will test: 1) the extensibility of Network principles, 2) the concept of a distributed Network operating without a central data repository; 3) the ability to extend the Network to other political entities and 4) the potential for providing data mapping tools to simplify mapping to accepted DETs. Oregon is the lead state. (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_or.html">http://www.epa.gov/Networkg/state/2002/challenge_or.html</a>	A (02)	Environmental Public Health Tracking Program <a href="http://www.ohd.hr.state.or.us/epht/">http://www.ohd.hr.state.or.us/epht/</a>
Pennsylvania	02, 03		A (02)	Environmental Public Health Tracking Program <a href="http://www.dshealth.state.pa.us/health/CWP/view.asp?A=171&amp;QUESTION_ID=199923">http://www.dshealth.state.pa.us/health/CWP/view.asp?A=171&amp;QUESTION_ID=199923</a>
Rhode Island	02, 03	<b>Electronic Storage and Sharing of Laboratory Information</b> (see New Hampshire) (02) <a href="http://www.epa.gov/Networkg/state/2002/challenge_nh.html">http://www.epa.gov/Networkg/state/2002/challenge_nh.html</a>		
South Carolina	02, 03			
South Dakota				
Tennessee				
Texas	02, 03			
Utah	02, 03		A (02)	Utah Environmental Public Health Tracking Program <a href="http://health.utah.gov/els/epidemiology/envepi/activities/ephtp.htm">http://health.utah.gov/els/epidemiology/envepi/activities/ephtp.htm</a>

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Grantee	EPA One Stop Grants		CDC EPHTN Grants	
	Network Readiness Grant (FY)	Challenge Grant (FY); Description	Type* & (FY)	Description
Wyoming				
Houston, TX			A (02)	Planning and Capacity Building <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/houston.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/houston.htm</a>
New York, NY			A (02) DLD (03)	Planning and Capacity Building  Linking child and occupational blood lead data, blood mercury data, and pesticide poisoning reports with environmental data for heavy metals and pesticides. <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nyc.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/nyc.htm</a>
Washington, DC			A (02)	Planning and Capacity Building <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/wash_dc.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/wash_dc.htm</a>
Johns Hopkins University			COE (02)	Research methods, standards <a href="http://www.jhsph.edu/EPHTcenter/index.html">http://www.jhsph.edu/EPHTcenter/index.html</a>
Tulane University			COE (02)	Develop an Internet interface for databases on water quality, asthma, and blood lead that can be refined for use with other data sources; mercury-exposure monitoring strategy; assess factors necessary to link data from ambient-air monitoring, passive dosimetry for volatile organic compounds, biomarkers of metal and pesticide exposure, and multiple disease rates in a study of populations living near petrochemical refineries <a href="http://epht.caeph.tulane.edu/">http://epht.caeph.tulane.edu/</a>
University of California, Berkeley			COE (02)	Examine associations between criteria air pollutants and asthma; methods to link environmental concentrations and body burdens of environmental contaminants <a href="http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/berkeley.htm">http://www.cdc.gov/nceh/tracking/EPHTracking/contacts/berkeley.htm</a>

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## List of Acronyms

APHL	Association of Public Health Laboratories
AQI	Air Quality Index
ASTHO	Association of State and Territorial Health Officials
ATSDR	Agency for Toxic Substances and Disease Registry
CCHE	Center for Children's Health and the Environment
CDC	Centers for Disease Control and Prevention
CEHA	Community-based Environmental Health Assessment
CHI	Consolidated Health Informatics
CSTE	Council of State and Territorial Epidemiologists
EARCG	Exposure Analysis and Risk Characterization Group
ECOS	Environmental Council of the States
EDSC	Environmental Data Standards Council
EHDAT	Environmental Health Data Action Team
eLEXNET	Electronic Laboratory Exchange Network
EEHE	CDC NCEH Environmental Hazards and Health Effects Division
EPHI	Environmental Public Health Indicators
EPHT	Environmental Public Health Tracking
EPHTN	Environmental Public Health Tracking Network
HAN	Health Alert Network
HEDS	Human Exposure Database System
HELIX	Health and Environment Linked for Information Exchange
HHS	Department of Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
HL7	Health Level 7
HSB	Health Studies Branch (within NCEH)
HSEES	Hazardous Substances Emergency Events Surveillance
ICCVAM	Interagency Coordinating Committee on the Validation of Alternative Methods
IMWG	Information Management Work Group
IRIS	Integrated Risk Information System
IRMO	CDC Information Resources Management Office
LOINC	Logical Observation Identifiers Names and Codes
LRN	Laboratory Response Network
MMRS	Metropolitan Medical Response System
MOU	Memorandum of Understanding
MTBE	methyl-t-butyl ether
NACCHO	National Association of County and City Health Officials
NAICS	North American Industry Classification System
NAHDO	National Association of Health Data Organizations
NAPHSIS	National Association for Public Health Statistics and Information Systems
NASA	National Aeronautics and Space Administration
NBS	NEDSS and NEDSS Based System
NCEA	EPA ORD National Center for Environmental Assessment
NCEE	EPA OPEI National Center for Environmental Economics
NCEH	CDC National Center for Environmental Health
NCER	EPA ORD National Center for Environmental Research
NCHS	CDC National Center for Health Statistics

## List of Acronyms (cont.)

NCVHS	HHS National Committee on Vital and Health Statistics
NEDSS	National Electronic Disease Surveillance System
NEHA	National Environmental Health Association
NER	National Exposure Registry
NERL	EPA ORD National Exposure Research Laboratory
NHANES	National Health and Nutrition Examination Survey
NHCS	National Health Care Survey
NHEERL	EPA ORD National Health and Environmental Effects Research Laboratory
NHII	National Health Information Infrastructure
NHIS	National Health Interview Survey
NHSRC	EPA ORD National Homeland Security Center
NIEHS	CDC National Institute of Environmental Health Sciences
NIH	National Institutes of Health
NIS	National Immunization Survey
NRMRL	EPA ORD National Risk Management Research Laboratory
NVVS	National Vital Statistics System
OAR	EPA Office of Air and Radiation
OCFO	EPA Office of the Chief Financial Officer
OCHP	EPA Office of Children's Health Protection
OCSP	EPA OPPTS Office of Science Coordination and Policy
OEI	EPA Office of Environmental Information
OMB	Office of Management and Budget
OPEI	EPA Office of Policy, Economics, and Innovation
OPP	EPA OPPTS Office of Pesticide Policy
OPPTS	EPA Office of Prevention, Pesticides, and Toxic Substances
ORD	EPA Office of Research and Development
OSCP	EPA Office of Science Coordination and Policy
OSP	HHS Office of Science Policy
OSWER	EPA Office of Solid Waste and Emergency Response
OW	EPA Office of Water
PACE EH	Protocol for Assessing Community Excellence in Environmental Health
PHASE	Public Health Air Surveillance Evaluation Project (PHASE)
PHF	Public Health Foundation
PHIN	Public Health Information Network
PHIN MS	Public Health Information Network Messaging System
PM	Particulate matter
PSR	Physicians for Social Responsibility
RMBC	Rocky Mountain Biomonitoring Consortium
SIC	Standard Industrial Classification
SLATIS	State and Local Area Integrated Telephone Survey
SND	Standards and Network Development
SNOMED	Systemized Nomenclature of Medicine
TCA	Trichloroethane
TCE	Trichloroethylene
VCCEP	Voluntary Children's Chemical Evaluation Program
VOC	Volatile organic compounds
XML	Extensible Markup Language

## VIII. Summary of Activities

### Standards

The **HHS Federal Health Architecture** is a multi-departmental business and technical architecture that facilitates identification of collaborative business opportunities to leverage existing efforts and investments, develop a performance measurement and outcome strategy, set technical and data standards, and develop specifications to implement those standards. **(standards, architecture)**

The **National Health Information Infrastructure (NHII)** is an activity within the Office of Science and Data Policy to bring about the collaboration between stakeholders in the private and public sectors and among all levels of government to adopt standards for communication and interoperability between systems, incorporate privacy and security practices, and fund projects where there is evidence that specific projects have benefited health care. **(standards, architecture)**

**Consolidated Health Informatics (CHI)** is an e-government initiative that will establish a portfolio of existing clinical vocabularies and messaging standards enabling federal agencies to build interoperable federal health data systems. **(standards, architecture)**

Within CDC, the **Public Health Information Network (PHIN)** is designed to provide an information management framework for all CDC data-related activities **(standards, architecture)**

The **Public Health Information Network Messaging System (PHIN MS)** is a specific instance of the ebXML version 2.0 Standard Message Service Handler for secure message transport compatible with PHIN standards. **(standards)**

The **PHIN Vocabulary and Thesaurus** recognize that vocabulary standards must be fostered and implemented for effective search, synthesis, and sharing of public health data. **(standards)**

**NEDSS and NEDSS Based System (NBS)** is an initiative launched in 1999 to promote the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, state and local levels to detect outbreaks rapidly and monitor the health of the nation. **(standards)**

PHIN will be compliant with the standards set by **Health Level 7 (HL7)**, a not-for-profit membership-based organization comprised of providers, vendors, government groups, consultants, and others who develop standards in the healthcare area. **(standards)**

The **SND Workgroup** formed four subgroups to address specific EPHT network standards related to Network Architecture, Metadata and Data Quality, Geography and Locational Referencing, and Data Access and Data Sharing. **(standards)**

The CDC **National Center for Health Statistics (NCHS)** is the Nation's principal health statistics agency and is active in both the gathering of and development of methods and standards for health-related information and data. **(standards)**

## Standards (cont.)

The NCHS officially established the **Public Health Data Standards Consortium** in January 1999, which serves as a mechanism for ongoing representation of public health and health services research interests in HIPAA implementation and other data standards-setting processes. **(standards)**

EPA and State representatives and contractors have developed the vision, conceptual model, operating principles, and **standards for the Exchange Network**. These partners continue to work together to define specific implementation strategies to evolve the effort. **(standards)**.

The EPA System of Registries includes the **Environmental Data Registry** (data standards, XML tags, and application metadata), the Substance Registry System (chemicals, biological organisms), Facility Registry System (facilities regulated for environmental discharges), and Terminology Reference System (environmental terms and definitions). **(standards)**

**EDSC standards** potentially relevant to environmental health include: Chemical Identification, Contact Information, Date, Facility Identification, Lat/Long, Reporting Water Quality Results for Chemical and Microbiological Analytes, SIC/NAICS, Tribal Identifier, Standard Data Elements for Environmental Sampling, Analysis, and Results, Standard Data Elements for Measure, Standard Data Elements for Method, Standard Data Elements for Representation of Date and Time, Standard Data Elements for Sample Treatment. **(standards)**

OCHP, part of the Office of the Administrator, supports and facilitates EPA's efforts to protect children from environmental threats. OCHP focuses on three work areas: (1) **regulations and standards**, (2) science and risk assessment, and (3) public awareness, community-based programs, and education. **(standards)**

OAR studies various aspects of air quality, including particulate matter (PM) and ozone to better establish **air quality and air toxics standards** that protect human health and the environment. **(standards)**

OW establishes **water quality standards** that take into account human health effects. **(standards)**

The Public Health Data Standards Consortium does not develop standards, but focuses on promoting the **use of data and systems standards** by public health community. **(standards)**

## Architecture

**The HHS Federal Health Architecture** is a multi-departmental business and technical architecture that facilitates identification of collaborative business opportunities to leverage existing efforts and investments, develop a performance measurement and outcome strategy, set technical and data standards, and develop specifications to implement those standards. **(standards, architecture)**

**The National Health Information Infrastructure (NHII)** is an activity within the Office of Science and Data Policy to bring about the collaboration between stakeholders in the private and public sectors and among all levels of government to adopt standards for communication and interoperability between systems, incorporate privacy and security practices, and fund projects where there is evidence that specific projects have benefited health care. **(standards, architecture)**

## Architecture (cont.)

**Consolidated Health Informatics (CHI)** is an e-government initiative that will establish a portfolio of existing clinical vocabularies and messaging standards enabling federal agencies to build interoperable federal health data systems. **(standards, architecture)**

Within CDC, the **Public Health Information Network (PHIN)** is designed to provide an information management framework for all CDC data-related activities **(standards, architecture)**

OEI oversees the **Information Enterprise Architecture** activities of EPA. **(architecture)**

## Data Linkages

Within the Environmental Hazards and Health Effects (EHHE) Division of CDC/NCEH, the Environmental Public Health Tracking Branch is working to develop the **Environmental Public Health Tracking (EPHT) Program** and Network. The goal of the EPHT Program is to develop a network that will enable direct electronic data reporting and linkage of health effect, exposure, and hazard data, and that will operate with other public health systems. **(data linkages)**

State recipients of EPHT grant funds for **linkage/demonstration** projects were asked to link environmental exposure and/or hazard data with one or more of the following health effects. **(data linkages)**

The NCEH/EHHE **Air Pollution and Respiratory Health Program** leads CDC's fight against environmental-related respiratory illnesses, including asthma, and studies indoor and outdoor air pollution. **(data linkages)**

NERL's Division of Human Exposure and Atmospheric Sciences supports the National Children's Study and maintains the **Human Exposure Database System (HEDS)** **(data linkages)**

The **Health and Environment Linked for Information Exchange - Atlanta (HELIX- Atlanta)** was initiated by CDC in 2003. **(data linkages, data exchange)**

EPA Region 5, CDC/NCEH, and the State of Wisconsin are collaborating on an effort to **link asthma and various air pollutants** (e.g., ozone, PM, sulfur, nitrogen dioxides). **(data linkages, partnerships)**

## Grant Activities

In 2002, \$14.2 million was awarded as cooperative agreements to 20 state and local health departments and three schools of public health (Academic Centers of Excellence) to establish the **EPHT Program**. In 2003, an additional \$4.2 million was made available. **(grants)**

The NBS is an example of a **NEDSS compatible system** that can be used by a state health department for the surveillance and analysis of notifiable diseases **(grants)**.

The **National Center for Environmental Research (NCER)** focuses on exposure, effects, risk assessment, and risk management, working in conjunction with other research centers and laboratories within ORD. NCER provides scientific grants for leading-edge, extramural research in these areas. **(grants)**

## Grant Activities (cont.)

The **Office of Science Policy (OSP)** provides funding for research activities in EPA Regions to address a variety of environmental and human health concerns. **(grants)**

OEI has provided **node grants** to States and Tribes over the last three years to develop the Exchange Network (see Section VII). **(grants)**

**Challenge Grants** have been made available to address specific data flows and coordination opportunities among partners. **(grants)**

EPA ORD and NIH NIEHS are currently requesting applications from nonprofit institutions for grants that will fund six **centers for research on the etiology and prevention of health concerns in children** to explore those that may be related to environmental exposures. **(grants)**

## Registries

ATSDR's **National Exposure Registry (NER)** is a critical, long-term effort that meets the need for collecting information concerning the potential impact of hazardous substances on human health. **(registries)**

OEI also provides access to **EPA's System of Registries**. **(registries)**

EDSC standards are available at the EDSC website and in the **EPA Environmental Data Registry** **(registries)**

## Research Methods

The **Health Studies Branch (HSB)** within NCEH/EHHE Division is responsible for investigating human health effects associated with exposure to environmental hazards and to natural and technological disasters. HSB's primary mission is to develop and evaluate strategies for preventing human exposure to environmental hazards and disasters and for minimizing the effects of such exposures when they do occur. **(research methods)**

NCHS has two major types of **data systems**: systems based on populations, containing data collected through personal interviews or examinations; and systems based on records, containing data collected from vital and medical records. **(research methods, tools)**

The **Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM)** was established in 1997 by the Director of NIEHS to implement NIEHS directives in Public Law (P.L.) 103-43. This law directed NIEHS to develop and validate new test methods, and to establish criteria and processes for the validation and regulatory acceptance of toxicological testing methods. **(research methods)**

ORD's **National Health and Environmental Effects Research Laboratory (NHEERL)** is organized into nine research divisions, each of which specializes in a different field of health or ecology research. **(research methods)**

## Research Methods (cont.)

The **National Center for Environmental Assessment (NCEA)** focuses on public health risk assessments and makes publicly available several databases and data sets. **(research methods)**

The **National Exposure Research Laboratory (NERL)** conducts research that lead to improved methods, measurements, and models to assess and predict exposures on humans and ecosystems. **(models, research methods)**

The **National Risk Management Research Laboratory (NRMRL)** and the National Homeland Security Center (NHSRC) conduct a variety of research programs that are related to environmental health effects, such as drinking water protection, air pollution control, and safe buildings. **(research methods)**

**The National Children's Study** will examine the effects of environmental influences on the health and development of more than 100,000 children a cross the United States, following them from before birth until age 21. **(research methods, biomonitoring)**

The **Voluntary Children's Chemical Evaluation Program (VCCEP)** provides data on potential health risks to children associated with certain chemical exposures. **(research methods, Biomonitoring)**

OAR also conducts **specific health/risk assessments** on other pollutants such as carbon monoxide, radon, second-hand smoke, and ultraviolet radiation. **(research methods)**

EPA OW is currently developing a **coordinated strategy to address all important sources of microbial contamination**, anticipate emerging problems, and use program and research activities efficiently to protect public health. **(indicators, research methods)**

OW conducts **health risk assessments and research** on water pollutants such as arsenic, lead, copper, MTBE (methyl-t-butyl ether), radon, and microbial pathogens. **(research methods)**

On October 29, 2002, EPA's Administrator announced the **EPA Aging Initiative**. **(research methods)**

NACCHO has developed and distributed the **Protocol for Assessing Community Excellence in Environmental Health (PACE EH)**, a guidance tool designed to assist local health officials in the planning and implementation of a community-based environmental health assessment. **(research methods, tools)**

The **Association of Public Health Laboratories** is active in the areas of Policy Analysis, Information/Publications, Leadership Development, Laboratory Training, National Conferences, and domestic and international Technical Assistance. **(biomonitoring, research methods, tools)**

## Data Exchanges

**The Environmental Public Health Tracking Network (EPHTN)** will be a sustainable standards-based national network that will allow direct electronic data reporting and linkage within and across health effect, exposure, and hazard data. **(data exchanges)**

**The Childhood Lead Poisoning Prevention Program** within the NCEH/Emergency and Environmental Health Services Division maintains the Childhood Blood Lead Surveillance System through which 46 states currently report lead poisoning data to CDC **(data exchanges)**

## Data Exchanges (cont.)

The IMWG has overseen the development, over the last four years of the **National Environmental Information Exchange Network** (Exchange Network). **(data exchanges)**

The **New York Pilot Data Exchange Project** is an effort under CDC's PHIN and EPA to implement and test a system for exchange of air monitoring data between the New York State Environmental and Health Departments. **(data exchanges)**

The **Health and Environment Linked for Information Exchange - Atlanta (HELIX- Atlanta)** was initiated by CDC in 2003. **(data linkages, data exchanges)**

## Alerts

**EPI-X** is the Centers for Disease Control and Prevention's web-based communications solution for public health professionals. Through *Epi-X*, CDC officials, state and local health departments, poison control centers, and other public health professionals can access and share preliminary health surveillance information --- quickly and securely. Users can also be actively notified of breaking health events as they occur. **(alerts)**

The **Health Alert Network (HAN)** is a nationwide, integrated information and communications system serving as a platform for distribution of health alerts, dissemination of prevention guidelines and other information, distance learning, national disease surveillance, and electronic laboratory reporting, as well as for bioterrorism and related initiatives to strengthen preparedness at the local and state levels. **(alerts)**

OW and the National Weather Service have developed the **Ultraviolet (UV) Index**, which provides a daily forecast of expected risk of overexposure to the sun. **(models, alerts)**

OW developed the **Air Quality Index (AQI)** and manages **AIRNow**, which forecasts and publishes next-day air quality conditions to the public. **(models, alerts)**

EPA OW **Health Advisories (HA's)** provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. **(alerts)**

OW has also developed a **beach advisory program** to protect recreational swimmers and fish contamination warnings. **(alerts)**

## Early Detection

**BioSense** is an early event detection system meant to improve preparedness for bioterrorism events. It involves near real time reporting of health data, aggregation of diagnostic and pre-diagnostic data, enhanced connections between clinical care and public health, and the advancement of early detection analytics. **(early detection)**



## Models

The **National Exposure Research Laboratory (NERL)** conducts research that lead to improved methods, measurements, and models to assess and predict exposures on humans and ecosystems. **(models, research methods)**

OAR and the National Weather Service have developed the **Ultraviolet (UV) Index**, which provides a daily forecast of expected risk of overexposure to the sun. **(models, alerts)**

OAR developed the **Air Quality Index (AQI)** and manages **AIRNow**, which forecasts and publishes next-day air quality conditions to the public. **(models, alerts)**

EPA ORD and OAR, CDC/NCEH, and NASA are collaborating with three CDC State EPHT Partners (ME, WI, and NY) in a pilot project called the **Public Health Surveillance Evaluation Project (PHASE)**. **(models, partnerships)**

## Indicators

**EPA's Environmental Indicators Initiative** aims to improve the Agency's ability to report on the status of and trends in environmental conditions and their affects on human health and the nation's ecological conditions. **(indicators)**

NCEH/Environmental Hazards and Health Effects Division in collaboration with the Council of State and Territorial Epidemiologists (CSTE) has developed a set of **NCEH/CSTE Environmental Public Health Indicators (EPHIs)** to assess health status or risk as it relates to the environment. **(indicators)**

ORD provided leadership in development of the **Technical Document** as part of *EPA's 2003 Draft Report on the Environment*. **(indicators)**

OEI was responsible for publication of the **Public Report** as a component of the *2003 Draft Report on the Environment*. **(indicators)**

OFCO is also contributing to the leadership of **EPA's Environmental Indicators Initiative** and development of the next Report on the Environment. **(indicators)**.

OCHP and the Office of Policy, Economics, and Innovation (OPEI) have jointly developed the nation's first assessment of environmental factors most likely to affect the health and well-being of children. They have developed a report entitled *America's Children and the Environment*, presenting key information about children's environmental exposures, biomonitoring, and diseases that may have environmental causes. **(indicators, biomonitoring)**

EPA OW is currently developing a **coordinated strategy to address all important sources of microbial contamination**, anticipate emerging problems, and use program and research activities efficiently to protect public health. **(indicators, research methods)**

During 2000, CSTE, CDC, ATSDR and EPA collaborated on the development of a set of environmental **public health indicators, or EPHI**. **(indicators)**

## Tools

The NBS provides a **platform to build modules** to meet state and program area data needs as well as providing a secure, accurate and efficient way for collecting and processing data. **(tools)**

NCHS has two major types of **data systems**: systems based on populations, containing data collected through personal interviews or examinations; and systems based on records, containing data collected from vital and medical records. **(research methods, tools)**

Region 10 is using OSP funding to conduct research, in conjunction with NHEERL, to develop **Tribal Fish Consumption Survey Software**. **(tools)**

The Office of Information Analysis and Access within OEI is engaged in a variety of health initiatives, including developing **health screening tools**. **(tools)**

OAR has a wide variety of **control, prevention and educational programs** to address the Nation's air quality problems. **(tools)**

OSWER conducts **human health risk assessments** associated with the wastes and sites they are responsible for overseeing, and provide risk assessment tools as technical assistance for the public and other professionals. **(tools)**

The ASTHO **Public Health Informatics Project** assesses policy and programmatic issues related to health data, health data systems, surveillance systems, performance standards, and the capacity of the state and local public health information infrastructure to appropriately measure population health status and workforce capacity. ASTHO is currently examining requirements for a public health knowledge management portal in cooperation with CDC. **(tools)**

NACCHO has developed and distributed the **Protocol for Assessing Community Excellence in Environmental Health (PACE EH)**, a guidance tool designed to assist local health officials in the planning and implementation of a community-based environmental health assessment. **(research methods, tools)**

**Trust for America's Health** is a national non-profit organization whose mission is to protect the health and safety of all communities from current and emerging health threats by strengthening the fundamentals of public health defenses. **(tools)**

The **Association of Public Health Laboratories** is active in the areas of Policy Analysis, Information/Publications, Leadership Development, Laboratory Training, National Conferences, and domestic and international Technical Assistance. **(biomonitoring, research methods, tools)**

## Response

In response to the 2001 anthrax attacks and the continued threat of bioterrorism in the U.S., federal investments in **biodefense activities** have risen from \$294 million in FY2001 to \$5.2 billion in FY2004. **(response)**

**Laboratory Response Network (LRN)** was established in 1999 by the Centers for Disease Control and Prevention. The purpose of the LRN is to run a network of laboratories that can respond quickly to acts of chemical or biological terrorism, emerging infectious diseases and public health threats and emergencies. **(response)**

ATSDR's **Hazardous Substances Emergency Events Surveillance (HSEES)** system was established to collect and analyze information about releases of hazardous substances that need to be cleaned up or neutralized according to federal, state, or local law, as well as threatened releases that result in a public health action such as an evacuation. **(response)**

## Biomonitoring

The NCEH/Division of Laboratory Sciences **Biomonitoring Program** develops instruments and tests for biomonitoring and builds biomonitoring capacity among state public health laboratories. In January 2003 they published the second *National Report on Human Exposure to Environmental Chemicals*. **(biomonitoring)**.

NHEERL is the Agency's focal point for **scientific research on the effects of contaminants and environmental stressors** on human health and ecosystem integrity. **(biomonitoring)**

**The National Children's Study** will examine the effects of environmental influences on the health and development of more than 100,000 children across the United States, following them from before birth until age 21. **(Research Methods, Biomonitoring)**

OCHP and the Office of Policy, Economics, and Innovation (OPEI) have jointly developed the nation's first assessment of environmental factors most likely to affect the health and well-being of children. They have developed a report entitled *America's Children and the Environment*, presenting key information about children's environmental exposures, biomonitoring, and diseases that may have environmental causes. **(indicators, biomonitoring)**

The **Voluntary Children's Chemical Evaluation Program (VCCEP)** provides data on potential health risks to children associated with certain chemical exposures. **(research Methods, biomonitoring)**

The **Association of Public Health Laboratories** is active in the areas of Policy Analysis, Information/Publications, Leadership Development, Laboratory Training, National Conferences, and domestic and international Technical Assistance. **(biomonitoring, research methods, tools)**

The **Rocky Mountain Biomonitoring Consortium (RMBC)** was formed to apply regional resources to address environmental public health problems in the states of Arizona, Colorado, Montana, New Mexico, Utah, and Wyoming. **(biomonitoring)**

## Biomonitoring (cont.)

CDC has funded one other collaborative biomonitoring effort of five Upper Midwest states (Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin). They will use a biomonitoring communication module within **Wisconsin's Health Alert Network**, which is being integrated into Wisconsin's Environmental Public Health Tracking System. The five states also intend to share biomonitoring data and samples on toxicants such as metals and pesticides. **(biomonitoring)**

## Partnerships

**PHIN initiatives** will address cross-cutting needs and specific programmatic requirements at local, state, and national levels. **(partnerships)**

OEI also supports the **Information Management Workgroup (IMWG)**, consisting of State and EPA representatives, with common interests in effective and efficient information management and partnerships. **(partnerships)**

In 2003, the IMWG, established the **Environmental Health Data Action Team (EHDAT)** which provides a forum for senior health and environmental officials working on information activities to identify and discuss common interests and issues. **(partnerships)**

OEI also supports the **Environmental Data Standards Council (EDSC)** comprised of state and EPA representatives. The EDSC is a joint venture of States, Tribes, and EPA. **(partnerships)**

**ECOS** works on improving the environment of the United States by (1) championing the role of States in environmental management; (2) providing for the exchange of ideas, views, and experiences among States; (3) Fostering cooperation and coordination in environmental management; and (4) Articulating state positions to Congress, Federal agencies and the public on environmental issues. **(partnerships)**

**ASTHO's** mission is to formulate and influence sound national public health policy and to assist state health agencies in the development and implementation of programs and policies to promote health and prevent disease. **(partnerships)**

**The National Environmental Health Association (NEHA)** publishes a peer reviewed *Journal of Environmental Health*, supports professional continuing education, and performs additional services ranging from networking to committee participation opportunities to the development of positions on timely and serious environmental concerns. **(partnerships)**

EPA ORD and OAR, CDC/NCEH, and NASA are collaborating with three CDC State EPHT Partners (ME, WI, and NY) in a pilot project called the **Public Health Surveillance Evaluation Project (PHASE)**. **(models, partnerships)**

EPA Region 5, CDC/NCEH, and the State of Wisconsin are collaborating on an effort to **link asthma and various air pollutants** (e.g., ozone, PM, sulfur, nitrogen dioxides). **(data linkages, partnerships)**