



Understanding Environmental Causes of Disease

FY 2010 Labor HHS Appropriations Bill Centers for Disease Control and Prevention (CDC) - National Center for Environmental Health

	2008	2009 Omnibus	2010 President	2010 TFAH
Environmental Health Labs	\$33,797,000	\$42,735,000	\$42,962,000	\$62,300,000
National Environmental Public Health Tracking Network	\$23,831,000	\$31,143,000	\$31,309,000	\$50,000,000
Climate Change Program	\$1,000,000*	\$7,500,000	\$7,540,000	\$25,000,000

*Funds were not specifically appropriated; CDC allocated discretionary funding for the program.

Background: In 2000, the Pew Commission on Environmental Health detailed an “environmental health gap,” a lack of information necessary to document links between environmental hazards and the incidence and distribution of chronic disease. Environmental hazards have been linked to birth defects and diseases, such as asthma and certain forms of cancer. Biomonitoring and health tracking help identify and track these links. Moreover, as we develop the strategies to deal with the effects of global climate change, CDC’s National Center for Environmental Health (NCEH) needs the resources to lead the public health response.

Biomonitoring: For more than 30 years, the Environmental Health Laboratory of the NCEH has been performing biomonitoring measurements--direct measurements of people's exposure to toxic substances in the environment. By analyzing blood, urine, and tissues, scientists can measure actual levels of more than 450 chemicals and nutritional indicators in people's bodies. This information helps public health officials to determine which population groups are at high risk for exposure and adverse health effects, assess public health interventions, and monitor exposure trends over time.

In the past year, the NCEH has worked with state health departments, academic partners and others to provide exposure information for more than 50 public health investigations and studies. Over the years, specific accomplishments have included:

- Publishing the *National Report on Human Exposure to Environmental Chemicals*, which provides an ongoing assessment of the U.S. population's exposure to environmental chemicals;
- Producing first-time exposure data for the U.S. population for chemicals such as
 - triclosan (an anti-bacterial chemical used in detergents, soaps, skin cleansers, etc.);
 - benzophenone-3 (a chemical used in sunscreen);
 - polybrominated diphenyl ethers (PBDEs) [a class of man-made chemicals that are added to plastics and foam products to make it more difficult for them to burn]; and
 - bisphenol-A (BPA) [an industrial chemical used to make one type of polycarbonate plastic and certain types of epoxy resins].
- Contributing to the science used to support the ban of three phthalates used in children’s toys;
- Assessing the exposure of Nevada school children to mercury after a student brought liquid mercury to school;

- Showing that restrictions on smoking in public places caused significant decreases in environmental tobacco exposure;
- Publishing a study that found an association between perchlorate levels in urine and decreased thyroid function in women; and
- Publishing the *National Report on Biochemical Indicators of Diet and Nutrition*, a comprehensive summary of data on levels of nutritional indicators in the U.S. population.

By August 31, 2009, CDC will award a total of \$5 million to 1-3 states for state-based laboratory biomonitoring programs. This funding will increase the capability and capacity of state public health laboratories to conduct biomonitoring and thus assess human exposure to environmental chemicals within their jurisdictions. Thirty-three states applied for funding either individually or as part of a consortium.

Recommendation: Provide a \$19.6 million increase (over the FY 2009 level) for CDC's Environmental Health Laboratory's biomonitoring capacity. Ten million would be used extramurally to support state public health laboratory biomonitoring capabilities. Activities would include conducting state biomonitoring surveillance programs; conducting rapid response to assess exposure to toxic chemicals; hiring personnel; and purchasing instruments and supplies.

\$7.6 million would be used for intramural activities, including increasing the number of chemicals measured in CDC's *National Report on Human Exposure to Environmental Chemicals*; providing measurements for chemicals measured in newborns and women participating in the National Children's Study; developing biomonitoring methods for additional chemicals; providing training and quality assurance for state laboratories awarded biomonitoring funds; increasing the number of studies used to assess health effects associated with exposure to environmental chemicals; and maintaining capacity to provide emergency response support related to exposure to environmental chemicals. An additional \$2 million would support the *National Report on Biochemical Indicators of Diet and Nutrition*, which will provide first-time data on the U.S. population for several nutritional indicators including *omega*- and *trans*-fatty acids.

Health Tracking: There is a connection between our environment and our health. Outdoor air pollutants cause an estimated 50,000 – 100,000 premature deaths annually. Illnesses stemming from air pollution alone cost about \$100 billion annually in the U.S. With a nationwide tracking program, we can begin to pull the pieces of the puzzle together to better understand the role of the environment on our health.

In 2002, Congress provided the CDC with funding to develop an environmental health tracking program and network that would build our capacity to understand and respond to environmental health issues and help document links between environmental hazards and chronic disease. The mission of the Tracking Program is to provide information that communities can use to improve their health; the information will come from a nationwide network that brings together health and environmental data. CDC funded 24 grantees for earlier stages of planning and capacity building. These pilot projects linked sets of existing data with data on environmental hazards; identified environmental health problems; and generated actions to improve the health of communities.

In 2009, Johns Hopkins University evaluated the impact of the tracking funding felt by the state and local grantees. Impact reported included increased data access for health effects (neurological disease, reproductive outcomes, respiratory disease) and hazard and exposure data (air pollution, heavy metals, and water pollutants). In addition, an increase in data use and dissemination was reported across all categories of data. Furthermore, 50% (8) of grantees responded that tracking data allows them to respond more efficiently and effectively to requests from policy makers, other agencies and the public. Over half of the respondents reported specific policy and/or program changes due to tracking.

Since FY 2006, CDC has funded just 16 states and one city to build and implement state-based tracking networks that will feed into the national Tracking Network. The funding levels in the FY 09 omnibus enabled CDC to fund more states and localities. CDC approved applications from a total of 14 states and three cities/localities, but was only able to fund six additional states (CO, KS, LA, MN, SC, and VT). CDC also provided existing grantees with additional funding. The National Network launched in July, but to be truly national and comprehensive in scope, we must build upon these increases to include all states.

Recommendation: Provide \$50 million for the National Environmental Public Health Tracking Network to expand the program to link environmental and health data to identify problems and effective solutions that will reduce the burden of chronic disease. Even just an additional \$5 million would enable the program to add four states to the existing network. But even this level of funding is not sufficient to fill the health and environmental data gap that is preventing our full understanding of how our health is affected by the environment. Ultimately, to implement a comprehensive network in all 50 states, a total of at least \$120 million will be needed.

Climate Change: Changes in climate affect human health, and public health must play a role in helping the nation prepare for and adapt to the effects of climate change. The FY 09 omnibus included \$7.5 million as an initial down payment on a Climate Change program at CDC to fund research and technical capacity-building in state and local governments. This funding will enable CDC to begin to build the groundwork for a comprehensive program. Such a program would support the following activities:

- Research and Surveillance – CDC and its partners would conduct research on both the health impacts and implications of climate change and mitigation strategies, as well as develop tools for modeling and forecasting climate change in specific areas or regions of the country.
- Building Capacity – State and local health departments need to develop the capacity to create climate change and health preparedness plans. Funding would support staff in state and local health departments to conduct planning. It would also support CDC's scientific capacity.
- Communication and Education – CDC would educate the public, decision-makers, healthcare providers, media, and non-governmental organizations and health care providers about climate change and health.
- Partnership Development – CDC would expand partnerships with other government agencies, the private sector, non-governmental organizations, universities, and international organizations addressing the health aspects of climate. CDC would also provide technical advice and support to state and local health departments, the private sector, and others, in implementing climate and health preparedness.

Recommendation Initially, \$25 million in FY 2010 would enable CDC to bolster its climate change staff, conduct climate change research and begin to work with state and local health departments on capacity building for climate change and health preparedness. Ultimately, increasing the investment to \$75 million in future years would further develop a credible and effective Climate Change Program in order to build capacity in all 50 states and certain large city health departments to implement a national climate preparedness program.