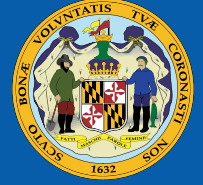




Environmental Health Activities in Maryland



NCEH in Partnership with Maryland

The National Center for Environmental Health (NCEH) is part of the Centers for Disease Control and Prevention (CDC). NCEH's work focuses on three program areas: identifying environmental hazards, measuring exposure to environmental chemicals, and preventing health effects that result from environmental hazards. NCEH has approximately 450 employees and a budget for 2004 of approximately \$189 million; its mission is to promote health and quality of life by preventing or controlling diseases and deaths that result from interactions between people and their environment.

NCEH and partners in **Maryland** collaborate on a variety of environmental health projects throughout the state. In **fiscal years 2000–2004**, NCEH awarded more than **\$13 million** in direct funds and services to Maryland for various projects. These projects include activities related to addressing asthma, studying age-related eye diseases, and inspecting cruise ships. In addition, Maryland benefits from national-level prevention and response activities conducted by NCEH or NCEH-funded partners.

Identifying Environmental Hazards

NCEH identifies, investigates, and tracks environmental hazards and their effects on people's health. Following are examples of such activities that NCEH conducted or supported in **Maryland**.

Asthma

- **Addressing Asthma from a Public Health Perspective**—NCEH is funding the **Maryland Department of Health and Mental Hygiene (DHMH)** to develop asthma-control plans that include disease tracking, science-based interventions, and statewide partnerships to reduce the burden of asthma in home, school, and occupational environments. Funding began in fiscal year 2001 and continues through fiscal year 2004.

Environmental Public Health Studies

- **Multistate Surveillance System for Possible Estuary-Associated Syndrome (PEAS)**—NCEH is

funding **DHMH** to research the nature and possible health effects of *Pfiesteria piscicida* (*P. piscicida*), a microscopic alga that lives in estuaries and has been found near large groups of dead fish. Although scientists do not know whether *P. piscicida* affects human health, anecdotal reports about symptoms such as headache, confusion, rash, and eye irritation in humans exposed to water containing high concentrations of *P. piscicida* have generated public concerns. To assist in responding to these concerns the project is (1) maintaining and expanding the Marine and Freshwater hotline and a harmful algal blooms Web site, (2) expanding surveillance activities by linking existing environmental monitoring data to surveillance data, (3) developing GIS applications to link data sets in time and space, and (4) analyzing a cohort study that was conducted with earlier funding. Funding began in fiscal year 1998 and is ongoing.

Environmental Public Health Tracking

- **National Environmental Public Health Tracking Program: Planning and Capacity Building**—NCEH is funding **DHMH** to launch, coordinate, and oversee progress for the Maryland Environmental Health Tracking Initiative. **DHMH** is working through an interagency coordinating group that includes the **Maryland Department of the Environment** to accomplish these tasks. The group plans action steps, sets interim goals and deadlines, addresses problems, ensures task completion, and ensures collaboration and stakeholder involvement. Funding began in fiscal year 2002 and continues through fiscal year 2004.

In fiscal years 2000–2004, NCEH awarded more than \$13 million in direct funds and services to Maryland.

- **National Environmental Public Health Tracking Program: Centers of Excellence in Environmental Public Health Tracking**—NCEH is funding the **Johns Hopkins School of Public Health Center of Excellence in Environmental Public Health Tracking** to strengthen the environmental health workforce through training and education, provide technical assistance and research support for the development of the Environmental Public Health Tracking Network, and conduct research to investigate links between the environment and health effects. Center efforts will be shaped by partnerships with participating state and local agencies, national health and environmental organizations, CDC, and NCEH. Funding began in fiscal year 2002 and ends in fiscal year 2004.

Measuring Exposure to Environmental Chemicals

NCEH measures environmental chemicals in people to determine how to protect people and improve their health. Following are examples of such activities that NCEH conducted or supported in **Maryland**.

Funding

- **Antiterrorism Funding to Increase State Chemical Laboratory Capacity**—In fiscal year 2003, CDC provided more than \$910,000 to **Maryland** to help expand chemical laboratory capacity to prepare for and respond to chemical-terrorism incidents and other chemical emergencies. This expansion will allow full participation of chemical-terrorism response laboratories in the Laboratory Response Network.

In addition, NCEH funds laboratory development and the purchase of state-of-the-art equipment in public health laboratories in Maryland to develop a network of chemical laboratories and transfer technology to measure chemical agents.

Studies

- **National Heart, Lung, and Blood Institute (NHLBI) Premier Study**—This study, which began in 1998, was a randomized, multicenter clinical trial to determine the effects of implementing recommended lifestyle interventions on blood pressure. The study was conducted at four clinical centers, including **Johns Hopkins University** in **Baltimore**. In collaboration with

NHLBI, NCEH measured serum samples for folate; carotenoids; and vitamins A, E, and B12. The main results showed that people with above-optimum blood pressure, including those with stage 1 hypertension, can make multiple lifestyle changes that lower their blood pressure, thus reducing their risk for cardiovascular disease.

- **Age-Related Eye Disease Study**—The National Eye Institute conducted the Age-Related Eye Disease Study, a 10-year multicenter study, to investigate the natural history of age-related macular degeneration and cataracts and the role of various risk factors in their development and progression. The study tested the effects of nutritional supplementation on preventing and controlling these diseases through a randomized, placebo-controlled clinical trial. NCEH measured serum samples for carotenoids; lipids; zinc; copper; and vitamins A, E, and C. **Wilmer Eye Institute at Johns Hopkins Hospital in Baltimore** was one of the 10 study centers.

Study results showed that people at high risk for advanced AMD, a leading cause of vision loss, lowered their risk by 25% when treated with a high-dose combination of vitamins C and E, beta-carotene, and zinc. In the same high-risk group, which includes people with intermediate AMD or with advanced AMD in only one eye, the nutrients reduced the risk for vision loss caused by advanced AMD by about 19%. For study participants who had either no AMD or who were in the early stages of AMD, the nutrients provided no apparent benefit.

- **Exposure to Environmental Contaminants in Pregnant Women and Effects on Fetal Development**—The **Johns Hopkins University School of Hygiene and Public Health** is conducting this study to evaluate exposure to environmental toxicants in a sample of pregnant women, stratified by social class, who live in and around **Baltimore**. The combination of sophisticated techniques to measure both biologic markers of exposure as well as fetal functioning will yield the first comprehensive evaluation of the contemporaneous effects of neurotoxicants on development before to birth. The overall purpose of the study is to examine the relation between environmental toxicants and fetal development.

The original sample was predominantly drawn from middle-class women. The current substudy, comprising women from a prenatal clinic that serves low-income patients, investigates earlier findings that indicated large differences in measures of fetal development by social class. NCEH measured polychlorinated biphenyls and organochlorine pesticides in 50 maternal serum samples. Fetal neurobehavioral functioning was assessed at 36 weeks gestation in normal, uncomplicated pregnancies of healthy women. Data are being evaluated to determine whether any relation exists between decrements to fetal development and the concentrations of biologic contaminants in maternal serum.

Services

- **Newborn Screening Quality Assurance Program**—NCEH provides proficiency-testing services and dried-blood-spot, quality-control materials to monitor and help assure the quality of screening program operations for newborns in **Maryland**. The importance of accurate screening tests for genetic metabolic diseases cannot be overestimated. Testing of blood spots collected from newborns is mandated by law in almost every state to promote early intervention that can prevent mental retardation, severe illness, and premature death.
- **Lipid Standardization Program (LSP)**—NCEH provides two lipid research laboratories in **Maryland** with accuracy-based standardization support for analytic measurement. These laboratories are involved in one or more ongoing lipid metabolism longitudinal studies or clinical trials that investigate risk factors and complications associated with cardiovascular disease. The LSP, supported by NCEH's Lipid Reference Laboratory, provides quarterly analytic performance challenges and statistical assessment reports that allow program participants to monitor performance over time and thus ensure the accuracy and comparability of study results and findings.
- **Helping State Public Health Laboratories Respond to Chemical Terrorism**—NCEH is working with **Maryland's** public health laboratory to prepare state laboratory scientists to measure chemical-terrorism agents or their metabolites

in people's blood or urine. NCEH is transferring analytic methods for measuring chemical-terrorism agents (including cyanide-based compounds and other chemicals) to Maryland. In addition, NCEH instituted a proficiency-testing program to measure the comparability of the state's analytic results with results from the NCEH laboratory.

Preventing Health Effects That Result from Environmental Hazards

NCEH promotes safe environmental public health practices to minimize exposure to environmental hazards and prevent adverse health effects. Following are examples of such activities that NCEH conducted or supported in **Maryland**.

- **Public Health Inspections of Cruise Ships**—NCEH established the model Vessel Sanitation Program in 1975 to combine industry cooperation with CDC's ability to aggressively protect the health of travelers. The program helps the industry develop and implement comprehensive sanitation programs to minimize risks for gastrointestinal diseases. Every vessel that has a foreign itinerary and carries 13 or more passengers is subject to two unannounced inspections each year. These inspections result in safer vessels and sanitation programs that protect the health of passengers and crew members. In 2003, the Vessel Sanitation Program conducted two inspections of cruise vessels with stops in **Maryland**.
- **Childhood Lead Poisoning Prevention Program**—The **Maryland Childhood Lead Poisoning Prevention Program (MD CLPPP)** has received NCEH funding since 1991. In 2001, the program screened 74,925 children for lead poisoning. The number of children under 6 years of age who had elevated blood lead levels decreased from 2,668 in 2000 to 2,114 in 2001. MD CLPPP is using NCEH funds to develop and implement a childhood lead poisoning elimination plan, to maintain and evaluate its targeted screening plan, and to increase targeted primary prevention and case management activities and strategic partnerships.

Resources

NCEH develops materials that public health professionals, medical-care providers, emergency

responders, decision makers, and the public can use to identify and track environmental hazards that threaten human health and to prevent or mitigate exposure to those hazards. NCEH's resources cover a range of environmental public health issues. These issues include air pollution and respiratory health (e.g., asthma, carbon monoxide poisoning, and mold exposures), biomonitoring to determine whether selected chemicals in the environment get into people and to what degree, childhood lead poisoning, emergency preparedness for and response to chemicals and radiation, environmental health services, environmental public health tracking, international emergency and refugee health, laboratory sciences as applied to environmental health, radiation studies, safe disposal of chemical weapons, specific health studies, vessel sanitation, and veterans' health.

For more information about NCEH programs, activities, and publications as well as other resources, contact the NCEH Health Line toll-free at 1-888-232-6789, e-mail NCEHinfo@cdc.gov, or visit the NCEH Web site at www.cdc.gov/nceh.