



Environmental Health Activities in Iowa



NCEH in Partnership With Iowa

NCEH is the National Center for Environmental Health (NCEH), a 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 from environmental hazards. NCEH has approximately 450 employees and an annual budget for 2003 of approximately **\$182 million**; its mission is to promote health and quality of life by preventing or controlling those diseases or deaths that result from interactions between people and their environment.

NCEH and partners throughout **Iowa** have teamed up on a variety of environmental health projects throughout the state. From **fiscal years 2001 through 2003**, NCEH awarded more than **\$2.8 million** in direct funds and services to Iowa for various projects. These projects include activities related to rural health, state chemical laboratory capacity, biomonitoring, and childhood lead-poisoning prevention. In addition, Iowa also 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 has conducted or supported in **Iowa**.

Rural Health Activities

- **Comprehensive Assessment of Rural Health in Iowa (CARHI)**—NCEH is funding and providing technical oversight to a 2- to 3-year cooperative surveillance activity that is generating baseline health data for selected rural communities in Iowa. With input from a CARHI committee of stakeholders, the **Iowa Department of Public Health (IDPH)** is linking environmental and health data from a rural community to allow investigation of health effects possibly associated with the environment,

such as effects associated with agricultural exposures.

The CARHI committee is developing a

tool and process for collecting data and a CARHI database. The committee also is recruiting communities and health care practitioners to participate in the CARHI project.

Public health officials will use CARHI data to monitor communities' health, identify existing or emerging health problems that warrant further investigation, enhance or guide environmental sampling, conduct comprehensive health studies, or target important public health programs such as smoking cessation and safe farming practices.

- **Assessment of the Off-Farm Transport of Waste-Associated Chemical and Microbial Constituents Present on Swine-Feeding Operations**—NCEH worked with **IDPH** and **Iowa State University** to conduct a study to determine whether antibiotics, resistant bacteria, and other constituents found in swine manure are traveling from agricultural fields to nearby soil and water systems.

Researchers analyzed soil and water samples from an experimental agricultural field both before and after the application of swine manure. Initial tests for bacteria and antibiotic resistance proved inconclusive, prompting the development of new laboratory methods. The final results, based on the new laboratory methods, are pending.

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 has conducted or supported in **Iowa**.

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Funding

- **Antiterrorism Funding to Increase State Chemical Laboratory Capacity**—In fiscal year 2003, CDC provided \$765,932 to **Iowa** to assist the state in expanding its chemical laboratory capacity to prepare and respond to chemical terrorism incidents and other chemical emergencies. This program expansion will allow for full participation of chemical terrorism response laboratories in the Laboratory Response Network.
- **Biomonitoring Planning Grant**—In fiscal year 2001, NCEH awarded a grant to **Iowa** to develop a plan for implementing a biomonitoring program for the state. In this way, the state could make decisions about which environmental chemicals within its borders were of health concern and could make plans for measuring levels of those chemicals in the Iowa population.

Studies

- **Assessing Pesticide Exposure Among Farm Families**—NCEH is collaborating with **Iowa** and CDC's National Institute for Occupational Safety and Health to investigate the relation between farm-home pesticide use and exposure of farm families to pesticides. NCEH provided confirmatory analyses of concentrations of pesticide metabolites in urine samples obtained from these farm families.
- **Keokuk Rural Health Study**—With the **University of Iowa**, NCEH investigated the relation between health effects and exposure to pesticides in people living in a rural area of the state. The laboratory measured detectable levels of 29 pesticides in the serum of 100 study participants. University of Iowa investigators are conducting further data analyses.
- **Age-Related Eye Disease Study (AREDS)**—Age-related macular degeneration (AMD) and cataracts are the leading causes of blindness in the United States. The prevalence of both diseases increases dramatically after age 60, but the importance of other risk factors in the development or progression of these diseases is unclear. The National Eye Institute is conducting AREDS, a 10-year, multicenter study (one center is in **Iowa**) to investigate the natural history of these diseases and the role of various risk

factors in their development and progression. The study is examining the effects of nutritional supplementation on preventing and controlling these diseases through a randomized, placebo-controlled clinical trial of 4,757 participants aged 55–80 years. NCEH measured serum samples for levels of carotenoids; lipids; zinc; copper; and vitamins A, E, and C. Study results showed no statistically significant effect of treatment in reducing risk for the progression of age-related lens opacities. For those participants with no AMD, there was no statistically significant difference between treatment groups for at least moderate visual acuity loss. Further, no statistically significant serious adverse effect was associated with treatment.

Services

- **Blood Lead Laboratory Reference System (BLLRS)**—BLLRS is a CDC standardization program designed to improve the overall quality of laboratory measurements of lead in blood. In **Iowa**, four laboratories participate in BLLRS. This program allows these laboratories to evaluate their performance on laboratory tests. CDC provides BLLRS materials free of charge to these laboratories four times a year.
- **Lipid Standardization Program (LSP)**—NCEH provides standardization support to one lipid research laboratory in **Iowa** that is involved in epidemiologic studies and clinical trials investigating risk factors and complications associated with cardiovascular disease. LSP, supported by CDC's Lipid Reference Laboratory (the cornerstone of the National Reference System for Cholesterol to which these lipid measurements are traceable), provides quarterly analytical performance challenges and statistical assessment reports to allow program participants to monitor performance, thus ensuring the accuracy and comparability of study results and findings.

Preventing Health Effects 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 has conducted or supported in **Iowa**.

- **Childhood Lead-Poisoning Prevention**—The **IDPH Childhood Lead-Poisoning Prevention Program** has received NCEH funding since 1992. These funds have enabled Iowa to operate a comprehensive lead program including screening, case management, education, and outreach. Forty-two percent of Iowa’s housing units were built before 1950, so the risk for lead poisoning for young children living in those units is high. In Iowa, the number of children younger than 6 years of age who have been screened for lead has increased 46% from 1997 to 2001—from 25,239 to 36,841, respectively. In addition to more children being tested, the number of children younger than 6 years of age with elevated blood lead levels has decreased 56%—from 9,644 in 1997 to 4,259 in 2001. Through emphasis on screening and use of geographical information systems to target resources to highest risk counties, Iowa has made great strides toward the national goal of eliminating childhood lead poisoning by 2010.

- **Building Communities of Excellence Through Environmental Health Capacity-Building**—In 2001, NCEH established a 3-year cooperative agreement with **IDPH**. Through implementation of 26 mini-grants, 30 counties have been able to purchase equipment, develop plans and tools, and establish education and marketing programs that have given them greater capacity to carry out the core functions and essential services of environmental health. Model environmental health program templates for wastewater, water quality, food safety, and nuisance programs were created by Iowa’s environmental health work group, which represents local, state, and academic interests. An environmental health resource manual specific to environmental health programs in Iowa has been created and will provide information on environmental health programs relevant to both practitioners and the public. Through training programs developed with this funding, 250 public health practitioners have gained a better understanding of the application of the core functions, essential services, and core competencies that has enabled them to identify needed improvements within state and local public health programming. The Iowa Community Health Needs Assessment and

Health Improvement Plan reporting tool allows all 99 counties to report in a consistent manner their public health priorities and plans identified through their local assessment and policy development efforts.

- **The National Mass Fatalities Institute**—CDC funds the National Mass Fatalities Institute, located on the **Kirkwood Community College** campus in **Cedar Rapids**. The physical and emotional well-being of survivors and responders; protection of the public health; preservation of evidence; and fulfillment of public expectations demand a timely, efficient, and effective mass-fatalities incident response. The National Mass Fatalities Institute is the only comprehensive training program for mass fatalities response currently available through government or nonprofit agencies. The institute was established to help communities, businesses, industries, government, and disaster response agencies effectively plan for, respond to, and recover from a mass fatalities incident.

Mass fatalities incidents are clearly complex, intense, and demanding events that necessitate collaboration, coordination, and cooperation among many agencies and organizations at all public and governmental levels. A community’s ability to respond to and recover from a mass fatalities incident is dependent on the efficiency and effectiveness of the mass fatalities response.

Resources

NCEH develops materials that public health professionals, medical care providers, emergency responders, decision makers, and the public can use to identify and track hazards in the environment that pose a threat to human health and to prevent or mitigate exposure to those hazards. NCEH’s resources cover a range of environmental public health issues, including air pollution and respiratory health (e.g., asthma, carbon monoxide, and mold issues), biomonitoring to determine whether and how much of substances in the environment are getting into people, childhood lead poisoning, emergency preparedness and response for 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 chemical weapons disposal, specific health studies, vessel sanitation, and veterans' health.

For more information about NCEH programs, activities, and publications and 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.

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