Activities in Iowa

ATSDR in Partnership With Iowa

The Agency for Toxic Substances and Disease Registry (ATSDR) is the lead public health agency responsible for implementing the health-related provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). ATSDR is an Atlanta-based federal agency with more than 400 employees and an annual budget for 2002 of $78 million. ATSDR is responsible for assessing the presence and nature of health hazards at specific Superfund sites, helping to prevent or reduce further exposure and illnesses resulting from those hazards, and expanding the knowledge base about the health effects of exposure to hazardous substances.

ATSDR works closely with state agencies to carry out its mission to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and disease related to toxic substances. ATSDR provides funding and technical assistance to states and other partners through cooperative agreements and grants to identify and evaluate environmental health threats to communities. These resources enable state and local health departments and other grantees to further investigate environmental health concerns and to educate communities. From **fiscal years 1988 through 2002**, ATSDR awarded more than **$5.8 million**—more than **$398,000** in the last 2 years—in direct funds and services to **Iowa** for comprehensive support of its environmental health unit. In addition to direct funds and services, ATSDR staff provides technical and administrative guidance for state-conducted site activities.

ATSDR Site-Specific Activities

Public Health Assessment-Related Activities

One of the agency's important mandates is to conduct **public health assessments** of all National Priorities List (NPL) sites and of other sites where a significant threat to public health might exist. **Twenty-eight** sites have been designated to the NPL in **Iowa**.

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A **public health assessment** is a written, comprehensive evaluation of available data and information on the release of hazardous substances into the environment in a specific geographic area. Such releases are assessed for current or future impact on public health. ATSDR, in collaboration with public health and environmental officials from **Iowa**, has conducted **38** health assessments in the state. Following is an example of a public health assessment conducted in the state:

- **Railroad Avenue Groundwater Contamination**—The Railroad Avenue Groundwater Contamination Site in **West Des Moines** comprises mixed residential, industrial, and commercial properties. Underneath the site, chlorinated volatile organic compounds (VOCs) have contaminated the shallow groundwater. These compounds have compromised several shallow wells within the West Des Moines water works system; five wells have been taken out of service.

  In June 2003, ATSDR released a draft health assessment for this site for public comment. Conclusions in the draft assessment were as follows: surface water and sediment at the site have not been impacted by VOCs; testing for VOCs in surface soils did not reveal any significant VOC contamination; and subsurface soils are contaminated with VOCs, but at levels that should not present a health hazard.

  Because analysis of available environmental data did not reveal that water customers are or have been exposed to VOCs at concentrations that might cause adverse health effects, the draft assessment categorized the site as no apparent public health hazard in the past, present, or future.

A **health consultation** is a written or oral response from ATSDR to a specific request for information about health risks related to a specific site, chemical release, or hazardous material. It is a more limited response than a public health assessment is. To date, **279** documented health consultations have been conducted at **83** sites in **Iowa.** Following are recent examples of health consultations conducted in the state:

- **Iowa Army Ammunition Plant (IAAP)**—During preparation of a 1999 health assessment for IAAP in **Middletown**, information became available that radioactive materials may have been used or processed at IAAP. A health consultation released in March 2001 addressed the possible presence of radioactive materials at the plant. To assess this possibility, the U.S. Army provided ATSDR with documents prepared during the time that portions of IAAP were under the control of the Atomic Energy Commission.

  The health consultation concluded that the presence of radioactive materials and the incomplete characterization of these materials meant that additional environmental characterization was needed. Levels of contamination in and around the IAAP grounds exceeded current clean-up standards, but because insufficient information on health effects was available, no determination as to the impact on public health could be made.

- **Iowa City Former Manufactured Gas Plant (FMGP)**—In February 2002, a health consultation was released that evaluated whether soil, air, and water contamination at FMGP in **Iowa City** posed a current hazard to public health. FGMP was a former coal gas production facility; the site was also used for a utility company storage area and a bus garage. Contaminants of concern at FGMP were polycyclic aromatic hydrocarbons (PAHs), VOCs, inorganic compounds used in the coal gas manufacturing process, lead, arsenic, and possibly cyanide. The 2002 health consultation concluded that contamination at FMGP posed no apparent public health hazard.

  Surface soils from the site did not reveal any levels of contamination that should be of health concern. Subsurface soils contained high levels of site-related contaminants, primarily PAHs and VOCs, at concentrations that would result in a substantial health hazard. However, the depth of these contaminants precludes human contact unless any future on-site excavation is done.

  Air quality monitoring at the apartment building on the site indicated that contaminant concentrations were not at levels sufficient to cause adverse health effects. Because all residences were already connected to the local municipal water supply, no completed current or future exposure pathways exist in relation to ingestion of contaminated water at this site.

An **exposure investigation** collects information on specific human exposures through biologic sampling, personal monitoring, related environmental assessment, and exposure-dose reconstruction. Since 1998, ATSDR staff members have conducted **three** exposure investigations in **Iowa**. A recent example of such an investigation follows:

- **Third Avenue Mercury**—Two homes on Third Avenue in **Council Bluffs** were affected by mercury leaking from a disconnected pressure release system of an antiquated steam-heating furnace system in one of the homes. Mercury was released from the disconnected system on the second floor down to the first floor and to the basement for approximately 12 months. Persons living in a second home nearby had spent considerable time in the first home and had often exchanged household items with residents of the first home. To examine the extent to which these residents were exposed to mercury, the **Iowa Department of Public Health (IDPH)** initiated an exposure investigation, which was released in August 2000. Blood or urine samples, or both, were collected from all but one occupant of the two homes. These samples showed no elevated mercury levels.

Health Education and Community Activities

Iowa has been a participant in ATSDR's cooperative agreement program since 1989. Under this program, **IDPH** has received funding and technical assistance for the development of community education and activities associated with human exposure to hazardous substances in the environment. The state has conducted grand rounds presentations and contacted physicians by letter about specific health

concerns related to hazardous waste sites in the state, conducted site-specific community education, and developed and distributed fact sheets or resource guides.

Health Studies

Health studies are investigations conducted to determine the relationships between exposures to hazardous substances and adverse health effects. They also define health problems that require further investigation through, for example, health surveillance or an epidemiologic study. Following are examples of health studies and investigations that ATSDR conducted or supported in the state of **Iowa**:

- **Hazardous Substances Emergency Events Surveillance System (HSEES)**—HSEES was established by ATSDR in 1990 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. The goal of HSEES is to reduce the morbidity and mortality of first responders, employees, and the general public resulting from hazardous substances emergencies. Fifteen state health departments, including **Iowa**, currently participate in HSEES. HSEES captures data on over 5,000 events annually. Of these, 80% occur at fixed facilities, and 20% are transportation-related events. Most events occur between 8:00 AM and 5:00 PM on Monday through Friday. Persons most often injured are employees.

  The HSEES system is used to generate information for use by states to conduct presentations on planning prevention strategies for industries that account for a significant number of spills; conduct HazMat training courses, including information on the risk for injury from methamphetamine labs; establish and maintain protection areas for municipal water systems; assist with the proper placement of HazMat teams; develop fact sheets on frequently spilled chemicals or chemicals that cause a disproportionate number of injuries (e.g., chlorine and ammonia); develop newsletters for industry, responders, and environmental groups; and conduct presentations for state and local emergency planners.

- **Surveillance of Reproductive Outcomes and Environmental Exposures**—ATSDR has supported the Centers for Disease Control and Prevention's (CDC) surveillance of reproductive outcomes and environmental exposures in **Iowa** since August 1986. Iowa began an active birth defects registry in January 1987 covering all 99 of its counties; record abstraction was undertaken retrospectively for all counties from 1983 through 1986 so that complete data exist from 1983. Between 1983 and 1990, more than 18,000 children with reportable birth defects were registered.

  As a part of this surveillance effort, a special project focused on ecologic studies of public drinking water contamination and birth defects in 18 small towns in southern Iowa. These drinking water supplies were contaminated with several herbicides including atrazine, cyanazine, metolachlor, and 2,4-dichlorophenoxyacetic acid (2,4-D). The project also evaluated the prevalence of birth defects in counties and municipalities with and without NPL sites, and the prevalence of neural tube defects near the La Bounty dump site (arsenic exposure). The prevalence of intrauterine growth retardation (IUGR) (using California norms), cardiac defects, urogenital defects, and limb reductions was elevated in the study towns. Generally, findings from both studies were inconclusive because of low statistical power and poor exposure information. However, counties with NPL sites containing heavy metals (e.g., arsenic, lead, and mercury) had a higher prevalence of clubfoot without central nervous system defects and a higher prevalence of cleft lip. The final report was released in September 1992.

Association of Occupational and Environmental Clinics

ATSDR provides financial and technical support to members of the Association of Occupational and Environmental Clinics (AOEC). This support is provided to improve education and communication related to surveillance, diagnosis, treatment, and prevention of illness or injury related to exposure to hazardous substances. The member institution in Iowa is **the University of Iowa Occupational Medicine Clinic** in **Iowa City**.

Since 1998, ATSDR has provided funds to AOEC to support a project establishing Pediatric Environmental Health Specialty Units (PEHSUs) that specialize in children's environmental health issues. The PEHSU for Iowa, Kansas, Missouri, and Nebraska is the **Midwest Regional Pediatric Environmental Health Center** at the University of Iowa in **Iowa City**. The center provides information and outreach about pediatric, public health, and environmental health issues to health care providers, educators, communities, and families in the four states it serves.

Resource Materials

ATSDR develops materials that public health professionals and medical care providers can use to assess the public health impacts of chemical exposures. Resources are available in print, on the ATSDR Web site, and on CD-ROM. For example, medical management guidelines are available for acute chemical exposures to more than 40 chemicals. ATSDR's toxicological profiles comprehensively describe health effects; pathways of human exposure; and the behavior of more than 250 hazardous substances in air, soil, and water at hazardous waste sites. In the last 5 years, more than **6,000** of these profiles have been sent to requesters, including representatives of federal, state, and local health and environmental departments; academic institutions; private industries; and nonprofit organizations in **Iowa**. ATSDR has also developed extensive resources for community members.

For more information, contact ATSDR toll-free at 1-888-42ATSDR (1-888-422-8737) or visit the ATSDR Web page at www.atsdr.cdc.gov.

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