



Activities in Texas



ATSDR in Partnership With Texas

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 2003 of approximately \$82 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 2003**, ATSDR awarded more than **\$9.2 million**—more than **\$1.4 million** in the last 2 years—in direct funds and services to **Texas** 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. **Fifty-two** sites have been designated to the NPL in **Texas**.

A **public health assessment** is a written, comprehensive evaluation of available data and information on the release of haz-

ardous 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 **Texas**, has conducted **67** health assessments in the state, including the following recent examples.

ATSDR awarded more than \$1.4 million in the last 2 years in direct funds and services to Texas.

- **Patrick Bayou**—ATSDR and TDH prepared a health assessment, released in March 2003, for the Patrick Bayou NPL site. Patrick Bayou is a small tidal tributary of the Houston Ship Channel (HSC) that flows through a heavily industrialized area in **Deer Park**.

The **Texas Department of Health (TDH)**, under a cooperative agreement with ATSDR, reviewed available environmental information for the Patrick Bayou site and evaluated the primary pathways through which people might possibly come into contact with contaminants from the site. These potential exposure pathways include groundwater, sediment, surface water, seafood, and air. Available information shows that people are not coming in contact with site contaminants; therefore, the Patrick Bayou NPL site does not pose a public health hazard.

- **Kelly Air Force Base (AFB)**—ATSDR was petitioned to conduct a health assessment of Kelly AFB and the neighborhoods north and southeast of the base. The request was in response to community concerns about pollution generated by the base. In addition to releasing an initial summary document, two health consultations, and a public comment draft of the health assessment, ATSDR has evaluated several other public health-related issues for Kelly AFB: on-base drinking water, on-base exposure to current air

emissions, off-base exposure to past air emissions, potential off-base exposures from East Kelly, two occupational radiation consultations, and health outcomes in zip codes surrounding the base. The final health assessment and several final health consultations will be released after translation into Spanish.

ATSDR is also conducting environmental training for health care providers, nurses who serve Kelly AFB and the surrounding community, and community residents.

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, **196** documented health consultations have been conducted at **110** sites in **Texas**, including the following recent example.

- **El Paso County Metals Survey**—In May 2001, the city of **El Paso** was concerned about heavy metal contamination in the soil near Sun Bowl stadium. EPA collected soil samples near the stadium and at El Paso area elementary schools, area parks, and the **University of Texas at El Paso** campus. These samples showed some elevations of lead and arsenic in the soil. Under a cooperative agreement with ATSDR, **TDH** conducted health consultations on each of these areas and determined that although some of the levels were above screening levels, no adverse effects would be expected.

In response to recommendations made in previous health consultations, EPA contracted with the College of Veterinary Medicine at the University of Missouri Columbia to assess the relative bioavailability of arsenic in soil from the El Paso remediation area. Using data from this study, scientists from the **Texas Commission on Environmental Quality (TCEQ)** and EPA proposed a residential soil clean-up level of 46 milligrams per kilogram (mg/kg). EPA asked TDH and ATSDR for an independent assessment to evaluate whether the proposed soil clean-up level for arsenic would be protective of public health.

A health consultation released in July 2003 concluded that the proposed clean-up level of 46 mg/kg arsenic in surface soil is not expected to cause adverse health effects as a result of

short-term or long-term exposure. The proposed clean-up level for arsenic in surface soil at this site would pose no apparent public health hazard.

All activities are being coordinated with TCEQ, TDH, the **El Paso City-County Health District**, ATSDR, and local city and county officials. EPA and ATSDR have ensured that all information is shared with the appropriate Mexican government counterparts.

Health Education and Community Activities

Texas has been a participant in ATSDR's cooperative agreement program since **1988**. Under this program, **TDH** 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 **Texas**.

- **Determining the Prevalence of Multiple Sclerosis and Amyotrophic Lateral Sclerosis in Communities Living Around Hazardous Waste Sites**—ATSDR awarded a cooperative agreement to **TDH** to build on the methods and expertise they have developed in the pilot project by continuing multiple sclerosis (MS) surveillance in the 19-county **Lubbock** study area, expanding MS surveillance to El Paso County, including amyotrophic lateral sclerosis (ALS) as a surveillance condition and conducting ALS surveillance in the 19-county Lubbock study area, El Paso County, and Bexar County. TDH has targeted El Paso County because MS has been the focus of intense public scrutiny since a resident reported a cluster of this disease among individuals who attended the same elementary school and TDH conducted a cluster investigation finding a two fold increase in the disease. However, the

cluster investigation focused only on attendees of the elementary school and residents are concerned about an apparent excess of the disease in their community that may be linked to exposure to environmental contaminants. Bexar County was specifically targeted for ALS surveillance to address community concerns regarding exposures from Kelly Air Force Base and an apparent excess of ALS.

■ **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 **Texas**, 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.



Aging fire truck on the Kickapoo Traditional Tribe of Texas Reservation near Eagle Pass.

- **National Exposure Registry: Benzene Subregistry**—The National Exposure Registry comprises chemical-specific subregistries designed to aid in assessing the long-term health consequences of low-level, long-term exposures to hazardous chemicals identified at hazardous waste sites. Benzene is one of the chemicals selected for a subregistry. The only site for this subregistry in **Texas** is the **Three Lakes Municipal Utility District in Harris County**. Benzene, which is found in air, groundwater, and soil, and is a known human carcinogen, causes

aplastic anemia. Exposure to benzene has also been linked to genetic damage. Long-term exposure to benzene in the air can cause cancer of the tissues that form white blood cells (leukemia). Health outcome rates for this subregistry were compared with national rates, as determined by the National Health Interview Survey. Health outcomes reported in significant excess by these subregistry members during the data collection periods (for certain age and sex groups) included anemia and other blood disorders; arthritis, rheumatism, or other joint disorders; cancer; diabetes; kidney disease; liver problems; other respiratory allergies or problems such as hay fever; skin rashes, eczema, or other skin allergies; effects of stroke; and ulcers, gall bladder trouble, or stomach or intestinal problems. Baseline interviews were conducted in 1991; follow-up interviews were conducted in 1992, 1993, 1995, 1997, and 2000.

Tribal Government Collaboration

In September 2003, an ATSDR staff member met with the Tribal Environmental Protection Department of the **Kickapoo Traditional Tribe of Texas**. The Kickapoo Traditional Tribe of Texas is about 5 miles south of **Eagle Pass**, Texas, on the Texas/Mexico border. At EPA's request, ATSDR met with the Kickapoo Tribe to discuss its emergency response capabilities. Funding for this trip was provided by an interagency agreement with EPA. The Kickapoo Tribe informed ATSDR that the tribe does not have a police force or a fire department. The tribe has a small security staff housed in

an office at the entrance to its Reservation, and it has a 40-year-old fire truck parked next to the security office. All Reservation emergency and police services come from the city of Eagle Pass or the county of Maverick on an emergency-response-only service. The tribe hopes to get emergency response training from Texas or from the federal government for tribal staff, but training has not been secured for the tribe. The tribe does have a small health clinic funded by the Indian Health Service, but the clinic does not have medical emergency capability.

Substance-Specific Applied Research Program

In 1997, ATSDR awarded cooperative agreement funds to five universities, including **Texas A&M Research Foundation**, to conduct research to assess health risk after exposure to mixtures of environmental chemicals. Results of this research will enable ATSDR staff to conduct toxicity assessments of chemical mixtures that affect public health; study the behavior of chemical mixtures; identify various end points that would be affected; evaluate target organs that could be affected; study the mechanisms of action, initiation, progression, and repair of injury; identify biomarkers to determine the health of an organism; and develop qualitative and quantitative methods to assess multiple health effects.

The overall objectives of this project are to develop a protocol to investigate the toxicity of several classes of environmentally important chemical mixtures. Some of the most common mixtures present in the environment include the polycyclic aromatic hydrocarbons (PAHs) that are present in air particulates, cigarette smoke, petroleum products, and wood-preserving waste. These analytical methods would be valuable for assessing risk of complex mixtures found in the environment or associated with lifestyle and occupational exposures. Individual chemicals and component mixtures can be tested and the data analyzed to investigate potential chemical interactions.

Minority Health Professions Foundation (MHPF) Research Program

The MHPF program supplements the substance-specific information needs of the public and the scientific community and supplies necessary information for conducting comprehensive public health assessments

of hazardous waste sites. The purpose of the MHPF program is to initiate research to fill ATSDR-identified data needs for priority hazardous substances, and to enhance existing disciplinary capacities to conduct research in environmental health at MHPF member institutions, one of which is the **College of Pharmacy and Health Sciences, Texas Southern University (TSU) in Houston**.

Funded studies at TSU include an investigation to determine the molecular events or mechanisms involved in lead-induced neurotoxicity. Investigators at TSU developed an animal model for studying the molecular events that occur at blood lead levels that are associated with behavioral effects in children. Findings from this investigation at TSU have been published in the scientific literature.

Association of Occupational and Environmental Clinics

Through a national cooperative agreement with the Association of Occupational and Environmental Clinics (AOEC), ATSDR supports two occupational and environmental health programs in **Texas**. 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 institutions in Texas are the **Texas Institute of Occupational Safety and Health (Tyler)** and the **University of Texas Health Services (Houston)**.

Since 1998, ATSDR has provided funds to AOEC to support a project establishing Pediatric Environmental Health Specialty Units (PEHSUs) as a national resource for pediatricians, other health care providers, federal staff, and the public. The PEHSUs develop materials and present training to health professionals and public health officials on environmental health issues and their impact on children's health. The PEHSU for Arkansas, Louisiana, New Mexico, Oklahoma, and **Texas** is the **University of Texas Health Center at Tyler**. The unit began operations in September 2000 and offers multidisciplinary evaluation and management of children with known or suspected exposure to a wide range of environmental toxicants.

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.