



**Testimony
Before the Committee on Science and
Technology
Subcommittee on Investigations and
Oversight
United States House of Representatives**

**Scientific Oversight and Management of the
Agency for Toxic Substances and Disease
Registry**

Statement of

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Good morning Chairman Miller and other distinguished Members of the Subcommittee. Thank you for the opportunity to be here today. I am Dr. Howard Frumkin, Director of the Agency for Toxic Substances and Disease Registry (ATSDR) and the Centers for Disease Control and Prevention's (CDC's) National Center for Environmental Health (NCEH).

I am a physician with 27 years of experience in environmental and occupational medicine and epidemiology. I have been Director of NCEH/ATSDR since September 2005. Previously, I served as chairman of the Department of Environmental and Occupational Health at Emory University's Rollins School of Public Health and professor of medicine at Emory Medical School.

I am committed to the goal of serving the public by protecting the public's health, and bringing to bear the best science in doing so. As a public servant, I am accountable for achieving this goal. I am very proud of ATSDR's overall efforts to protect the public's health from chemical exposures.

I testified before this Committee on April 1, 2008, at a hearing that focused on the work of ATSDR and NCEH in responding to hurricane Katrina, including our work specific to formaldehyde in temporary housing trailers. I testified at that time that in some respects we could and should have done better. I also noted that there were key lessons to be learned. During the past year we have taken important steps to ensure that our current and future work builds on those lessons, which I will address later in this testimony.

Today's testimony will discuss more broadly ATSDR's scientific and programmatic activities, and will focus on three areas.

- First, I will provide background on ATSDR, including examples of work the agency has conducted at specific sites in communities across the United States.
- Next, I will discuss some of the challenges faced by ATSDR.
- Finally, I will share a vision for ATSDR as we look toward the future, emphasizing our commitment to continuous improvement in four categories: overall mission, science administration, organizational management, and specific procedures.

The ATSDR Story

ATSDR is the principal non-regulatory federal public health agency responsible for addressing health effects associated with toxic exposures. The Agency's mission is to serve the public by using the best science, taking responsive public health actions, and providing trustworthy health information to prevent harmful exposures and disease related to exposures to toxic substances.

ATSDR was created by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, more commonly known as the Superfund law, and came into existence several years later. CERCLA reflected Congressional and public concern with toxic chemicals, particularly hazardous waste, in the aftermath of such environmental disasters as Love Canal (New York) in the late 1970s.

ATSDR was charged with implementing the health-related provisions of CERCLA. The language in CERCLA, and in the subsequent Superfund Amendments and Reauthorization Act of 1986—or SARA—leaves room for interpretation, but in

general terms, it assigns ATSDR four responsibilities, each of which is described in more detail below:

- Protecting the public's health
- Building the science base on toxic chemicals
- Providing information on toxic chemicals to health professionals and the public
- Establishing and maintaining registries

ATSDR has pursued each of these responsibilities during the nearly quarter century since it came into being. Our work is very complex and it has not always been perfect, as I acknowledged to this committee last year, but overall I am proud of the wide range of achievements, and proud that we have constantly sought to improve our performance.

Protecting the Public's Health

A core function of ATSDR is assessing potential health hazards posed by hazardous waste sites and making recommendations for protecting public health. This is a mandated function in the case of Superfund sites, and discretionary in the case of other hazardous waste sites. Our site-specific work is presented in one of several forms: Public Health Assessments, Public Health Consultations, Exposure Investigations, and Technical Assists.

A Public Health Assessment, or PHA, is generally conducted when there are multiple contaminants and potential pathways of exposure. In a PHA, ATSDR examines past, present, and future exposure scenarios to evaluate whether people were, are, or may in the future be exposed to hazardous substances and, if so, whether that

exposure is harmful, or potentially harmful, and in what ways. ATSDR scientists generally analyze existing environmental and health data—provided by EPA, other government agencies, businesses, and the public—and make recommendations. In some instances ATSDR scientists conduct their own health or exposure investigations. A Health Consultation is similar to a Public Health Assessment in that it evaluates environmental data and how people might be exposed, but focuses on a more specific health question and uses a more limited dataset. The purpose of an Exposure Investigation is to fill environmental or biologic knowledge gaps with information needed for our public health work. A Technical Assist is a brief document that answers a specific, narrow question; because it does not require extensive background research and data analysis, it is generally completed more rapidly than the more detailed reports.

Recommendations for protecting health and preventing exposures are regular components of these documents. ATSDR is not a regulatory agency; our reports identify recommended actions that would be appropriate for EPA or other authorities to undertake, but do not compel these actions. Recommendations are directed to entities responsible for characterizing or mitigating exposures, including state and local government agencies. Our reports may also recommend that our Agency conduct further work such as health studies, or health professional and community education. If there is an urgent health threat, ATSDR can issue a public health advisory warning people of the danger. ATSDR can also carry out health education or pilot studies of health effects, full-scale epidemiological studies, exposure or disease registries, disease and exposure surveillance activities, or research on specific hazardous substances.

In addition, ATSDR can help protect the public from chemical exposures in settings other than hazardous waste sites, circumstances that are collectively referred to as “releases.” These releases may range from chemical plant explosions to a spill of coal combustion products. They can be those identified by government agencies or by individuals within the community through the petition process.

ATSDR responds to emergencies involving the release of chemicals, most often in collaboration with the Environmental Protection Agency. ATSDR personnel provide real-time public health guidance following acute releases of hazardous substances and health information to the public (for example, helping determine when people can safely reoccupy their homes and businesses after an evacuation).

Much of this public health protection work is carried out by state health departments, with funding and technical support from ATSDR. Our state cooperative agreement program functions in 29 states and one tribal government. In many cases, ATSDR funding provides the only support for these activities at the state level.

ATSDR’s work in protecting public health has been highly productive. The Agency issues between 300 and 400 Health Assessments and Health Consultations, and provides more than 1,000 Technical Assists, each year. During the period 1995-2006, 73% of our recommendations were implemented by Federal, state and local authorities.

Over the nearly quarter century of our work, we have made important contributions to the way community-based environmental public health is practiced. The required knowledge and skill were hard-won; in the early years growing pains were common, but over time ATSDR developed considerable expertise in community-based

work. Our staff is committed to working closely with the communities we serve, to listening to and respecting community concerns, and to incorporating community input into our work plans. ATSDR's public communications recognize cultural, ethnic, and linguistic diversity. The Agency has helped advance the concept and practice of Environmental Justice, since many of the communities we serve are poor and/or members of racial and ethnic minorities.

ATSDR has a strong track record of sticking to the science and advancing public health, even in sometimes controversial, highly charged situations. Several examples are illustrative:

- **Montana:** Vermiculite mined by the W.R. Grace Company in Libby, Montana, was contaminated with tremolite asbestos. EPA and the Montana Congressional delegation requested that ATSDR evaluate human health concerns related to asbestos exposure in Libby. ATSDR has conducted a number of activities in the community, including: a screening program to identify people whose health may have been impacted by exposure to asbestos (revealing that 18 percent of those tested had abnormalities in the linings of their lungs, as compared to between 0.2 and 2.3 percent of people without asbestos exposure); a mortality review that compared asbestos-associated death rates for residents of the Libby area with those in Montana and the United States (finding that for the 20-year period examined, mortality from asbestosis was approximately 40 times higher than the rest of Montana and 60 times higher than the rest of the United States); and a Tremolite Asbestos Registry, a listing of individuals with asbestos-related disease or those at high risk of developing asbestos-related disease because of exposure to asbestos.

ATSDR continues to be actively involved with the site and the community, joining recently with EPA to establish the Libby Health Risk Initiative, a program to add to the understanding of health effects of exposure to Libby amphibole.

- **Ohio:** The Brush-Wellman company, in Ottawa County, Ohio, is the major processor of beryllium in the United States. ATSDR completed a Health Consultation in 2002, and found that emissions at the time did not pose a risk. Past emissions were known to have exceeded applicable standards, but available data were not sufficient to permit assessment of the past hazard. Some local officials and the company strongly objected to follow-up activity, but ATSDR offered clinical testing for beryllium sensitization to local residents. All concerned individuals were tested; of 18 participants, none tested positive. Based on that finding, ATSDR did not recommend further testing. We followed up by educating local health care providers to help them identify and test for beryllium exposure and chronic beryllium disease.
- **Minnesota:** Excel Dairy is a large dairy farm in Marshall County, Minnesota. After neighbors complained of odors and respiratory and other symptoms, ATSDR worked with the Minnesota Department of Health (MDH) to sample for hydrogen sulfide (H₂S) at nearby homes. Data indicated that health based guidelines were frequently exceeded, often for hours at a time. In 2008 ATSDR recommended that Excel Dairy take immediate steps to protect health and safety, especially of children, such as by applying permanent covers to the manure lagoons. ATSDR also recommended that the Minnesota Pollution Control Agency continue to monitor air emissions of hydrogen sulfide, and that MDH work with local public health officials to provide people living at the Dairy with appropriate information to protect their health and

safety. ATSDR also indicated that if measures to eliminate exceedances of the state's standards for H₂S were not effective, the agency would consider further exposure monitoring in coordination with MDH. In 2008 ATSDR testified before a House Subcommittee on this matter. EPA is collecting hydrogen sulfide readings from the facility and will continue to conduct a follow-up assessment.

- **New Jersey:** The Kiddie Kollege Day Care Center in Franklin Township, New Jersey, was housed in a former thermometer factory, exposing children and staff to mercury. In 2007, ATSDR worked with New Jersey health and environmental officials and staff at the nearby Pediatric Environmental Health Specialty Unit, a university-based effort funded partially by ATSDR, to assess the exposures. Initial findings included elevated levels in 31 percent of children and 33 percent of adults tested, with follow-up testing after exposure had stopped showing a reduction to low levels. New Jersey has since enacted legislation establishing stringent criteria before building permits can be issued for day care or educational institutions in environmentally high risk sites. ATSDR was directed to prepare a report on children's exposure to mercury, which was recently submitted to two Congressional committees.
- **North Carolina:** During the 1990s, residents of Randolph County, North Carolina, complained of respiratory symptoms that they associated with a nearby polyurethane foam manufacturing plant. ATSDR worked with state authorities to conduct blood testing and air monitoring. The findings prompted ATSDR to issue a public health advisory on October 20, 1997, advising local, state, and federal officials of potential adverse health impacts from hazardous air emissions. Concern focused

on toluene diisocyanate, a known trigger of obstructive airway disorders. ATSDR also conducted an asthma investigation of children residing within a mile radius and found an elevated prevalence of this disease. During the last three years, ATSDR and the state health department went on to conduct a more comprehensive study of exposure and health in communities across North Carolina, despite strong industry opposition. Current plans include education for local physicians on the study results.

- **Ohio:** City View Center, a shopping center in Cuyahoga County, Ohio, was built on the site of a former landfill. In 2008, air monitors detected explosive levels of methane and other combustible gases. Based on the available information, ATSDR rapidly concluded that an urgent public health hazard was present, and recommended that immediate action be taken. ATSDR's finding provided the Ohio EPA, the Ohio Attorney General, and the U.S. EPA with further grounds for compelling the property owner to install an active vapor extraction system on the landfill to reduce the migration of gases into the shopping center.

Building the science base on toxic chemicals

In crafting CERCLA, Congress assigned an applied research role to ATSDR, which complements the biomedical research role of the National Institute for Environmental Health Sciences (NIEHS). The Agency has combined a program of original research with a longstanding commitment to assembling and making widely available the results of research across the scientific community.

ATSDR's applied research includes toxicologic research. In some cases this research is conducted in-house; for example, ATSDR scientists have developed

innovative techniques of computational toxicology to help rapidly assess hazards of chemical releases. In other cases, ATSDR identifies critical toxicologic data needs and works with other federal agencies, as well as state agencies, universities, and volunteer organizations to fill those needs.

A key feature of ATSDR's scientific research is that it often grows out of site-specific public health activities. For example, as discussed earlier, ATSDR scientists have conducted a series of epidemiological studies in Libby, Montana, to assess the health effects of residents' long-term exposure to asbestos and related minerals.

Still other parts of ATSDR's research advance the science of exposure assessment. For example, in evaluating the health effects of past exposures to trichloroethylene in drinking water at Camp Lejeune, North Carolina, ATSDR scientists confronted a challenge: how to quantify people's past exposure to contaminants. Marines and their families had consumed water over a period of years from a variety of sources on the base that had varying levels of contamination. It became necessary to reconstruct past exposures based on available records—a complex process requiring historical analysis of contaminated drinking water using innovative ground water modeling and statistical techniques. ATSDR scientists developed and refined the necessary techniques with input from panels of experts and peer reviewers.

ATSDR scientists have compiled data and called attention to the problem of hydrogen sulfide exposure near construction and demolition landfills, a result of the degradation of gypsum wallboard; and described and quantified the problem of vapor intrusion, when volatile chemical contaminants in groundwater enter basements.

In addition to original research, ATSDR assembles existing data on toxic chemicals. ATSDR's *Toxicological Profiles* are thorough reviews of available toxicological and epidemiologic information on specific chemicals. They provide screening levels—called Minimal Risk Levels (MRLs)—that ATSDR health assessors and other responders use to identify contaminants and potential health effects that may be of concern at hazardous waste sites. They are widely used references by scientists and members of the public.

Providing Information on Toxic Chemicals to Health Professionals and the Public

A third function of ATSDR is to provide health professional and community education through direct service at the community level, and through broader distribution of materials through the internet and other mechanisms. For example, ATSDR's ToxFAQs is a series of summaries of information about hazardous substances. These are user-friendly documents excerpted from *Toxicological Profiles* and Public Health Statements. Each ToxFAQ serves as a quick and comprehensible guide, with answers to the most frequently asked questions about exposure to hazardous substances found around hazardous waste sites and the effects of exposure on human health.

ATSDR also develops and provides medical education to assist health professionals in diagnosing and treating conditions related to hazardous exposures. An example of this work is ATSDR's *Case Studies in Environmental Medicine*, a series of self-instructional modules that increase clinicians' knowledge of hazardous substances in the environment and aid in the evaluation of potentially exposed patients. ATSDR

has developed other products for the medical community, including *Grand Rounds in Environmental Medicine* and *Patient Education and Care Instruction Sheets*. In addition, ATSDR and EPA established and support university-based Pediatric Environmental Health Specialty Units (PEHSUs) to provide education and consultation for health professionals, families and others about children's environmental health.

Establishing and Maintaining Registries

The fourth function assigned to ATSDR is registries—confidential databases designed to collect, analyze, and track information about groups of people who share defined exposures or illnesses. ATSDR also provides information to registrants about health services and other services available to them through other sources. Below are examples of registries in which ATSDR currently is actively involved:

- *Tremolite Asbestos Registry (TAR)*. This is a registry of people exposed to tremolite asbestos originating in Libby, Montana. The TAR includes contact, demographic, exposure, and health outcome information for each registrant.
- *World Trade Center (WTC) Health Registry*. ATSDR has supported the New York City Health Department in developing the World Trade Center Health Registry. The WTC Health Registry is a comprehensive health survey of persons in the lower Manhattan area of New York City who were most directly exposed to the environmental effects of the events of 9/11/2001.

ATSDR Faces Challenges

While ATSDR has protected public health, advanced science, and provided science-based information since its inception, the Agency faces ongoing significant challenges. These are described below.

Science Cannot Answer All the Questions Posed at Sites

When communities are concerned about hazardous exposures, they want clear, definitive answers, much as an ailing patient wants a clear, definitive diagnosis. Communities often expect that an agency such as ATSDR will arrive on the scene, rapidly assess the situation, and reach unequivocal conclusions. Unfortunately, it is not always possible to reach such conclusions. Among the reasons:

- Accurate exposure data are often unavailable, especially for past exposures. Without accurate exposure data, it is impossible to correlate exposures with health outcomes.
- Accurate health data are often unavailable. While registries for certain diseases are sometimes available, such as cancer and birth defects, statistical information is not routinely collected for most health conditions. Without accurate health data, well matched to exposure data by time and place, it is impossible to correlate exposures with health outcomes.
- Some ailments, such as fatigue and headache, are difficult to measure objectively, and therefore difficult to characterize quantitatively.
- Complete information on the toxic effects of many chemicals is lacking, especially for such outcomes as neurobehavioral, developmental, and

reproductive function, and especially following the types of long-term, low-dose exposures which occur in many communities.

- Toxicologic data usually refer to one chemical at a time, but in real life, people frequently are exposed to mixtures of chemicals. Scientific data on such mixed exposures are scanty.
- Many communities have relatively small populations, which are difficult to study for reasons of statistical power. It is for this reason that important health findings typically emerge from large studies. The Framingham Heart Study enrolled nearly 15,000 people over more than 50 years, and the National Children's Study plans to follow 100,000 children from before birth to age 21. In a community with a few hundred people, the opportunities for robust research are far more limited.

In summary, definitive answers sometimes do not exist, due to the inherent uncertainties of science, the limits of available data, the limits of small-area epidemiology, and the lack of appropriate public health tools.

Moreover, concerned citizens sometimes have honest disagreements with the results of ATSDR assessments. While ATSDR scientists use standardized methods to assure objective results, these sometimes yield conclusions that are not expected by or acceptable to community members. This is understandable. Community members, who are justifiably concerned about unwarranted exposures from hazardous wastes, may reject the concept of "levels of risk" when what they want is zero exposure. For example, in some situations, even where a source of toxic chemicals is identified, careful measurement may indicate that people absorb little or none of the toxic chemical. Such findings can be unwelcome to people who desire nothing less than

complete elimination of the contaminant. In some cases, ATSDR and counterpart state agencies have repeated investigations several times, when negative conclusions were challenged, only to replicate the original findings—and consequently to face accusations of indifference or worse. Such situations are difficult and frustrating, both for dedicated ATSDR staff and for community residents who earnestly seek solutions to their problems.

Heavy Emphasis on Hazardous Waste Sites Relative to Other Exposure Routes

In the early 1980s, following the national attention generated by Love Canal, there was considerable focus on hazardous waste sites. CERCLA (including its public health component, ATSDR) reflected this focus. However, a variety of other sources, such as food, consumer products, water, and air, are well recognized, and for many Americans these, not hazardous waste sites, are the predominant pathways of exposure to chemicals.

Workload Challenges

With tens of thousands of hazardous waste sites around the nation, and with countless other sources of chemical exposures, ATSDR faces a potential workload that exceeds its current staffing level. Though ATSDR's on-board FTE strength has fallen from 481 in FY 2002 to 306 in FY 2008, without a reduction in workload during that period, we continually strive to meet our mission through increased efficiencies and productivity and the efforts of our dedicated staff.

Limited Research Capacity Relative to Extensive Data Needs

ATSDR has a specific challenge with regard to its research capacity. ATSDR has carried out a limited program of targeted research, and has worked to identify data gaps and compile research from industry, academia, and other agencies. However, with the extensive data needs related to toxic exposures, this remains an ongoing challenge for the Agency.

Ongoing Efforts to Improve ATSDR

ATSDR is undertaking major efforts to improve its performance and to meet the challenges outlined above. These efforts range broadly, and can be described in four categories: review of the overall approach to carrying out our mission, review of science administration processes, review of management practices, and improvement of certain other procedures.

Review of the Overall Approach to Carrying Out Our Mission

Careful consideration of ATSDR's mission has revealed important challenges, as described above. After almost 25 years of operation with a relatively unchanged portfolio, these challenges justify re-examination of ATSDR's approach.

That re-examination is made more compelling by the many changes that have occurred in chemical science and technology during the quarter century of ATSDR's existence. Together these changes have revolutionized the context within which ATSDR works to protect the public from chemical hazards.

- *Analytic chemistry* tools now permit measurement of unprecedented low levels of chemical exposures.
- *Biomonitoring*, the direct measurement of chemicals in people's body fluids, has advanced tremendously, enabling scientists to identify and quantify exposures.
- The *genetic revolution* and the emergence of the “omics” (genomics, proteomics, metabolomics) offer the potential to study gene-environment interactions, and to understand exposures and health effects at an individual level.
- *Toxicologic advances* such as computational and in vitro methods offer enormous opportunities for insight into chemical action, more rapidly and at less expense than ever before.
- *Green chemistry* represents an innovative approach that seeks to design and produce environmentally safe chemicals, avoiding the toxic effects on which ATSDR's work has focused.

Together, these considerations make clear that a re-evaluation of ATSDR's approach is timely and appropriate. Moreover, it is clear that ATSDR's responsibility—protecting the public from toxic chemicals—does not rest with ATSDR alone. Many other agencies share in this responsibility, and many other stakeholders—industry, environmental groups, community groups, professional associations—play essential roles.

In fact, review of the nation's efforts to protect the public from chemical hazards over the last four decades—an effort that includes ATSDR but extends well beyond—yields compelling conclusions. As a nation we have achieved some notable successes, but we remain limited in our ability to assemble needed data, draw consistent

conclusions, launch protective actions, and inform stakeholders. Various agencies and organizations—governmental and nongovernmental, regulatory and non-regulatory—carry out public health functions related to chemical exposures. These functions include exposure and health surveillance, investigation of incidents and releases, emergency preparedness and response, regulation, research, and education. But improvements can always be made to increase coordination. Some key responsibilities are not carried out adequately, while others are needlessly redundant. ATSDR's mission and functions must be considered within this broader context.

In recognition of these realities, ATSDR and its companion Center at the CDC, the National Center for Environmental Health (NCEH), have initiated the *National Conversation on Public Health and Chemical Exposures*. This process will convene a wide range of stakeholders over one to two years, including community groups, industry, environmental groups, public health groups, and others. Early responses from various stakeholder groups has been highly supportive. We expect this effort to yield an action agenda for revitalizing the public health approach to chemical exposures. Part of this agenda will be direction for ATSDR as it moves into its second quarter century.

Review of Science Administration Processes

In 2008, this Committee raised questions about the adequacy of existing procedures for internal clearance and external peer review of scientific documents at ATSDR. In response, NCEH/ATSDR asked the Board of Scientific Counselors (BSC), an external expert group charged with advising the Center on matters of science and science policy, to assess these procedures and to suggest any needed improvements.

The BSC's overall conclusion was that the existing procedures generally function well to achieve quality-assurance goals. The BSC report identified and discussed several concerns and recommendations. A draft report was presented at the November 2008 meeting of the BSC and the BSC approved the final report in early March 2009. In the meantime, ATSDR has made specific improvements. For example, an independent peer review process maintained in one Division now is subject to additional oversight consistent with Center-wide procedures; the staff of the the NCEH/ATSDR Office of Science has been enhanced through additional hiring, and review procedures have been reiterated to supervisors to help assure that all staff scientists are aware of them.

Review of Management Practices

In 2008, this Committee also raised questions about management practices at ATSDR. In response, CDC commissioned an independent review of NCEH/ATSDR management practices. NCEH/ATSDR was compared to two other CDC Centers and to data from government-wide management-practice surveys, to permit conclusions about areas of particular need within NCEH/ATSDR.

In general, NCEH/ATSDR management practices were found to be comparable to those across CDC. Several opportunities for improvement were identified. Examples include: increasing management awareness of, engagement with, and accountability to the human capital strategy; improving the use of existing human capital systems including human resource data systems and processes, performance management, and recruitment strategies; and improving the agency capability to constructively manage conflict and enable better program and scientific results. In addition, NCEH/ATSDR

leadership, in consultation with those in supervisory positions at CDC's Coordinating Center for Environmental Health and Injury Prevention (that NCEH/ATSDR is a part of), identified other opportunities for management improvement. From these, NCEH/ATSDR developed a broad plan for management improvement, and began implementing that plan in late 2008. The plan has five areas of focus: (1) unifying and revitalizing our mission; (2) human capital strategy; (3) human capital practices; (4) employee relations; and (5) quality of work life. Below are some examples of steps being taken to improve management.

- Initiated strategic planning in each Division, as a step in engaging employees in efforts to achieve shared goals;
- Promote training of managers in team-building, leveraging diversity, complaint and conflict management, alternate dispute resolution, and conduct and disciplinary actions;
- Adopted Issues Management Tracking software in the NCEH/ATSDR Office of Policy, Planning, and Evaluation, to track issues and provide a mechanism for senior management to triage scientific issues to the appropriate office, and to maintain oversight until project completion;
- Initiated a system of job rotation within NCEH/ATSDR to allow staff to move to different positions for short periods (one to three months), to enhance staff skills, facilitate collaboration and innovative partnering within these entities, and improve morale;
- Initiated several activities to attract new public health professionals into entry-level positions, to ensure that the needs of the future will be met.

Improvement of Specific Procedures

Finally, NCEH/ATSDR continues to make a wide range of changes in specific procedures, in order to improve performance. Four examples, each specific to ATSDR and each taken from the last year, are illustrative.

- *The wording of Public Health Assessment conclusions:* ATSDR has for many years used five standard categories of conclusions in its Public Health Assessments: “Urgent Public Health Hazard,” “Public Health Hazard,” “Indeterminate Public Health Hazard,” “No Apparent Public Health Hazard,” and “No Public Health Hazard.” Concerns were raised about this terminology. In particular, the “No Apparent Public Health Hazard” conclusion was seen by some communities as invalidating their concerns—an understandable reaction, since it was used in some cases of low but non-zero exposure, where a finding of zero risk would be hard to support scientifically. ATSDR reviewed these categories and developed a revised classification that more clearly communicates risk. The new conclusions replace telegraphic phrases with explanatory language, featuring specific information relative to the substance, the pathway, the time period, and the place. For example:

“ATSDR concludes that touching, breathing, or accidentally eating zinc found in soil and dust at the XYZ site is not expected to harm people’s health because zinc levels in soil are below levels of health concern.”

replaces

“This site posed no apparent public health concern.”

- *Process for updating Toxicologic Profiles.* Since its inception ATSDR has produced *Toxicologic Profiles* by reviewing the accumulated literature at a

particular point in time, culminating in publication of a monograph that promptly commenced to go out of date. The *Profile* would be updated some years later with a next edition, which would rather soon become stale. ATSDR is replacing this “book publication” model with a more contemporary model based on ongoing, web-based updates of relevant sections as new material becomes available.

- *Improved data management.* ATSDR requires a sophisticated data management system to track its large number of sites and activities. A custom-designed system, HazDat, was used for this purpose for years, but became obsolete. In response, ATSDR created Sequoia, a new database system, and launched it in February 2008. Sequoia is a scientific and administrative database developed to provide access to information on the release of hazardous substances from Superfund sites or from emergency events and to provide access to information on the effects of hazardous substances on the health of human populations. Sequoia assembles information on site characteristics; site activities; site events; contaminants found; contaminant media; basis for concentration levels, such as maximum, mean, or other descriptor; exposure pathways; impact on the population; ATSDR public health hazard categorization; ATSDR recommendations; interventions to be taken, as described in the public health action plan; and a record of intervention effectiveness. Sequoia should enable better tracking and attainment of performance measures, provide data to support Healthy People objectives, and provide accurate, comprehensive data to support

the analysis and identification of site-related trends and the identification of appropriate public health interventions and studies

- *Shift in product lines:* The standard ATSDR product over the years has been the Public Health Assessment. These are thoroughly researched documents, based on extensive data reviews, and often require one to two years to complete—a delay that was unacceptable to some communities. However, community health concerns are often fairly specific. By using a more targeted approach such as a Health Consultation, Exposure Investigation, or Technical Assist to address those specific concerns, we can respond more rapidly, address public concerns more directly, and conserve scarce resources for instances when a full Public Health Assessment is necessary to address more complex exposure scenarios.

Conclusion

ATSDR is an agency with a relatively short history, but a history that spans much of this nation's response to health concerns resulting from hazardous environmental exposures.

Beginning with enactment of CERCLA legislation, ATSDR scientists have worked to define a new domain of Environmental Public Health at the community level, often working beyond the reach of the standard tools of public health. Some challenges were apparent initially: addressing questions for which there were no straightforward answers, working in charged settings, and working across cultural and institutional barriers. With time, other challenges have emerged: integration across multiple

chemical exposure pathways; the rapid advance of science, leading to needed changes in Agency procedures; and allocating resources effectively.

While there have been setbacks along the way, ATSDR has worked diligently to address the needs and concerns of communities and the people in those communities. Few Federal agencies have a stronger track record in working “on the ground” serving local communities. The Agency has developed innovative tools and skill sets in carrying out its mission. It has assembled a strong record of accomplishment—protecting health near hazardous waste sites, advancing science, and educating health professionals and the public.

Nevertheless I recognize the need for ongoing performance evaluation and constant improvement. This Committee has pointed out several areas in which improvement may be needed. As described in this testimony, ATSDR is taking aggressive action to improve in four key domains: review of the overall approach to carrying out our mission, review of science administration processes, review of management practices, and improvement of specific procedures.

I am committed to ongoing improvement in every aspect of ATSDR’s work, enabling us to achieve the goals assigned by Congress and deserved by the American public: protecting public health from dangerous chemical exposures.