



# Michigan Hazardous Substances Emergency Events Surveillance

## What is HSEES?

The Hazardous Substances Emergency Events Surveillance (HSEES) system was established by the federal Agency for Toxic Substances and Disease Registry (ATSDR) to collect and analyze information about acute releases of hazardous substances and threatened releases that result in a public health action such as an evacuation. The goal of HSEES is to reduce injury and death from hazardous substances events among first responders, employees, and the general public.

## Which states currently participate in HSEES?

Fifteen state health departments currently have cooperative agreements with ATSDR to participate in HSEES. The Michigan Department of Community Health (MDCH) first received funding for HSEES in October 2004, with data collection beginning in January 2005. The other states include Colorado, Florida, Iowa, Louisiana, Minnesota, Missouri, New Jersey, New York, North Carolina, Oregon, Texas, Utah, Washington, and Wisconsin.

## How are HSEES events identified in Michigan?

A number of laws and regulations require reporting of hazardous substance releases to state and federal agencies by companies, transportation carriers, hazardous materials (HazMat) first responders and others. In addition, several state agencies in Michigan maintain hotlines for individuals to report HazMat incidents. State and federal agencies forward the reports to the Michigan HSEES program at MDCH. These agencies include the Michigan Departments of Environmental Quality, Agriculture, Labor and Economic Growth, and State Police, and the federal National Response Center and Department of Transportation.

## What types of events are included in HSEES?

HSEES events are defined as releases or threatened releases of at least one hazardous substance. A substance is considered hazardous if it might reasonably be expected to cause adverse human health effects. Releases of petroleum products only are excluded from HSEES by federal law.

## What data elements are captured in HSEES?

The HSEES protocol followed by all participating states includes collection and data entry of detailed information about each event. Data are entered by participating state health departments into a web-based application that enables timely access by states and ATSDR for data analysis. Data include the following:

- Substance(s) involved, including quantities;
- Time, date, and day of the week of the event;
- Event type (fixed-facility or transportation-related event);
- Geographic location where the event occurred;
- Land use and population information in the event location to estimate the number of persons potentially exposed;
- Factors contributing to the release such as equipment failure, human error, weather, or intentional act;

- Information about injured persons: age, sex, type and extent of injuries, distance from spill, population group (employee, general public, responder, student), and types of protective equipment used;
- Actions taken to mitigate the impacts of the release on the environment and human health, including decontamination, evacuation and sheltering in-place.

### What have the HSEES data shown thus far?

The HSEES system captures data on approximately 9,000 events annually. Over the years the national data have remained fairly consistent, although data from participating states have varied. Overall, fixed-facility events represent about 70 - 75% and transportation-related events about 25 - 30% of all reported events. Most events occur on weekdays between 6 a.m. and 6 p.m. The most frequent causal factors for fixed-facility events are equipment failure and operator error. Most fixed-facility releases involve a vessel used for processing. Other frequent locations for events are piping, material loading and unloading sites, and above ground storage areas. Over 90% of all events reported to HSEES involve the release or threatened release of only one hazardous substance.

Of population groups potentially affected, employees are most frequently injured, followed by the general public, first responders, and students. Respiratory irritation and eye irritation are the most commonly reported injuries. The majority of victims are treated at a hospital for their injuries and then released. The vast majority of injured persons do not wear personal protective equipment (PPE), or they wear PPE that is not protective against chemicals.

### How are HSEES data used?

The HSEES system generates information that is used by participating states to conduct prevention activities. Some examples include

- Providing data to establish and maintain protection areas for municipal water systems;
- Providing data for hazardous materials training courses, including data on the risk of injury from methamphetamine labs;
- Providing data by county on spills to assist with the proper placement of HazMat teams and equipment;
- Distributing fact sheets on frequently spilled chemicals or chemicals that cause a disproportionate number of injuries such as chlorine and ammonia;
- Distributing newsletters to industry, responder, and environmental groups;
- Providing presentations of data to state and local emergency planners;
- Providing presentations of data to industries that account for a significant number of spills to help them plan prevention strategies.

HSEES data can also be used by the public to conduct analyses for research and prevention purposes. The public use HSEES data file contains information on events that occurred in 17 participating HSEES states from 1996-2001. (Michigan was not participating during that time period.) The public use HSEES data set can be accessed at [http://www.atsdr.cdc.gov/HS/HSEES/Public\\_Use\\_File.html](http://www.atsdr.cdc.gov/HS/HSEES/Public_Use_File.html)

### Who are the contacts for HSEES?

#### Michigan HSEES

Martha Stanbury, MSPH  
 Environmental and Occupational Epidemiology  
 Michigan Department of Community Health  
 P.O. Box 30195  
 3423 N. Martin Luther King Jr. Blvd  
 Lansing, MI 48909  
 Phone: 517-335-8364  
 Email: [stanburym@michigan.gov](mailto:stanburym@michigan.gov)  
[www.michigan.gov/mdch-toxics](http://www.michigan.gov/mdch-toxics)

#### HSEES at ATSDR

Maureen Orr, MS  
 HSEES Coordinator  
 ATSDR  
 1600 Clifton Rd. NE, Mailstop E-31  
 Atlanta, GA 30333  
 Phone: 404-498-0559  
 Email: [morr@cdc.gov](mailto:morr@cdc.gov)  
[www.atsdr.cdc.gov/HS/HSEES/](http://www.atsdr.cdc.gov/HS/HSEES/)