



# Environmental Hazards and Health Effects Program: Chemical Emergency Preparedness and Response Activities

## THE PUBLIC HEALTH PROBLEM

The release of a chemical weapon of mass destruction (WMD) could result in hundreds or thousands of casualties, and the source of the release likely would be obvious to public health officials. However, the source of an accidental chemical release, or the hidden, intentional contamination of food or drinking water, would be more difficult to identify. During the past century, chemical releases accounted for as many as 50% of the 350 WMD incidents that have occurred worldwide, according to the Monterey Institute of International Studies, which maintains an open-source database of criminal and terrorist incidents involving WMD agents.

## WHAT WE ARE DOING TO ADDRESS THESE CONCERNS

Various programs at the Centers for Disease Control and Prevention (CDC) work to detect, respond to, and prevent human illness caused by a chemical release. CDC's Environmental Hazards and Health Effects Program (EHHE) is involved in the following activities:

- **Supporting an early warning surveillance system** that monitors and analyzes real-time data from the nation's poison-control centers, to detect intentional and unintentional chemical-poisoning events. The Toxic Exposure Surveillance System (TESS), a national database maintained by the American Association of Poison Control Centers (AAPCC), receives data from individual poison-control centers. EHHE and the Agency for Toxic Substances and Disease Registry are collaborating with AAPCC in using TESS as a surveillance tool for possible chemical events. Early detection of such events can facilitate more immediate and appropriate response to toxin- or chemical-related public health threats.
- **Providing medical toxicological expertise and clinical guidance** to local, state, and federal agencies during national and international chemical-terrorism events. For example, after the intentional placement of ricin in a threatening letter found in the Greenville, South Carolina, postal system in October 2003, medical toxicologists from EHHE
  - traveled to the scene and assisted state and county officials with the epidemiologic investigation;
  - assisted the National Institute for Occupational Safety and Health with environmental sampling;
  - developed ricin-specific documents—including fact sheets and case definitions for public health surveillance—for the general public, clinicians, and public health officials;
  - published results of the investigation (MMWR Nov. 21, 2003;52[46]: 1129-31; <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5246a5.htm>); and
  - posted a Web cast, titled "Recognition, Management and Surveillance of Ricin-Associated Illness," at <http://www.phppo.cdc.gov/phtn/webcast/ricin/default.asp>.
- **Creating chemical-specific resources** for clinicians, public health officials, and the public, and disseminating that information through venues such as the CDC Emergency Preparedness and Response Web site (<http://www.bt.cdc.gov/agent/agentlistchem.asp>). These resources include
  - fact sheets, which explain what each chemical is, where it can be found, how an individual could be exposed, and possible adverse health effects resulting from exposure;

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- case definitions, which combine clinical descriptions with laboratory criteria to help health care providers and public health professionals classify cases of exposure to a specific chemical;
- links to other publications, such as "Recognition of Illness Associated with Exposure to Chemical Agents—United States 2003" (MMWR October 3, 2003; 52[39]:938-40; <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5239a3.htm>); and
- clinical syndromes, which describe signs and symptoms of agent-specific poisoning for various chemicals. Health care providers can use clinical syndromes to help identify poisoned patients.
- **Developing educational Web/satellite broadcasts** on subjects such as
  - recognizing epidemiologic clues that suggest illness associated with a covert chemical release (<http://www.phppo.cdc.gov/phtn/webcast/chemical-exp/default.asp>), and
  - recognizing gastrointestinal illness possibly associated with exposure to hazardous chemicals (available in March 2005 at <http://www.phppo.cdc.gov/phtn/default.asp>).
- **Building collaborative relationships at all levels of public health, medicine, and government**, (including the Food and Drug Administration, the Federal Bureau of Investigation, and the U.S. Environmental Protection Agency), to improve capacity to prevent and respond to chemical emergencies.
- **Providing "on-call" experts** in the field of medical toxicology and epidemiology, for rapid consultation and possible deployment during major events such as the G-8 Summit in Sea Island, Georgia.
- **Cooperating with states and other partners**, including the American Red Cross and the Interstate Chemical Terrorism Conference, **to develop communication strategies**.

**For more information, please contact:**

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