Are You Ready?

An In-depth Guide to Citizen Preparedness

FEMA

Are You Ready? An In-depth Guide to Citizen Preparedness

IS-22 August 2004

Table of Contents

See FEMA - Are You Ready - Part 1

3

Technological Hazards

Technological hazards include hazardous materials incidents and nuclear power plant failures. Usually, little or no warning precedes incidents involving technological hazards. In many cases, victims may not know they have been affected until many years later. For example, health problems caused by hidden toxic waste sites—like that at Love Canal, near Niagara Falls, New York—surfaced years after initial exposure.

The number of technological incidents is escalating, mainly as a result of the increased number of new substances and the opportunities for human error inherent in the use of these materials.

Use Part 3 to learn what actions to include in your family disaster plan to prepare for and respond to events involving technological hazards. Learn how to use, store, and dispose of household chemicals in a manner that will reduce the potential for injury to people and the environment.

When you complete Part 3, you will be able to:

- Recognize important terms.
- Take protective measures for technological disasters.
- Know what actions to take if an event occurs.
- Identify resources for more information about technological hazards.

3.1

Hazardous Materials Incidents

Chemicals are found everywhere. They purify drinking water, increase crop production, and simplify household chores. But chemicals also can be hazardous to humans or the environment if used or released improperly. Hazards can occur during production, storage, transportation, use, or disposal. You and your community are at risk if a chemical is used unsafely or released in harmful amounts into the environment where you live, work, or play.

Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites.

Take Protective Measures

Before a Hazardous Materials Incident

Many communities have Local Emergency Planning Committees (LEPCs) whose responsibilities include collecting information about hazardous materials in the community and making this information available to the public upon request. The LEPCs also are tasked with developing an emergency plan to prepare for and respond to chemical emergencies in the community. Ways the public will be notified and actions the public must take in the event of a release are part of the plan. Contact the LEPCs to find out more about chemical hazards and what needs to be done to minimize the risk to individuals and the community from these materials. The local emergency management office can provide contact information on the LEPCs.

You should add the following supplies to your disaster supplies kit:

- Plastic sheeting.
- Duct tape.
- Scissors.

Review

See Section 1.3: Assemble a Disaster Supplies Kit

During a Hazardous Materials Incident

Listen to local radio or television stations for detailed information and instructions. Follow the instructions carefully. You should stay away from the area to minimize the risk of contamination. Remember that some toxic chemicals are odorless.

If you are:	Then:
Asked to evacuate	Do so immediately.
Caught Outside	Stay upstream, uphill, and upwind! In general, try to go at least one-half mile (usually 8-10 city blocks) from the danger area. Do not walk into or touch any spilled liquids, airborne mists, or condensed solid chemical deposits.
In a motor vehicle	Stop and seek shelter in a permanent building. If you must remain in your car, keep car windows and vents closed and shut off the air conditioner and heater.
Requested to stay indoors	• Close and lock all exterior doors and windows. Close vents, fireplace dampers, and as many interior doors as possible. • Turn off air conditioners and ventilation systems. In large buildings, set ventilation systems to 100 percent recirculation so that no outside air is drawn into the building. If this is not possible, ventilation systems should be turned off. • Go into the pre-selected shelter room. This room should be above ground and have the fewest openings to the outside. • Seal the room by covering each window, door, and vent using plastic sheeting and duct tape. • Use material to fill cracks and holes in the room, such as those around pipes.

Shelter Safety for Sealed Rooms

Ten square feet of floor space per person will provide sufficient air to prevent carbon dioxide build-up for up to five hours, assuming a normal breathing rate while resting.

However, local officials are unlikely to recommend the public shelter in a sealed room for more than 2-3 hours because the effectiveness of such sheltering diminishes with time as the contaminated outside air gradually seeps into the shelter. At this point, evacuation from the area is the better protective action to take.

Also you should ventilate the shelter when the emergency has passed to avoid breathing contaminated air still inside the shelter.

After a Hazardous Materials Incident

The following are guidelines for the period following a hazardous materials incident:

- Return home only when authorities say it is safe. Open windows and vents and turn on fans to provide ventilation.
- Act quickly if you have come in to contact with or have been exposed to hazardous chemicals. Do the following:
  - Follow decontamination instructions from local authorities. You may be advised to take a thorough shower, or you may be advised to stay away from water and follow another procedure.

  - Seek medical treatment for unusual symptoms as soon as possible.
  - Place exposed clothing and shoes in tightly sealed containers. Do not allow them to contact other materials. Call local authorities to find out about proper disposal.
  - Advise everyone who comes in to contact with you that you may have been exposed to a toxic substance.
- Find out from local authorities how to clean up your land and property.
- Report any lingering vapors or other hazards to your local emergency services office.
- Follow the instructions for recovering from a disaster in Part 5.

3.2

Household Chemical Emergencies

Nearly every household uses products containing hazardous materials or chemicals.

Cleaning Products

- Oven cleaners
- Drain cleaners
- Wood and metal cleaners and polishes
- Toilet cleaners
- Tub, tile, shower cleaners
- Bleach (laundry)
- Pool chemicals

Automotive Products

- Motor oil
- Fuel additives
- Carburetor and fuel injection cleaners
- Air conditioning refrigerants
- Starter fluids
- Automotive batteries
- Transmission and brake fluid
- Antifreeze

Lawn and Garden Products

- Herbicides
- Insecticides
- Fungicides/wood preservatives

Indoor Pesticides

- Ant sprays and baits
- Cockroach sprays and baits
- Flea repellents and shampoos
- Bug sprays
- Houseplant insecticides
- Moth repellents
- Mouse and rat poisons and baits

Workshop/Painting Supplies

- Adhesives and glues
- Furniture strippers
- Oil- or enamel-based paint
- Stains and finishes
- Paint thinners and turpentine
- Paint strippers and removers
- Photographic chemicals
- Fixatives and other solvents

Miscellaneous

- Batteries
- Mercury thermostats or thermometers
- Fluorescent light bulbs
- Driveway sealer

Other Flammable Products

- Propane tanks and other compressed gas cylinders
- Kerosene
- Home heating oil
- Diesel fuel
- Gas/oil mix
- Lighter fluid

Although the risk of a chemical accident is slight, knowing how to handle these products and how to react during an emergency can reduce the risk of injury.

Take Protective Measures

Before a Household Chemical Emergency

The following are guidelines for buying and storing hazardous household chemicals safely:

- Buy only as much of a chemical as you think you will use. Leftover material can be shared with neighbors or donated to a business, charity, or government agency. For example, excess pesticide could be offered to a greenhouse or garden center, and theater groups often need surplus paint. Some communities have organized waste exchanges where household hazardous chemicals and waste can be swapped or given away.
- Keep products containing hazardous materials in their original containers and never remove the labels unless the container is corroding. Corroding containers should be repackaged and clearly labeled.
- Never store hazardous products in food containers.
- Never mix household hazardous chemicals or waste with other products. Incompatibles, such as chlorine bleach and ammonia, may react, ignite, or explode.

Take the following precautions to prevent and respond to accidents:

- Follow the manufacturer's instructors for the proper use of the household chemical.
- Never smoke while using household chemicals.
- Never use hair spray, cleaning solutions, paint products, or pesticides near an open flame (e.g., pilot light, lighted candle, fireplace, wood burning stove, etc.) Although you may not be able to see or smell them, vapor particles in the air could catch fire or explode.

- Clean up any chemical spill immediately. Use rags to clean up the spill. Wear gloves and eye protection. Allow the fumes in the rags to evaporate outdoors, then dispose of the rags by wrapping them in a newspaper and placing them in a sealed plastic bag in your trash can.
- Dispose of hazardous materials correctly. Take household hazardous waste to a local collection program. Check with your county or state environmental or solid waste agency to learn if there is a household hazardous waste collection program in your area.

Learn to recognize the symptoms of toxic poisoning, which are as follows:

- Difficulty breathing.
- Irritation of the eyes, skin, throat, or respiratory tract.
- Changes in skin color.
- Headache or blurred vision.
- Dizziness.
- Clumsiness or lack of coordination.
- Cramps or diarrhea.

Be prepared to seek medical assistance:

- Post the number of the emergency medical services and the poison control center by all telephones. In an emergency situation, you may not have time to look up critical phone numbers. The national poison control number is (800)222-1222.

During a Household Chemical Emergency

If there is a danger of fire or explosion:

- Get out of the residence immediately. Do not waste time collecting items or calling the fire department when you are in danger. Call the fire department from outside (a cellular phone or a neighbor's phone) once you are safely away from danger.
- Stay upwind and away from the residence to avoid breathing toxic fumes.

If someone has been exposed to a household chemical:

- Find any containers of the substance that are readily available in order to provide requested information. Call emergency medical services.
- Follow the emergency operator or dispatcher's first aid instructions carefully. The first aid advice found on containers may be out of date or inappropriate. Do not give anything by mouth unless advised to do so by a medical professional.

Discard clothing that may have been contaminated. Some chemicals may not wash out completely.

Checking Your Home

There are probably many hazardous materials throughout your home. Take a tour of your home to see where these materials are located. Use the list of common hazardous household items presented earlier to guide you in your hunt. Once you have located a product, check the label and take the necessary steps to ensure that you are using, storing, and disposing of the material according to the manufacturer's directions. It is critical to store household chemicals in places where children cannot access them. Remember that products such as aerosol cans of hair spray and deodorant, nail polish and nail polish remover, toilet bowl cleaners, and furniture polishes all fall into the category of hazardous materials.

For More Information

If you require more information about any of these topics, the following are resources that may be helpful.

FEMA Publications

Household Hazardous Materials: A Guide for Citizens. IS 55. An independent study resource for parents and teachers. Web-based safety program focused on reducing the number of deaths and injuries in the home. Available online at http://training.fema.gov/emiweb/is/is55.asp

Chemical Emergencies. A pamphlet promoting awareness of chemical hazards in the home, how to prevent them, and what to do if exposed. Available online at www.fema.gov/pdf/rrr/talkdiz/chemical.pdf

Backgrounder: Hazardous Materials. 0.511. Information sheet available online at www.fema.gov/hazards/hazardousmaterials/hazmat.shtm

USFA: Factsheet: Baby-sitters Make the Right Call to EMS. 0510. Available online at www.usfa.fema.gov/public/factsheets/mtrc.shtm

Other Publications

American Red Cross

Chemical Emergencies. Extensive document describing the hazards of household chemicals and what to do in an emergency. Available online at www.redcross.org/services/disaster/0,1082,0_581_,00.html

3.3

Nuclear Power Plants

Nuclear power plants use the heat generated from nuclear fission in a contained environment to convert water to steam, which powers generators to produce electricity. Nuclear power plants operate in most states in the country and produce about 20 percent of the nation's power. Nearly 3 million Americans live within 10 miles of an operating nuclear power plant.

Although the construction and operation of these facilities are closely monitored and regulated by the Nuclear Regulatory Commission (NRC), accidents are possible. An accident could result in dangerous levels of radiation that could affect the health and safety of the public living near the nuclear power plant.

Local and state governments, federal agencies, and the electric utilities have emergency response plans in the event of a nuclear power plant incident. The plans define two "emergency planning zones." One zone covers an area within a 10-mile radius of the plant, where it is possible that people could be harmed by direct radiation exposure. The second zone covers a broader area, usually up to a 50-mile radius from the plant, where radioactive materials could contaminate water supplies, food crops, and livestock.

The potential danger from an accident at a nuclear power plant is exposure to radiation. This exposure could come from the release of radioactive material from the plant into the environment, usually characterized by a plume (cloud-like formation) of radioactive gases and particles. The major hazards to people in the vicinity of the plume are radiation exposure to the body from the cloud and particles deposited on the ground, inhalation of radioactive materials, and ingestion of radioactive materials.

Radioactive materials are composed of atoms that are unstable. An unstable atom gives off its excess energy until it becomes stable. The energy emitted is radiation. Each of us is exposed to radiation daily from natural sources, including the Sun and the Earth. Small traces of radiation are present in food and water. Radiation also is released from man-made sources such as X-ray machines, television sets, and microwave ovens. Radiation has a cumulative effect. The longer a person is exposed to radiation, the greater the effect. A high exposure to radiation can cause serious illness or death.

Minimizing Exposure to Radiation

- **Distance** - The more distance between you and the source of the radiation, the better. This could be evacuation or remaining indoors to minimize exposure.
- **Shielding** - The more heavy, dense material between you and the source of the radiation, the better.
- **Time** - Most radioactivity loses its strength fairly quickly.

If an accident at a nuclear power plant were to release radiation in your area, local authorities would activate warning sirens or another approved alert method. They also would instruct you through the Emergency Alert System (EAS) on local television and radio stations on how to protect yourself.

Know the Terms

Familiarize yourself with these terms to help identify a nuclear power plant emergency:

Notification of Unusual Event
A small problem has occurred at the plant. No radiation leak is expected. No action on your part will be necessary.

Alert
A small problem has occurred, and small amounts of radiation could leak inside the plant. This will not affect you and no action is required.

Site Area Emergency
Area sirens may be sounded. Listen to your radio or television for safety information.

General Emergency
Radiation could leak outside the plant and off the plant site. The sirens will sound. Tune to your local radio or television station for reports. Be prepared to follow instructions promptly.

Take Protective Measures

Before a Nuclear Power Plant Emergency

Obtain public emergency information materials from the power company that operates your local nuclear power plant or your local emergency services office. If you live within 10 miles of the power plant, you should receive these materials yearly from the power company or your state or local government.

During a Nuclear Power Plant Emergency

The following are guidelines for what you should do if a nuclear power plant emergency occurs. Keep a battery-powered radio with you at all times and listen to the radio for specific instructions. Close and lock doors and windows.

If you are told to evacuate...	*If you are advised to remain indoors...*
• Keep car windows and vents closed; use re-circulating air.	• Turn off the air conditioner, ventilation fans, furnace, and other air intakes. • Go to a basement or other underground area, if possible. • Do not use the telephone unless absolutely necessary.

If you expect you have been exposed to nuclear radiation:

- Change clothes and shoes.
- Put exposed clothing in a plastic bag.
- Seal the bag and place it out of the way.
- Take a thorough shower.

Keep food in covered containers or in the refrigerator. Food not previously covered should be washed before being put in to containers.

After a Nuclear Power Plant Emergency

Seek medical treatment for any unusual symptoms, such as nausea, that may be related to radiation exposure.

Follow the instructions for recovering from a disaster in Part 5.

Technological Hazards Knowledge Check

Answer the following questions. Check your responses with the answer key below.

1. What are some things you can do to reduce the threat from hazardous materials in your home?

2. What should you do if you are caught at the scene of a hazardous materials incident?

3. What is the telephone number for the National Poison Control Center?

4. What are three ways to minimize radiation exposure?

5. Are there special warning requirements for nuclear power plants? If so, what are they?

6. What does it mean when a nuclear power plant has issued a general emergency? What actions should you take?

7. If you are at home and instructed to shelter-in-place because of a chemical release, where will you go?

8. If you are in a car and unable to seek shelter in a building and a chemical release occurs, you should?

9. Who can you contact to find out about hazardous materials stored in your community?

10. What are some common placess hazardous materials may be present in the community?

Answers:

1. a. Learn to identify hazardous materials.
   b. Follow manufacture's instructions for storage, use, and disposal.
   c. Never store hazardous products in food containers.
   d. Keep products in original containers unless the container is corroding.
   e. Never mix household hazardous chemicals or waste with other products.
   f. Take household hazardous waste to a local collection program.
   g. Never smoke while using household chemicals.
   h. Clean up spills immediately with rags.
   i. Buy only as much of a chemical as you think you will use.

2. a. Do not walk into or touch any spilled liquids, airborne mists, or condensed solid chemical deposits.
   b. Stay upstream, uphill, and upwind! In general, try to go at least one-half mile (usually 8-10 city blocks) from the danger area.

3. (800)222-1222

4. Distance, shielding, and time.

5. Yes. Nuclear power plants are required to install sirens or other approved warning systems.

6. Radiation could leak outside the plant and off the plant site. The sirens will sound. Tune to local radio or television station for reports. Be prepared to follow instructions promptly.

7. An above ground room with the fewest exterior doors and windows.

8. Keep car windows and vents closed and shut off the air conditioner or heater.

9. Local Emergency Planning Committee (LEPC). The local emergency management office can provide contact information for the LEPCs.

10. Agricultural operations and farms, auto service stations and junkyards, chemical manufacturing and storage facilities, construction sites, dry cleaners, electronics manufactures, paint shops, hospitals, hazardous materials waste sites, and transportation routes.

4 Terrorism

Throughout human history, there have been many threats to the security of nations. These threats have brought about large-scale losses of life, the destruction of property, widespread illness and injury, the displacement of large numbers of people, and devastating economic loss.

Recent technological advances and ongoing international political unrest are components of the increased risk to national security.

Use Part 4 to learn what actions to include in your family disaster plan to prepare for and respond to terrorist threats.

When you complete Part 4, you will be able to:

- Recognize important terms.
- Take protective measures for terrorist threats.
- Know what actions to take if an event occurs.
- Identify resources for more information about terrorist threats.

4.1 General Information about Terrorism

Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom. Terrorists often use threats to:

- Create fear among the public.
- Try to convince citizens that their government is powerless to prevent terrorism.
- Get immediate publicity for their causes.

Acts of terrorism include threats of terrorism; assassinations; kidnappings; hijackings; bomb scares and bombings; cyber attacks (computer-based); and the use of chemical, biological, nuclear and radiological weapons.

High-risk targets for acts of terrorism include military and civilian government facilities, international airports, large cities, and high-profile landmarks. Terrorists might also target large public gatherings, water and food supplies, utilities, and corporate centers. Further, terrorists are capable of spreading fear by sending explosives or chemical and biological agents through the mail.

Within the immediate area of a terrorist event, you would need to rely on police, fire, and other officials for instructions. However, you can prepare in much the same way you would prepare for other crisis events.

The following are general guidelines:

- Be aware of your surroundings.
- Move or leave if you feel uncomfortable or if something does not seem right.
- Take precautions when traveling. Be aware of conspicuous or unusual behavior. Do not accept packages from strangers. Do not leave luggage unattended. You should promptly report unusual behavior, suspicious or unattended packages, and strange devices to the police or security personnel.
- Learn where emergency exits are located in buildings you frequent. Plan how to get out in the event of an emergency.
- Be prepared to do without services you normally depend on—electricity, telephone, natural gas, gasoline pumps, cash registers, ATMs, and Internet transactions.

- Work with building owners to ensure the following items are located on each floor of the building:
  - Portable, battery-operated radio and extra batteries.
  - Several flashlights and extra batteries.
  - First aid kit and manual.
  - Hard hats and dust masks.
  - Fluorescent tape to rope off dangerous areas.

4.2 Explosions

Terrorists have frequently used explosive devices as one of their most common weapons. Terrorists do not have to look far to find out how to make explosive devices; the information is readily available in books and other information sources. The materials needed for an explosive device can be found in many places including variety, hardware, and auto supply stores. Explosive devices are highly portable using vehicles and humans as a means of transport. They are easily detonated from remote locations or by suicide bombers.

Conventional bombs have been used to damage and destroy financial, political, social, and religious institutions. Attacks have occurred in public places and on city streets with thousands of people around the world injured and killed.

Parcels that should make you suspicious:

- Are unexpected or from someone unfamiliar to you.
- Have no return address, or have one that can't be verified as legitimate.
- Are marked with restrictive endorsements such as "Personal," "Confidential," or "Do not X-ray."
- Have protruding wires or aluminum foil, strange odors, or stains.
- Show a city or state in the postmark that doesn't match the return address.
- Are of unusual weight given their size, or are lopsided or oddly shaped.
- Are marked with threatening language.
- Have inappropriate or unusual labeling.
- Have excessive postage or packaging material, such as masking tape and string.
- Have misspellings of common words.
- Are addressed to someone no longer with your organization or are otherwise outdated.
- Have incorrect titles or titles without a name.
- Are not addressed to a specific person.
- Have hand-written or poorly typed addressess.

Take Protective Measures

If you receive a telephoned bomb threat, you should do the following:

- Get as much information from the caller as possible.
- Keep the caller on the line and record everything that is said.
- Notify the police and the building management.

During an Explosion

If there is an explosion, you should:

- Get under a sturdy table or desk if things are falling around you. When they stop falling, leave quickly, watching for obviously weakened floors and stairways. As you exit from the building, be especially watchful of falling debris.
- Leave the building as quickly as possible. Do not stop to retrieve personal possessions or make phone calls.
- Do not use elevators.

Review

Safety guidelines for escaping fires in Section 2.11

Once you are out:

- Do not stand in front of windows, glass doors, or other potentially hazardous areas.
- Move away from sidewalks or streets to be used by emergency officials or others still exiting the building.

If you are trapped in debris:

- If possible, use a flashlight to signal your location to rescuers.
- Avoid unnecessary movement so you don't kick up dust.
- Cover your nose and mouth with anything you have on hand. (Dense-weave cotton material can act as a good filter. Try to breathe through the material.)
- Tap on a pipe or wall so rescuers can hear where you are.
- If possible, use a whistle to signal rescuers.
- Shout only as a last resort. Shouting can cause a person to inhale dangerous amounts of dust.

After an Explosion

Follow the instructions for recovering from a disaster in Part 5.

For More Information

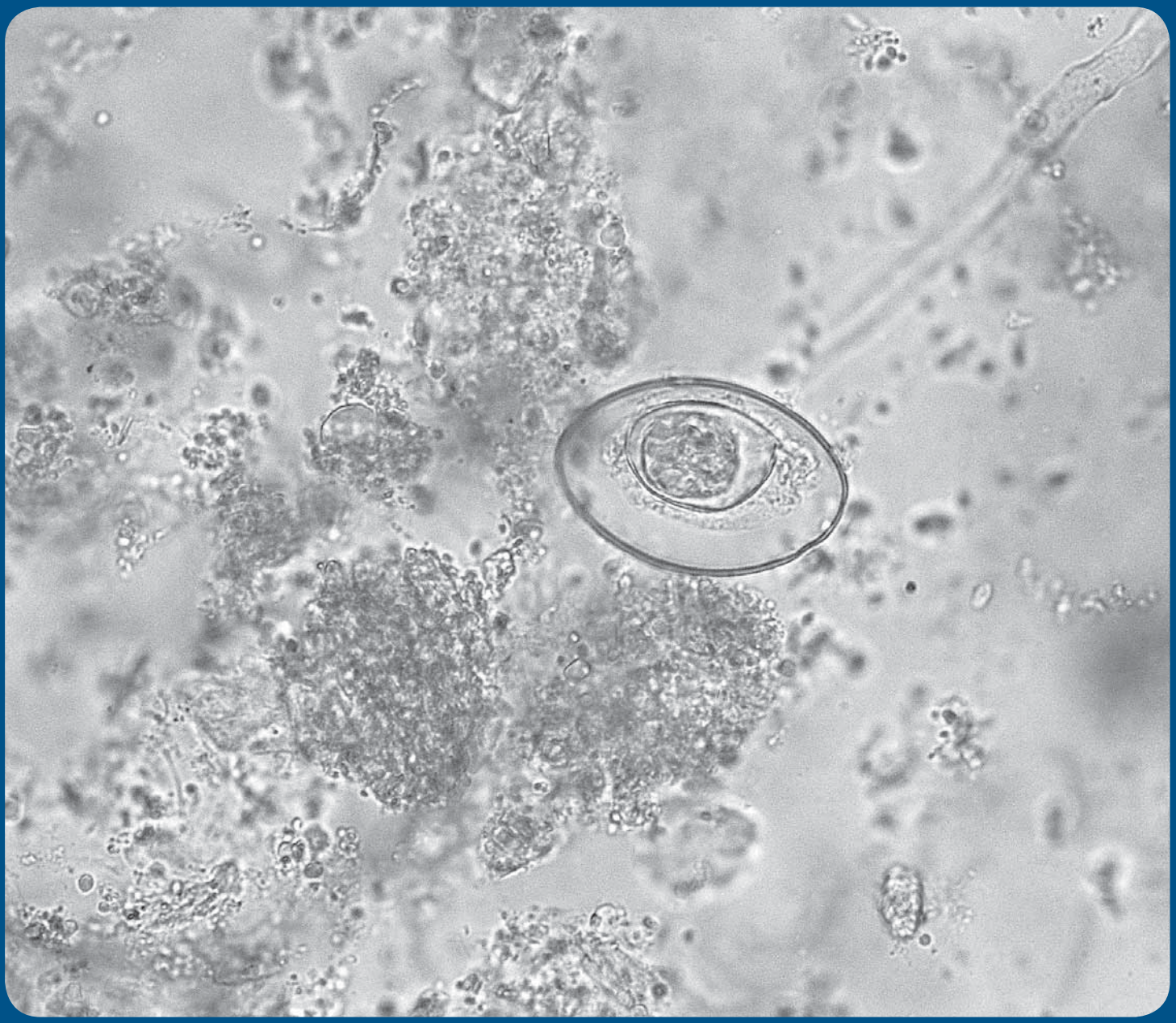
If you require more information about any of these topics, the following resource may be helpful.

Publications

American Red Cross:

Terrorism, Preparing for the Unexpected. Document providing preparation guidelines for a terrorist attack or similar emergency. Available online at www.redcross.org/services/disaster/0,1082,0_589_,00.html

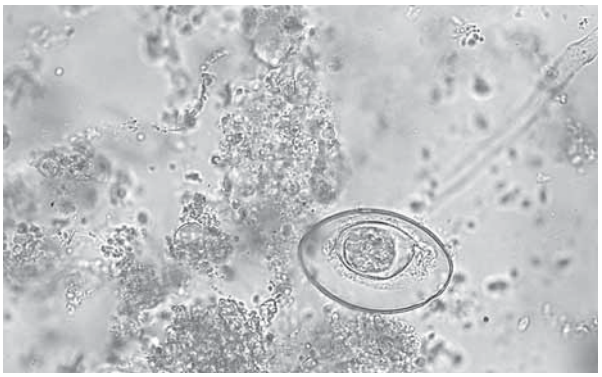
4.3 Biological Threats



Biological agents are organisms or toxins that can kill or incapacitate people, livestock, and crops. The three basic groups of biological agents that would likely be used as weapons are bacteria, viruses, and toxins. Most biological agents are difficult to grow and maintain. Many break down quickly when exposed to sunlight and other environmental factors, while others, such as anthrax spores, are very long lived. Biological agents can be dispersed by spraying them into the air, by infecting animals that carry the disease to humans, and by contaminating food and water. Delivery methods include:

- **Aerosols**—biological agents are dispersed into the air, forming a fine mist that may drift for miles. Inhaling the agent may cause disease in people or animals.
- **Animals**—some diseases are spread by insects and animals, such as fleas, mice, flies, mosquitoes, and livestock.
- **Food and water contamination**—some pathogenic organisms and toxins may persist in food and water supplies. Most microbes can be killed, and toxins deactivated, by cooking food and boiling water. Most microbes are killed by boiling water for one minute, but some require longer. Follow official instructions.
- **Person-to-person**—spread of a few infectious agents is also possible. Humans have been the source of infection for smallpox, plague, and the Lassa viruses.

Specific information on biological agents is available at the Centers for Disease Control and Prevention's Web site, www.bt.cdc.gov.



Take Protective Measures

Before a Biological Attack

The following are guidelines for what you should do to prepare for a biological threat:

- Check with your doctor to ensure all required or suggested immunizations are up to date. Children and older adults are particularly vulnerable to biological agents.

- Consider installing a High Efficiency Particulate Air (HEPA) filter in your furnace return duct. These filters remove particles in the 0.3 to 10 micron range and will filter out most biological agents that may enter your house. If you do not have a central heating or cooling system, a stand-alone portable HEPA filter can be used.

Review

Shelter
in Section 1.4

Filtration in Buildings

Building owners and managers should determine the type and level of filtration in their structures and the level of protection it provides against biological agents. The National Institute of Occupational Safety and Health (NIOSH) provides technical guidance on this topic in their publication *Guidance for Filtration and Air-Cleaning Systems to Protect Building Environments from Airborne Chemical, Biological, or Radiological Attacks*. To obtain a copy, call 1(800)35NIOSH or visit www.cdc.gov/NIOSH/publist.html and request or download NIOSH Publication 2003-136.

During a Biological Attack

In the event of a biological attack, public health officials may not immediately be able to provide information on what you should do. It will take time to determine what the illness is, how it should be treated, and who is in danger. Watch television, listen to radio, or check the Internet for official news and information including signs and symptoms of the disease, areas in danger, if medications or vaccinations are being distributed, and where you should seek medical attention if you become ill.

The first evidence of an attack may be when you notice symptoms of the disease caused by exposure to an agent. Be suspicious of any symptoms you notice, but do not assume that any illness is a result of the attack. Use common sense and practice good hygiene.

If you become aware of an unusual and suspicious substance nearby:

- Move away quickly.
- Wash with soap and water.
- Contact authorities.
- Listen to the media for official instructions.
- Seek medical attention if you become sick.

If you are exposed to a biological agent:

- Remove and bag your clothes and personal items. Follow official instructions for disposal of contaminated items.
- Wash yourself with soap and water and put on clean clothes.
- Seek medical assistance. You may be advised to stay away from others or even quarantined.

Using HEPA Filters

HEPA filters are useful in biological attacks. If you have a central heating and cooling system in your home with a HEPA filter, leave it on if it is running or turn the fan on if it is not running. Moving the air in the house through the filter will help remove the agents from the air. If you have a portable HEPA filter, take it with you to the internal room where you are seeking shelter and turn it on.

If you are in an apartment or office building that has a modern, central heating and cooling system, the system's filtration should provide a relatively safe level of protection from outside biological contaminants.

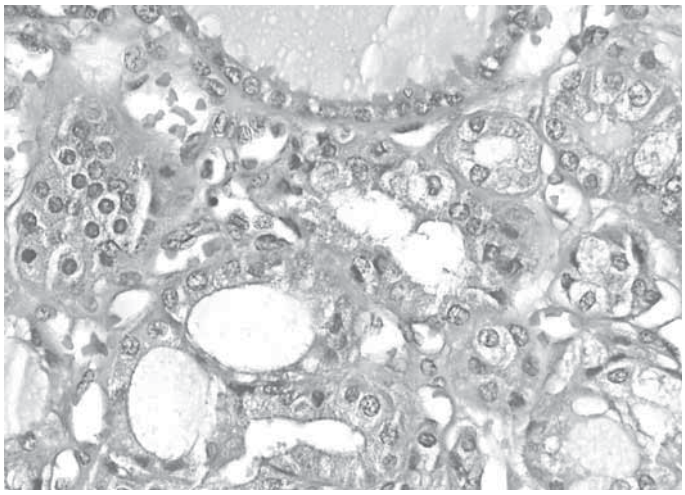
HEPA filters will not filter chemical agents.

After a Biological Attack

Review

Getting Informed in Section 1.1

In some situations, such as the case of the anthrax letters sent in 2001, people may be alerted to potential exposure. If this is the case, pay close attention to all official warnings and instructions on how to proceed. The delivery of medical services for a biological event may be handled differently to respond to increased demand. The basic public health procedures and medical protocols for handling exposure to biological agents are the same as for any infectious disease. It is important for you to pay attention to official instructions via radio, television, and emergency alert systems.



4.4 Chemical Threats

Chemical agents are poisonous vapors, aerosols, liquids, and solids that have toxic effects on people, animals, or plants. They can be released by bombs or sprayed from aircraft, boats, and vehicles. They can be used as a liquid to create a hazard to people and the environment. Some chemical agents may be odorless and tasteless. They can have an immediate effect (a few seconds to a few minutes) or a delayed effect (2 to 48 hours). While potentially lethal, chemical agents are difficult to deliver in lethal concentrations. Outdoors, the agents often dissipate rapidly. Chemical agents also are difficult to produce.

A chemical attack could come without warning. Signs of a chemical release include people having difficulty breathing; experiencing eye irritation; losing coordination; becoming nauseated; or having a burning sensation in the nose, throat, and lungs. Also, the presence of many dead insects or birds may indicate a chemical agent release.

Take Protective Measures

Before a Chemical Attack

The following are guidelines for what you should do to prepare for a chemical threat:

- Check your disaster supplies kit to make sure it includes:
  - A roll of duct tape and scissors.
  - Plastic for doors, windows, and vents for the room in which you will shelter in place. To save critical time during an emergency, pre-measure and cut the plastic sheeting for each opening.
- Choose an internal room to shelter, preferably one without windows and on the highest level.

During a Chemical Attack

The following are guidelines for what you should do in a chemical attack.

If you are instructed to remain in your home or office building, you should:

- Close doors and windows and turn off all ventilation, including furnaces, air conditioners, vents, and fans.
- Seek shelter in an internal room and take your disaster supplies kit.
- Seal the room with duct tape and plastic sheeting.
- Listen to your radio for instructions from authorities.

Review

Shelter safety for sealed rooms in Section 3.1

If you are caught in or near a contaminated area, you should:

- Move away immediately in a direction upwind of the source.
- Find shelter as quickly as possible.

After a Chemical Attack

Decontamination is needed within minutes of exposure to minimize health consequences. Do not leave the safety of a shelter to go outdoors to help others until authorities announce it is safe to do so.

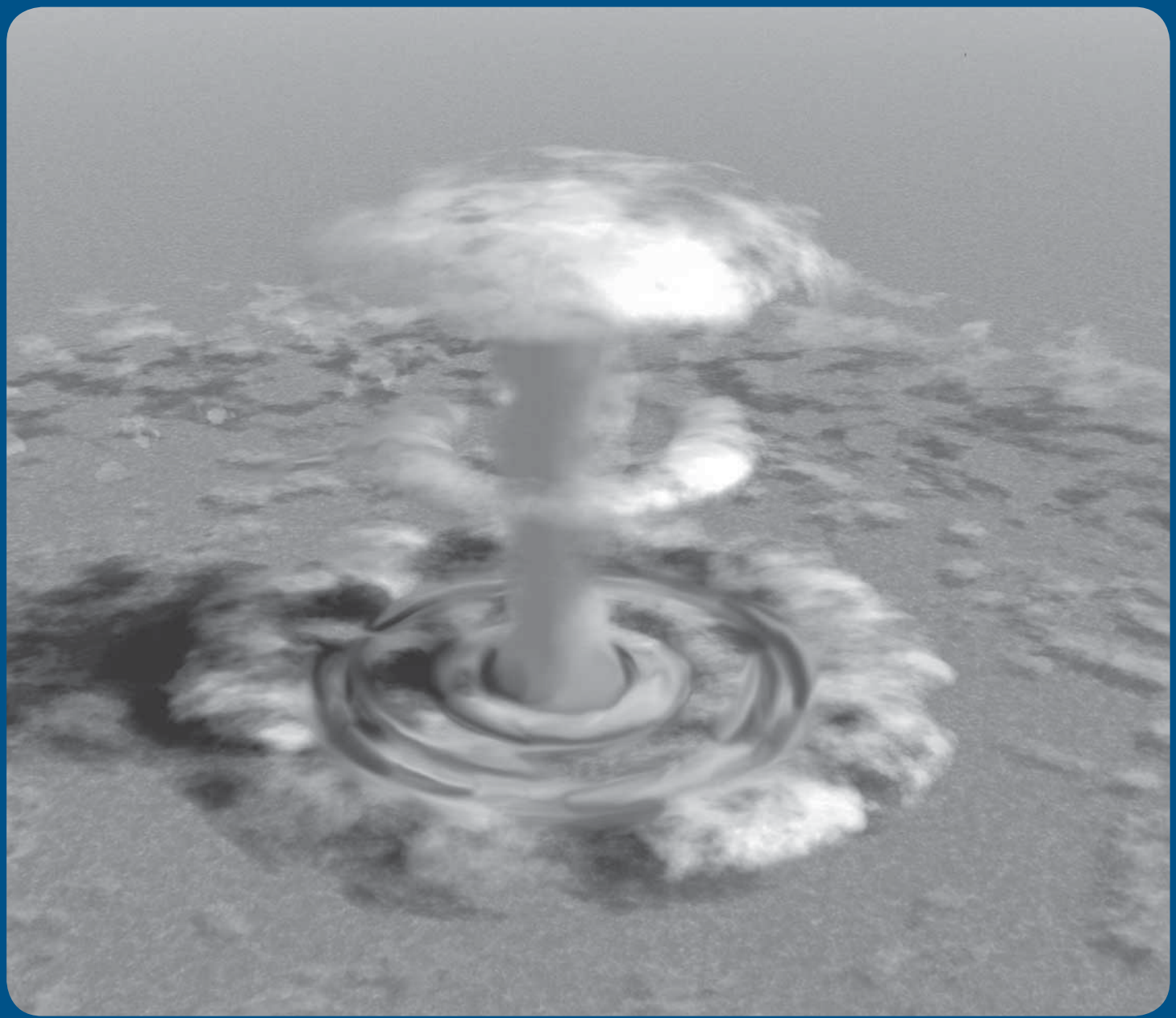
A person affected by a chemical agent requires immediate medical attention from a professional. If medical help is not immediately available, decontaminate yourself and assist in decontaminating others.

Decontamination guidelines are as follows:

- Use extreme caution when helping others who have been exposed to chemical agents.
- Remove all clothing and other items in contact with the body. Contaminated clothing normally removed over the head should be cut off to avoid contact with the eyes, nose, and mouth. Put contaminated clothing and items into a plastic bag and seal it. Decontaminate hands using soap and water. Remove eyeglasses or contact lenses. Put glasses in a pan of household bleach to decontaminate them, and then rinse and dry.
- Flush eyes with water.
- Gently wash face and hair with soap and water before thoroughly rinsing with water.
- Decontaminate other body areas likely to have been contaminated. Blot (do not swab or scrape) with a cloth soaked in soapy water and rinse with clear water.
- Change into uncontaminated clothes. Clothing stored in drawers or closets is likely to be uncontaminated.
- Proceed to a medical facility for screening and professional treatment.

4.5

Nuclear Blast



A nuclear blast is an explosion with intense light and heat, a damaging pressure wave, and widespread radioactive material that can contaminate the air, water, and ground surfaces for miles around. A nuclear device can range from a weapon carried by an intercontinental missile launched by a hostile nation or terrorist organization, to a small portable nuclear devise transported by an individual. All nuclear devices cause deadly effects when exploded, including blinding light, intense heat (thermal radiation), initial nuclear radiation, blast, fires started by the heat pulse, and secondary fires caused by the destruction.

Hazards of Nuclear Devices

The extent, nature, and arrival time of these hazards are difficult to predict. The geographical dispersion of hazard effects will be defined by the following:

- Size of the device. A more powerful bomb will produce more distant effects.
- Height above the ground the device was detonated. This will determine the extent of blast effects.
- Nature of the surface beneath the explosion. Some materials are more likely to become radioactive and airborne than others. Flat areas are more susceptible to blast effects.
- Existing meteorological conditions. Wind speed and direction will affect arrival time of fallout; precipitation may wash fallout from the atmosphere.

Radioactive Fallout

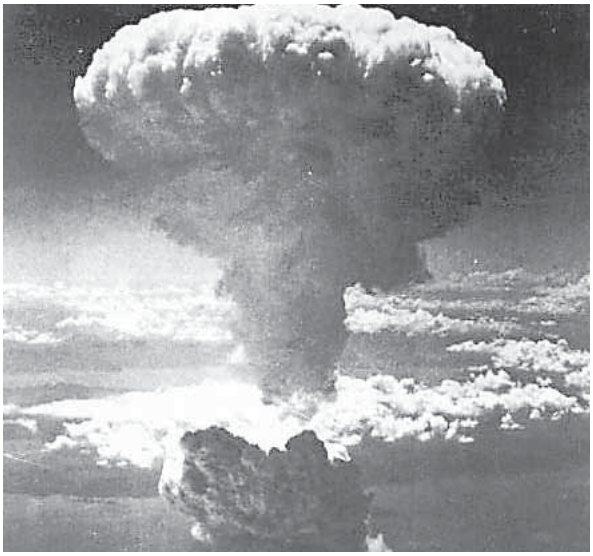
Even if individuals are not close enough to the nuclear blast to be affected by the direct impacts, they may be affected by radioactive fallout. Any nuclear blast results in some fallout. Blasts that occur near the earth's surface create much greater amounts of fallout than blasts that occur at higher altitudes. This is because the tremendous heat produced from a nuclear blast causes an up-draft of air that forms the familiar mushroom cloud. When a blast occurs near the earth's surface, millions of vaporized dirt particles also are drawn into the cloud. As the heat diminishes, radioactive materials that have vaporized condense on the particles and fall back to Earth. The phenomenon is called radioactive fallout. This fallout material decays over a long period of time, and is the main source of residual nuclear radiation.

Fallout from a nuclear explosion may be carried by wind currents for hundreds of miles if the right conditions exist. Effects from even a small portable device exploded at ground level can be potentially deadly.

Nuclear radiation cannot be seen, smelled, or otherwise detected by normal senses. Radiation can only be detected by radiation monitoring devices. This makes radiological emergencies different from other types of emergencies, such as floods or hurricanes. Monitoring can project the fallout arrival times, which will be announced through official warning channels. However, any increase in surface build-up of gritty dust and dirt should be a warning for taking protective measures.

Electromagnetic Pulse

In addition to other effects, a nuclear weapon detonated in or above the earth's atmosphere can create an electromagnetic pulse (EMP), a high-density electrical field. An EMP acts like a stroke of lightning but is stronger, faster, and shorter. An EMP can seriously damage electronic devices connected to power sources or antennas. This includes communication systems, computers, electrical appliances, and automobile or aircraft ignition systems. The damage could range from a minor interruption to actual burnout of components. Most electronic equipment within 1,000 miles of a high-altitude nuclear detonation could be affected. Battery-powered radios with short antennas generally would not be affected. Although an EMP is unlikely to harm most people, it could harm those with pacemakers or other implanted electronic devices.



Protection from a Nuclear Blast

The danger of a massive strategic nuclear attack on the United States is predicted by experts to be less likely today. However, terrorism, by nature, is unpredictable.

If there were threat of an attack, people living near potential targets could be advised to evacuate or they could decide on their own to evacuate to an area not considered a likely target. Protection from radioactive fallout would require taking shelter in an underground area or in the middle of a large building.

In general, potential targets include:

- Strategic missile sites and military bases.
- Centers of government such as Washington, DC, and state capitals.
- Important transportation and communication centers.
- Manufacturing, industrial, technology, and financial centers.
- Petroleum refineries, electrical power plants, and chemical plants.
- Major ports and airfields.

The three factors for protecting oneself from radiation and fallout are distance, shielding, and time.

- **Distance** — the more distance between you and the fallout particles, the better. An underground area such as a home or office building basement offers more protection than the first floor of a building. A floor near the middle of a high-rise may be better, depending on what is nearby at that level on which significant fallout particles would collect. Flat roofs collect fallout particles so the top floor is not a good choice, nor is a floor adjacent to a neighboring flat roof.
- **Shielding** — the heavier and denser the materials—thick walls, concrete, bricks, books and earth—between you and the fallout particles, the better.
- **Time** — fallout radiation loses its intensity fairly rapidly. In time, you will be able to leave the fallout shelter. Radioactive fallout poses the greatest threat to people during the first two weeks, by which time it has declined to about 1 percent of its initial radiation level.

Remember that any protection, however temporary, is better than none at all, and the more shielding, distance, and time you can take advantage of, the better.

Take Protective Measures

Before a Nuclear Blast

Review

Update your supplies;
see Section 1.2

To prepare for a nuclear blast, you should do the following:

- Find out from officials if any public buildings in your community have been designated as fallout shelters. If none have been designated, make your own list of potential shelters near your home, workplace, and school. These places would include basements or the windowless center area of middle floors in high-rise buildings, as well as subways and tunnels.
- If you live in an apartment building or high-rise, talk to the manager about the safest place in the building for sheltering and about providing for building occupants until it is safe to go out.
- During periods of increased threat increase your disaster supplies to be adequate for up to two weeks.

Taking shelter during a nuclear blast is absolutely necessary. There are two kinds of shelters—blast and fallout. The following describes the two kinds of shelters:

- **Blast shelters** are specifically constructed to offer some protection against blast pressure, initial radiation, heat, and fire. But even a blast shelter cannot withstand a direct hit from a nuclear explosion.
- **Fallout shelters** do not need to be specially constructed for protecting against fallout. They can be any protected space, provided that the walls and roof are thick and dense enough to absorb the radiation given off by fallout particles.

Review

Shelter requirements in Section 1.4

During a Nuclear Blast

The following are guidelines for what to do in the event of a nuclear explosion.

If an attack warning is issued:

- Take cover as quickly as you can, below ground if possible, and stay there until instructed to do otherwise.
- Listen for official information and follow instructions.

If you are caught outside and unable to get inside immediately:

- Do not look at the flash or fireball—it can blind you.
- Take cover behind anything that might offer protection.
- Lie flat on the ground and cover your head. If the explosion is some distance away, it could take 30 seconds or more for the blast wave to hit.
- Take shelter as soon as you can, even if you are many miles from ground zero where the attack occurred—radioactive fallout can be carried by the winds for hundreds of miles. Remember the three protective factors: Distance, shielding, and time.

After a Nuclear Blast

Decay rates of the radioactive fallout are the same for any size nuclear device. However, the amount of fallout will vary based on the size of the device and its proximity to the ground. Therefore, it might be necessary for those in the areas with highest radiation levels to shelter for up to a month.

Review

Shelter requirements in Section 1.4

The heaviest fallout would be limited to the area at or downwind from the explosion, and 80 percent of the fallout would occur during the first 24 hours.

People in most of the areas that would be affected could be allowed to come out of shelter within a few days and, if necessary, evacuate to unaffected areas.

Returning to Your Home

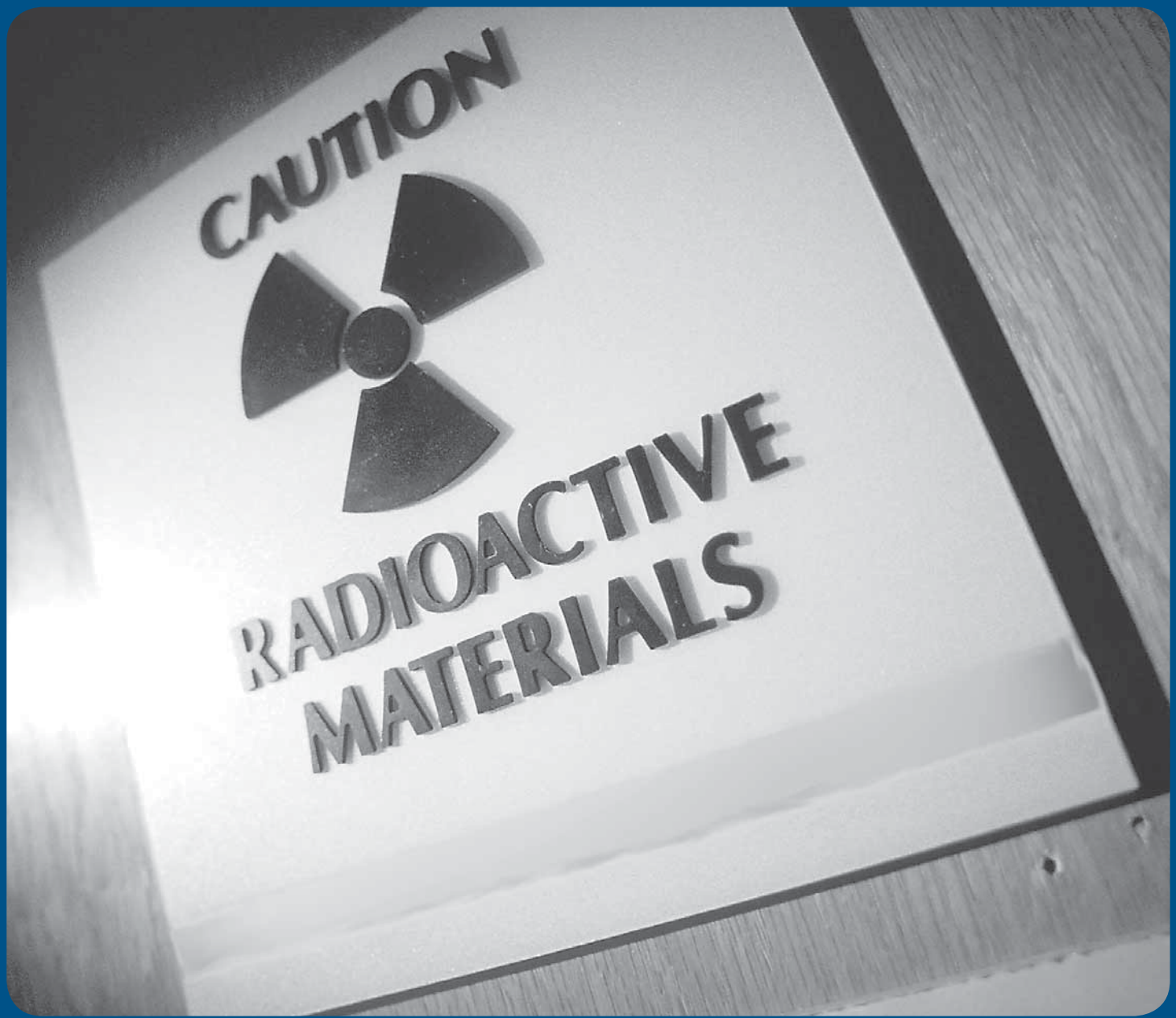
Remember the following:

- Keep listening to the radio and television for news about what to do, where to go, and places to avoid.
- Stay away from damaged areas. Stay away from areas marked "radiation hazard" or "HAZMAT." Remember that radiation cannot be seen, smelled, or otherwise detected by human senses.

Follow the instructions for returning home in Part 5.

4.6

Radiological Dispersion Device (RDD)



Terrorist use of an RDD—often called "dirty nuke" or "dirty bomb"—is considered far more likely than use of a nuclear explosive device. An RDD combines a conventional explosive device—such as a bomb—with radioactive material. It is designed to scatter dangerous and sub-lethal amounts of radioactive material over a general area. Such RDDs appeal to terrorists because they require limited technical knowledge to build and deploy compared to a nuclear device. Also, the radioactive materials in RDDs are widely used in medicine, agriculture, industry, and research, and are easier to obtain than weapons grade uranium or plutonium.

The primary purpose of terrorist use of an RDD is to cause psychological fear and economic disruption. Some devices could cause fatalities from exposure to radioactive materials. Depending on the speed at which the area of the RDD detonation was evacuated or how successful people were at sheltering-in-place, the number of deaths and injuries from an RDD might not be substantially greater than from a conventional bomb explosion.

The size of the affected area and the level of destruction caused by an RDD would depend on the sophistication and size of the conventional bomb, the type of radioactive material used, the quality and quantity of the radioactive material, and the local meteorological conditions—primarily wind and precipitation. The area affected could be placed off-limits to the public for several months during clean-up efforts.

Take Protective Measures

Before an RDD Event

Review

Nuclear Blast
Section 4.5

There is no way of knowing how much warning time there will be before an attack by terrorists using an RDD, so being prepared in advance and knowing what to do and when is important. Take the same protective measures you would for fallout resulting from a nuclear blast.

During an RDD Event

While the explosive blast will be immediately obvious, the presence of radiation will not be known until trained personnel with specialized equipment are on the scene. Whether you are indoors or outdoors, home or at work, be extra cautious. It would be safer to assume radiological contamination has occurred—particularly in an urban setting or near other likely terrorist targets—and take the proper precautions. As with any radiation, you want to avoid or limit exposure. This is particularly true of inhaling radioactive dust that results from the explosion. As you seek shelter from any location (indoors or outdoors) and there is visual dust or other contaminants in the air, breathe though the cloth of your shirt or coat to limit your exposure. If you manage to avoid breathing radioactive dust, your proximity to the radioactive particles may still result in some radiation exposure.

If the explosion or radiological release occurs inside, get out immediately and seek safe shelter. Otherwise, if you are:

Outdoors	Indoors
• Seek shelter indoors immediately in the nearest undamaged building. • If appropriate shelter is not available, move as rapidly as is safe upwind and away from the location of the explosive blast. Then, seek appropriate shelter as soon as possible. • Listen for official instructions and follow directions.	• If you have time, turn off ventilation and heating systems, close windows, vents, fireplace dampers, exhaust fans, and clothes dryer vents. Retrieve your disaster supplies kit and a battery-powered radio and take them to your shelter room. • Seek shelter immediately, preferably underground or in an interior room of a building, placing as much distance and dense shielding as possible between you and the outdoors where the radioactive material may be. • Seal windows and external doors that do not fit snugly with duct tape to reduce infiltration of radioactive particles. Plastic sheeting will not provide shielding from radioactivity nor from blast effects of a nearby explosion. • Listen for official instructions and follow directions.

After an RDD Event

After finding safe shelter, those who may have been exposed to radioactive material should decontaminate themselves. To do this, remove and bag your clothing (and isolate the bag away from you and others), and shower thoroughly with soap and water. Seek medical attention after officials indicate it is safe to leave shelter.

Contamination from an RDD event could affect a wide area, depending on the amount of conventional explosives used, the quantity and type of radioactive material released, and meteorological conditions. Thus, radiation dissipation rates vary, but radiation from an RDD will likely take longer to dissipate due to a potentially larger localized concentration of radioactive material.

Follow these additional guidelines after an RDD event:

- Continue listening to your radio or watch the television for instructions from local officials, whether you have evacuated or sheltered-in-place.
- Do not return to or visit an RDD incident location for any reason.
- Follow the instructions for recovering from a disaster in Part 5.

Terrorism Knowledge Check

Answer the following questions. Check your responses with the answer key below.

1 What would you do, if you were at work and…

a. there was an explosion in the building?

b. you received a package in the mail that you considered suspicious?

c. you received a telephone call that was a bomb threat?

2 If caught outside during a nuclear blast, what should you do?

3 What are the three key factors for protection from nuclear blast and fallout?

4 If you take shelter in your own home, what kind of room would be safest during a chemical or biological attack?

5 In case of a chemical attack, what extra items should you have in your disaster supplies kit?

Answer Key

1. a. Shelter from falling debris under a desk and then follow evacuation procedures
   b. Clear the area and notify the police immediately
   c. Keep the caller on the line and record everything that was said
2. • Don't look at the flash
   • Take cover behind anything that offers protection
   • Lay flat on the ground
   • Cover your head
3. Distance, shielding, time
4. An interior room on the uppermost level, preferably without windows
5. Plastic sheeting, duct tape, and scissors.

4.7

Homeland Security Advisory System

The Homeland Security Advisory System was designed to provide a national framework and comprehensive means to disseminate information regarding the risk of terrorist acts to the following:

- Federal, state, and local authorities
- The private sector
- The American people

This system provides warnings in the form of a set of graduated "threat conditions" that increase as the risk of the threat increases. Risk includes both the probability of an attack occurring and its potential gravity. Threat conditions may be assigned for the entire nation, or they may be set for a particular geographic area or industrial sector. At each threat condition, government entities and the private sector, including businesses and schools, would implement a corresponding set of "protective measures" to further reduce vulnerability or increase response capability during a period of heightened alert.

There are five threat conditions, each identified by a description and corresponding color. Assigned threat conditions will be reviewed at regular intervals to determine whether adjustments are warranted.

Threat Conditions and Associated Protective Measures

There is always a risk of a terrorist threat. Each threat condition assigns a level of alert appropriate to the increasing risk of terrorist attacks. Beneath each threat condition are some suggested protective measures that the government, the private sector, and the public can take.

In each case, as threat conditions escalate, protective measures are added to those already taken in lower threat conditions. The measures are cumulative.

Citizen Guidance on the Homeland Security Advisory System

Low Risk

- Develop a family emergency plan. Share it with family and friends, and practice the plan. Visit www.Ready.gov for help creating a plan.
- Create an "Emergency Supply Kit" for your household.
- Be informed. Visit www.Ready.gov or obtain a copy of "Preparing Makes Sense, Get Ready Now" by calling 1-800-BE-READY.
- Know where to shelter and how to turn off utilities (power, gas, and water) to your home.
- Examine volunteer opportunities in your community, such as Citizen Corps, Volunteers in Police Service, Neighborhood Watch or others, and donate your time. Consider completing an American Red Cross first aid or CPR course , or Community Emergency Response Team (CERT) course .

Guarded Risk

- Complete recommended steps at level green.
- Review stored disaster supplies and replace items that are outdated.
- Be alert to suspicious activity and report it to proper authorities.

Elevated Risk

- Complete recommended steps at levels green and blue.
- Ensure disaster supplies are stocked and ready.
- Check telephone numbers in family emergency plan and update as necessary.
- Develop alternate routes to/from work or school and practice them.
- Continue to be alert for suspicious activity and report it to authorities.

High Risk

- Complete recommended steps at lower levels.
- Exercise caution when traveling, pay attention to travel advisories.
- Review your family emergency plan and make sure all family members know what to do.
- Be Patient. Expect some delays, baggage searches and restrictions at public buildings.
- Check on neighbors or others that might need assistance in an emergency.

Severe Risk

- Complete all recommended actions at lower levels.
- Listen to local emergency management officials.
- Stay tuned to TV or radio for current information/instructions.
- Be prepared to shelter or evacuate, as instructed.
- Expect traffic delays and restrictions.
- Provide volunteer services only as requested.
- Contact your school/business to determine status of work day.

*Developed with input from the American Red Cross.

Knowledge Check

1. By following the instructions in this guide, you should now have the following:

   - A family disaster plan that sets forth what you and your family need to do to prepare for and respond to all types of hazards.
   - A disaster supplies kit filled with items you would need to sustain you and your family for at least three days, maybe more.
   - Knowledge of your community warning systems and what you should do when these are activated.
   - An understanding of why evacuations are necessary and what you would need to do in the case of an evacuation.
   - Identification of where the safest shelters are for the various hazards.

Compare the above actions with the personal action guidelines for each of the threat levels. Determine how well you are prepared for each of the five levels.

2. What is the current threat level? _____

   Hint: To determine the current threat level, check your cable news networks or visit www.dhs.gov. Keep your family informed when changes in the threat level occur, and go over the personal actions you need to take.

For More Information

If you require more information about any of these topics, the following resource may be helpful.

Publications

American Red Cross

American Red Cross: Homeland Security Advisory System Recommendations for Individuals, Families, Neighborhoods, Schools, and Businesses. Explanation of preparedness activities for each population. Available online at www.redcross.org/services/disaster/beprepared/hsas.html

5

Recovering from Disaster

Health and Safety Guidelines

Recovering from a disaster is usually a gradual process. Safety is a primary issue, as are mental and physical well-being. If assistance is available, knowing how to access it makes the process faster and less stressful. This section offers some general advice on steps to take after disaster strikes in order to begin getting your home, your community, and your life back to normal.

Your first concern after a disaster is your family's health and safety. You need to consider possible safety issues and monitor family health and well-being.

Aiding the Injured

Check for injuries. Do not attempt to move seriously injured persons unless they are in immediate danger of death or further injury. If you must move an unconscious person, first stabilize the neck and back, then call for help immediately.

- If the victim is not breathing, carefully position the victim for artificial respiration, clear the airway, and commence mouth-to-mouth resuscitation.
- Maintain body temperature with blankets. Be sure the victim does not become overheated.
- Never try to feed liquids to an unconscious person.

Health

- Be aware of exhaustion. Don't try to do too much at once. Set priorities and pace yourself. Get enough rest.
- Drink plenty of clean water.
- Eat well.
- Wear sturdy work boots and gloves.
- Wash your hands thoroughly with soap and clean water often when working in debris.

Safety Issues

- Be aware of new safety issues created by the disaster. Watch for washed out roads, contaminated buildings, contaminated water, gas leaks, broken glass, damaged electrical wiring, and slippery floors.
- Inform local authorities about health and safety issues, including chemical spills, downed power lines, washed out roads, smoldering insulation, and dead animals.

Returning Home

Returning home can be both physically and mentally challenging. Above all, use caution.

General tips:

- Keep a battery-powered radio with you so you can listen for emergency updates and news reports.
- Use a battery-powered flash light to inspect a damaged home.
  Note: The flashlight should be turned on outside before entering—the battery may produce a spark that could ignite leaking gas, if present.
- Watch out for animals, especially poisonous snakes. Use a stick to poke through debris.
- Use the phone only to report life-threatening emergencies.
- Stay off the streets. If you must go out, watch for fallen objects; downed electrical wires; and weakened walls, bridges, roads, and sidewalks.

Before You Enter Your Yome

Walk carefully around the outside and check for loose power lines, gas leaks, and structural damage. If you have any doubts about safety, have your residence inspected by a qualified building inspector or structural engineer before entering.

Do not enter if:

- You smell gas.
- Floodwaters remain around the building.
- Your home was damaged by fire and the authorities have not declared it safe.

Going Inside Your Home

When you go inside your home, there are certain things you should and should not do. Enter the home carefully and check for damage. Be aware of loose boards and slippery floors. The following items are other things to check inside your home:

- **Natural gas.** If you smell gas or hear a hissing or blowing sound, open a window and leave immediately. Turn off the main gas valve from the outside, if you can. Call the gas company from a neighbor's residence. If you shut off the gas supply at the main valve, you will need a professional to turn it back on. Do not smoke or use oil, gas lanterns, candles, or torches for lighting inside a damaged home until you are sure there is no leaking gas or other flammable materials present.
- **Sparks, broken or frayed wires.** Check the electrical system unless you are wet, standing in water, or unsure of your safety. If possible, turn off the electricity at the main fuse box or circuit breaker. If the situation is unsafe, leave the building and call for help. Do not turn on the lights until you are sure they're safe to use. You may want to have an electrician inspect your wiring.
- **Roof, foundation, and chimney cracks.** If it looks like the building may collapse, leave immediately.
- **Appliances.** If appliances are wet, turn off the electricity at the main fuse box or circuit breaker. Then, unplug appliances and let them dry out. Have appliances checked by a professional before using them again. Also, have the electrical system checked by an electrician before turning the power back on.
- **Water and sewage systems.** If pipes are damaged, turn off the main water valve. Check with local authorities before using any water; the water could be contaminated. Pump out wells and have the water tested by authorities before drinking. Do not flush toilets until you know that sewage lines are intact.
- **Food and other supplies.** Throw out all food and other supplies that you suspect may have become contaminated or come in to contact with floodwater.
- **Your basement.** If your basement has flooded, pump it out gradually (about one third of the water per day) to avoid damage. The walls may collapse and the floor may buckle if the basement is pumped out while the surrounding ground is still waterlogged.
- **Open cabinets.** Be alert for objects that may fall.
- **Clean up household chemical spills.** Disinfect items that may have been contaminated by raw sewage, bacteria, or chemicals. Also clean salvageable items.
- **Call your insurance agent.** Take pictures of damages. Keep good records of repair and cleaning costs.

Being Wary of Wildlife and Other Animals

Disaster and life threatening situations will exacerbate the unpredictable nature of wild animals. To protect yourself and your family, learn how to deal with wildlife.

Guidelines

- Do not approach or attempt to help an injured or stranded animal. Call your local animal control office or wildlife resource office.
- Do not corner wild animals or try to rescue them. Wild animals will likely feel threatened and may endanger themselves by dashing off into floodwaters, fire, and so forth.
- Do not approach wild animals that have taken refuge in your home. Wild animals such as snakes, opossums, and raccoons often seek refuge from floodwaters on upper levels of homes and have been known to remain after water recedes. If you encounter animals in this situation, open a window or provide another escape route and the animal will likely leave on its own. Do not attempt to capture or handle the animal. Should the animal stay, call your local animal control office or wildlife resource office.
- Do not attempt to move a dead animal. Animal carcasses can present serious health risks. Contact your local emergency management office or health department for help and instructions.
- If bitten by an animal, seek immediate medical attention.

Seeking Disaster Assistance

Throughout the recovery period, it is important to monitor local radio or television reports and other media sources for information about where to get emergency housing, food, first aid, clothing, and financial assistance. The following section provides general information about the kinds of assistance that may be available.

Direct Assistance

Direct assistance to individuals and families may come from any number of organizations, including:

- American Red Cross.
- Salvation Army.
- Other volunteer organization.

These organizations provide food, shelter, supplies and assist in clean-up efforts.

The Federal Role

In the most severe disasters, the federal government is also called in to help individuals and families with temporary housing, counseling (for post-disaster trauma), low-interest loans and grants, and other assistance. The federal government also has programs that help small businesses and farmers.

Most federal assistance becomes available when the President of the United States declares a "Major Disaster" for the affected area at the request of a state governor. FEMA will provide information through the media and community outreach about federal assistance and how to apply.

Coping with Disaster

The emotional toll that disaster brings can sometimes be even more devastating than the financial strains of damage and loss of home, business, or personal property.

Understand Disaster Events

- Everyone who sees or experiences a disaster is affected by it in some way.
- It is normal to feel anxious about your own safety and that of your family and close friends.
- Profound sadness, grief, and anger are normal reactions to an abnormal event.
- Acknowledging your feelings helps you recover.
- Focusing on your strengths and abilities helps you heal.
- Accepting help from community programs and resources is healthy.
- Everyone has different needs and different ways of coping.
- It is common to want to strike back at people who have caused great pain.

Children and older adults are of special concern in the aftermath of disasters. Even individuals who experience a disaster "second hand" through exposure to extensive media coverage can be affected.

Contact local faith-based organizations, voluntary agencies, or professional counselors for counseling. Additionally, FEMA and state and local governments of the affected area may provide crisis counseling assistance.

Recognize Signs of Disaster Related Stress

When adults have the following signs, they might need crisis counseling or stress management assistance:

- Difficulty communicating thoughts.
- Difficulty sleeping.
- Difficulty maintaining balance in their lives.
- Low threshold of frustration.
- Increased use of drugs/alcohol.
- Limited attention span.
- Poor work performance.
- Headaches/stomach problems.
- Tunnel vision/muffled hearing.
- Colds or flu-like symptoms.
- Disorientation or confusion.
- Difficulty concentrating.
- Reluctance to leave home.
- Depression, sadness.
- Feelings of hopelessness.
- Mood-swings and easy bouts of crying.
- Overwhelming guilt and self-doubt.
- Fear of crowds, strangers, or being alone.

Easing Disaster-Related Stress

The following are ways to ease disaster-related stress:

- Talk with someone about your feelings—anger, sorrow, and other emotions—even though it may be difficult.
- Seek help from professional counselors who deal with post-disaster stress.
- Do not hold yourself responsible for the disastrous event or be frustrated because you feel you cannot help directly in the rescue work.
- Take steps to promote your own physical and emotional healing by healthy eating, rest, exercise, relaxation, and meditation.
- Maintain a normal family and daily routine, limiting demanding responsibilities on yourself and your family.
- Spend time with family and friends.
- Participate in memorials.

- Use existing support groups of family, friends, and religious institutions.
- Ensure you are ready for future events by restocking your disaster supplies kits and updating your family disaster plan. Doing these positive actions can be comforting.

Helping Children Cope with Disaster

Disasters can leave children feeling frightened, confused, and insecure. Whether a child has personally experienced trauma, has merely seen the event on television, or has heard it discussed by adults, it is important for parents and teachers to be informed and ready to help if reactions to stress begin to occur.

Children may respond to disaster by demonstrating fears, sadness, or behavioral problems. Younger children may return to earlier behavior patterns, such as bed-wetting, sleep problems, and separation anxiety. Older children may also display anger, aggression, school problems, or withdrawal. Some children who have only indirect contact with the disaster but witness it on television may develop distress.

Who is at Risk?

For many children, reactions to disasters are brief and represent normal reactions to "abnormal events." A smaller number of children can be at risk for more enduring psychological distress as a function of three major risk factors:

- Direct exposure to the disaster, such as being evacuated, observing injuries or death of others, or experiencing injury along with fearing one's life is in danger
- Loss/grief: This relates to the death or serious injury of family or friends
- On-going stress from the secondary effects of disaster, such as temporarily living elsewhere, loss of friends and social networks, loss of personal property, parental unemployment, and costs incurred during recovery to return the family to pre-disaster life and living conditions.

What Creates Vulnerabilities in Children?

In most cases, depending on the risk factors above, distressing responses are temporary. In the absence of severe threat to life, injury, loss of loved ones, or secondary problems such as loss of home, moves, etc., symptoms usually diminish over time. For those that were directly exposed to the disaster, reminders of the disaster such as high winds, smoke, cloudy skies, sirens, or other reminders of the disaster may cause upsetting feelings to return. Having a prior history of some type of traumatic event or severe stress may contribute to these feelings.

Children's coping with disaster or emergencies is often tied to the way parents cope. They can detect adults' fears and sadness. Parents and adults can make disasters less traumatic for children by taking steps to manage their own feelings and plans for coping. Parents are almost always the best source of support for children in disasters. One way to establish a sense of control and to build confidence in children before a disaster is to engage and involve them in preparing a family disaster plan. After a disaster, children can contribute to a family recovery plan.

Review

See Section 1: Basic preparedness

A Child's Reaction to Disaster by Age

Below are common reactions in children after a disaster or traumatic event.

Birth through 2 years. When children are pre-verbal and experience a trauma, they do not have the words to describe the event or their feelings. However, they can retain memories of particular sights, sounds, or smells. Infants may react to trauma by being irritable, crying more than usual, or wanting to be held and cuddled. The biggest influence on children of this age is how their parents cope. As children get older, their play may involve acting out elements of the traumatic event that occurred several years in the past and was seemingly forgotten.

Preschool—3 through 6 years. Preschool children often feel helpless and powerless in the face of an overwhelming event. Because of their age and small size, they lack the ability to protect themselves or others. As a result, they feel intense fear and insecurity about being separated from caregivers. Preschoolers cannot grasp the concept of permanent loss. They can see consequences as being reversible or permanent. In the weeks following a traumatic event, preschoolers' play activities may reenact the incident or the disaster over and over again.

School age—7 through 10 years. The school-age child has the ability to understand the permanence of loss. Some children become intensely preoccupied with the details of a traumatic event and want to talk about it continually. This preoccupation can interfere with the child's concentration at school and academic performance may decline. At school, children may hear inaccurate information from peers. They may display a wide range of reactions—sadness, generalized fear, or specific fears of the disaster happening again, guilt over action or inaction during the disaster, anger that the event was not prevented, or fantasies of playing rescuer.

Pre-adolescence to adolescence—11 through 18 years. As children grow older, they develop a more sophisticated understanding of the disaster event. Their responses are more similar to adults. Teenagers may become involved in dangerous, risk-taking behaviors, such as reckless driving, or alcohol or drug use. Others can become fearful of leaving home and avoid previous levels of activities. Much of adolescence is focused on moving out into the world. After a trauma, the view of the world can seem more dangerous and unsafe. A teenager may feel overwhelmed by intense emotions and yet feel unable to discuss them with others.

Meeting the Child's Emotional Needs

Children's reactions are influenced by the behavior, thoughts, and feelings of adults. Adults should encourage children and adolescents to share their thoughts and feelings about the incident. Clarify misunderstandings about risk and danger by listening to children's concerns and answering questions. Maintain a sense of calm by validating children's concerns and perceptions and with discussion of concrete plans for safety.

Listen to what the child is saying. If a young child is asking questions about the event, answer them simply without the elaboration needed for an older child or adult. Some children are comforted by knowing more or less information than others; decide what level of information your particular child needs. If a child has difficulty expressing feelings, allow the child to draw a picture or tell a story of what happened.

Try to understand what is causing anxieties and fears. Be aware that following a disaster, children are most afraid that:

- The event will happen again.
- Someone close to them will be killed or injured.
- They will be left alone or separated from the family.

Reassuring Children After a Disaster

Suggestions to help reassure children include the following:

- Personal contact is reassuring. Hug and touch your children.
- Calmly provide factual information about the recent disaster and current plans for insuring their safety along with recovery plans.
- Encourage your children to talk about their feelings.
- Spend extra time with your children such as at bedtime.
- Re-establish your daily routine for work, school, play, meals, and rest.
- Involve your children by giving them specific chores to help them feel they are helping to restore family and community life.
- Praise and recognize responsible behavior.
- Understand that your children will have a range of reactions to disasters.
- Encourage your children to help update your a family disaster plan.

If you have tried to create a reassuring environment by following the steps above, but your child continues to exhibit stress, if the reactions worsen over time, or if they cause interference with daily behavior at school, at home, or with other relationships, it may be appropriate to talk to a professional. You can get professional help from the child's primary care physician, a mental health provider specializing in children's needs, or a member of the clergy.

Monitor and Limit Your Family's Exposure to the Media

News coverage related to a disaster may elicit fear and confusion and arouse anxiety in children. This is particularly true for large-scale disasters or a terrorist event where significant property damage and loss of life has occurred. Particularly for younger children, repeated images of an event may cause them to believe the event is recurring over and over.

If parents allow children to watch television or use the Internet where images or news about the disaster are shown, parents should be with them to encourage communication and provide explanations. This may also include parent's monitoring and appropriately limiting their own exposure to anxiety-provoking information.

Use Support Networks

Parents help their children when they take steps to understand and manage their own feelings and ways of coping. They can do this by building and using social support systems of family, friends, community organizations and agencies, faith-based institutions, or other resources that work for that family. Parents can build their own unique social support systems so that in an emergency situation or when a disaster strikes, they can be supported and helped to manage their reactions. As a result, parents will be more available to their children and better able to support them. Parents are almost always the best source of support for children in difficult times. But to support their children, parents need to attend to their own needs and have a plan for their own support.

Preparing for disaster helps everyone in the family accept the fact that disasters do happen, and provides an opportunity to identify and collect the resources needed to meet basic needs after disaster. Preparation helps; when people feel prepared, they cope better and so do children.

Helping Others

The compassion and generosity of the American people is never more evident than after a disaster. People want to help. Here are some general guidelines on helping others after a disaster:

- Volunteer! Check with local organizations or listen to local news reports for information about where volunteers are needed. **Note:** Until volunteers are specifically requested, stay away from disaster areas.
- Bring your own food, water, and emergency supplies to a disaster area if you are needed there. This is especially important in cases where a large area has been affected and emergency items are in short supply.
- Give a check or money order to a recognized disaster relief organization. These groups are organized to process checks, purchase what is needed, and get it to the people who need it most.

- Do not drop off food, clothing, or any other item to a government agency or disaster relief organization unless a particular item has been requested. Normally, these organizations do not have the resources to sort through the donated items.
- Donate a quantity of a given item or class of items (such as nonperishable food) rather than a mix of different items. Determine where your donation is going, how it's going to get there, who is going to unload it, and how it is going to be distributed. Without sufficient planning, much needed supplies will be left unused.

For More Information

If you require more information about any of these topics, the following are resources that may be helpful.

FEMA Publications

Helping Children Cope with Disasters. L-196. Provides information about how to prepare children for disaster and how to lessen the emotional effects of disaster.

When Disaster Strikes. L-217. Provides information about donations and volunteer organizations.

Repairing Your Flooded Home. FEMA 234. This 362-page publication provides a step-by-step guide to repairing your home and how to get help after a flood disaster. Available online at www.fema.gov/hazards/floods/lib234.shtm

After a Flood: The First Steps. L 198. Tips for staying healthy, cleaning up and repairing, and getting help after a flood. Available online at www.fema.gov/hazards/floods/aftrfld.shtm

Appendix A: Water Conservation Tips

Indoor Water Conservation Tips

General

- Never pour water down the drain when there may be another use for it. Use it to water your indoor plants or garden.
- Repair dripping faucets by replacing washers. One drop per second wastes 2,700 gallons of water per year!
- Check all plumbing for leaks. Have leaks repaired by a plumber.
- Retrofit all household faucets by installing aerators with flow restrictors.
- Install an instant hot water heater on your sink.
- Insulate your water pipes to reduce heat loss and prevent them from breaking.
- Install a water-softening system only when the minerals in the water would damage your pipes. Turn the softener off while on vacation.
- Choose appliances that are more energy and water efficient.

Bathroom

- Consider purchasing a low-volume toilet that uses less than half the water of older models. **Note:** In many areas, low-volume units are required by law.
- Install a toilet displacement device to cut down on the amount of water needed to flush. Place a one-gallon plastic jug of water into the tank to displace toilet flow (do not use a brick, it may dissolve and loose pieces may cause damage to the internal parts). Be sure installation does not interfere with the operating parts.
- Replace your showerhead with an ultra-low-flow version.
- Place a bucket in the shower to catch excess water for watering plants.
- Avoid flushing the toilet unnecessarily. Dispose of tissues, insects, and other similar waste in the trash rather than the toilet.
- Avoid taking baths—take short showers—turn on water only to get wet and lather and then again to rinse off.
- Avoid letting the water run while brushing your teeth, washing your face, or shaving.

Kitchen

- Operate automatic dishwashers only when they are fully loaded. Use the "light wash" feature, if available, to use less water.
- Hand wash dishes by filling two containers—one with soapy water and the other with rinse water containing a small amount of chlorine bleach.
- Clean vegetables in a pan filled with water rather than running water from the tap.
- Start a compost pile as an alternate method of disposing of food waste or simply dispose of food in the garbage. (Kitchen sink disposals require a lot of water to operate properly).
- Store drinking water in the refrigerator. Do not let the tap run while you are waiting for water to cool.

- Avoid wasting water waiting for it to get hot. Capture it for other uses such as plant watering or heat it on the stove or in a microwave.
- Avoid rinsing dishes before placing them in the dishwasher; just remove large particles of food. (Most dishwashers can clean soiled dishes very well, so dishes do not have to be rinsed before washing)
- Avoid using running water to thaw meat or other frozen foods. Defrost food overnight in the refrigerator or use the defrost setting on your microwave oven.

Laundry

- Operate automatic clothes washers only when they are fully loaded or set the water level for the size of your load.

Outdoor Water Conservation Tips

General

- Check your well pump periodically. If the automatic pump turns on and off while water is not being used, you have a leak.
- Plant native and/or drought-tolerant grasses, ground covers, shrubs, and trees. Once established, they do not need water as frequently and usually will survive a dry period without watering. Small plants require less water to become established. Group plants together based on similar water needs.
- Install irrigation devices that are the most water efficient for each use. Micro and drip irrigation and soaker hoses are examples of efficient devices.
- Use mulch to retain moisture in the soil. Mulch also helps control weeds that compete with landscape plants for water.
- Avoid purchasing recreational water toys that require a constant stream of water.
- Avoid installing ornamental water features (such as fountains) unless they use recycled water.

Car Washing

- Use a shut-off nozzle that can be adjusted down to a fine spray on your hose.
- Use a commercial car wash that recycles water. If you wash your own car, park on the grass so that you will be watering it at the same time.

Lawn Care

- Avoid over watering your lawn. A heavy rain eliminates the need for watering for up to two weeks. Most of the year, lawns only need one inch of water per week.
- Water in several short sessions rather than one long one, in order for your lawn to better absorb moisture.
- Position sprinklers so water lands on the lawn and shrubs and not on paved areas.

- Avoid sprinklers that spray a fine mist. Mist can evaporate before it reaches the lawn. Check sprinkler systems and timing devices regularly to be sure they operate properly.
- Raise the lawn mower blade to at least three inches or to its highest level. A higher cut encourages grass roots to grow deeper, shades the root system, and holds soil moisture.
- Plant drought-resistant lawn seed.
- Avoid over-fertilizing your lawn. Applying fertilizer increases the need for water. Apply fertilizers that contain slow-release, water-insoluble forms of nitrogen.
- Use a broom or blower instead of a hose to clean leaves and other debris from your driveway or sidewalk.
- Avoid leaving sprinklers or hoses unattended. A garden hose can pour out 600 gallons or more in only a few hours.

Pool

- Install a new water-saving pool filter. A single back flushing with a traditional filter uses 180 to 250 gallons of water.
- Cover pools and spas to reduce evaporation of water.

Appendix B: Disaster Supplies Checklists

The following list is to help you determine what to include in your disaster supplies kit that will meet your family's needs.

First Aid Supplies

Supplies	Home (√)	Vehicle (√)	Work (√)
Adhesive bandages, various sizes			
5" x 9" sterile dressing			
Conforming roller gauze bandage			
Triangular bandages			
3" x 3" sterile gauze pads			
4" x 4" sterile gauze pads			
Roll 3" cohesive bandage			
Germicidal hand wipes or waterless, alcohol-based hand sanitizer			
Antiseptic wipes			
Pairs large, medical grade, non-latex gloves			
Tongue depressor blades			
Adhesive tape, 2" width			
Antibacterial ointment			
Cold pack			
Scissors (small, personal)			
Tweezers			
Assorted sizes of safety pins			
Cotton balls			
Thermometer			
Tube of petroleum jelly or other lubricant			
Sunscreen			
CPR breathing barrier, such as a face shield			
First aid manual			

Non-Prescription and Prescription Medicine Kit Supplies

Supplies	Home (√)	Vehicle (√)	Work (√)
Aspirin and non-aspirin pain reliever			
Anti-diarrhea medication			
Antacid (for stomach upset)			
Laxative			
Vitamins			
Prescriptions			
Extra eyeglasses/contact lenses			

Sanitation and Hygiene Supplies

Item	(√)	Item	(√)
Washcloth and towel		Heavy-duty plastic garbage bags and ties for personal sanitation uses and toilet paper	
Towelettes, soap, hand sanitizer		Medium-sized plastic bucket with tight lid	
Tooth paste, toothbrushes		Disinfectant and household chlorine bleach	
Shampoo, comb, and brush		A small shovel for digging a latrine	
Deodorants, sunscreen		Toilet paper	
Razor, shaving cream			
Lip balm, insect repellent			
Contact lens solutions			
Mirror			
Feminine supplies			

Equipment and Tools

Tools	(√)	Kitchen Items	(√)
Portable, battery-powered radio or television and extra batteries		Manual can opener	
NOAA Weather Radio, if appropriate for your area		Mess kits or paper cups, plates, and plastic utensils	
Flashlight and extra batteries		All-purpose knife	
Signal flare		Household liquid bleach to treat drinking water	
Matches in a waterproof container (or waterproof matches)		Sugar, salt, pepper	
Shut-off wrench, pliers, shovel, and other tools		Aluminum foil and plastic wrap	
Duct tape and scissors		Resealable plastic bags	
Plastic sheeting		Small cooking stove and a can of cooking fuel (if food must be cooked)	
Whistle			
Small canister, ABC-type fire extinguisher		**Comfort Items**	
Tube tent		Games	
Compass		Cards	
Work gloves		Books	
Paper, pens, and pencils		Toys for kids	
Needles and thread		Foods	
Battery-operated travel alarm clock			

Food and Water

Supplies	Home (√)	Vehicle (√)	Work (√)
Water			
Ready-to-eat meats, fruits, and vegetables			
Canned or boxed juices, milk, and soup			
High-energy foods such as peanut butter, jelly, low-sodium crackers, granola bars, and trail mix.			
Vitamins			
Special foods for infants or persons on special diets			
Cookies, hard candy			
Instant coffee			
Cereals			
Powdered milk			

Clothes and Bedding Supplies

Item	(√)	(√)	(√)	(√)
Complete change of clothes				
Sturdy shoes or boots				
Rain gear				
Hat and gloves				
Extra socks				
Extra underwear				
Thermal underwear				
Sunglasses				
Blankets/sleeping bags and pillows				

Documents and Keys

Make sure you keep these items in a watertight container

Item	Stored (√)
Personal identification	
Cash and coins	
Credit cards	
Extra set of house keys and car keys	
Copies of the following:	
• Birth certificate	
• Marriage certificate	
• Driver's license	
• Social Security cards	
• Passports	
• Wills	
• Deeds	
• Inventory of household goods	
• Insurance papers	
• Immunization records	
• Bank and credit card account numbers	
• Stocks and bonds	
Emergency contact list and phone numbers	
Map of the area and phone numbers of places you could go	

Appendix C:

Homeland Security Family Communications Plan

Your family may not be together when disaster strikes, so plan how you will contact one another and review what you will do in different situations.

Out-of-State Contact Name: Telephone Number:
Email: Telephone Number:

Fill out the following information for each family member and keep it up to date.

Name: Social Security Number:
Date of Birth: Important Medical Information:

Name: Social Security Number:
Date of Birth: Important Medical Information:

Name: Social Security Number:
Date of Birth: Important Medical Information:

Name: Social Security Number:
Date of Birth: Important Medical Information:

Name: Social Security Number:
Date of Birth: Important Medical Information:

Name: Social Security Number:
Date of Birth: Important Medical Information:

Where to go in an emergency. Write down where your family spends the most time: work, school and other places you frequent. Schools, daycare providers, workplaces and apartment buildings should all have site-specific emergency plans.

Home
Address:
Phone Number:
Neighborhood Meeting Place:
Regional Meeting Place:

Work
Address:
Phone Number:
Evacuation Location:

School
Address:
Phone Number:
Evacuation Location:

Work
Address:
Phone Number:
Evacuation Location:

School
Address:
Phone Number:
Evacuation Location:

Other place you frequent:
Address:
Phone Number:
Evacuation Location:

School
Address:
Phone Number:
Evacuation Location:

Other place you frequent:
Address:
Phone Number:
Evacuation Location:

Important Information	Name	Telephone #	Policy #
Doctor(s):			
Other:			
Pharmacist:			
Medical Insurance:			
Homeowners/Rental Insurance:			
Veterinarian/Kennel (for pets):			

Other useful phone numbers: **9–1–1 for emergencies.** Police Non-Emergency Phone #:

Every family member should carry a copy of this important information:

Other Important Phone Numbers & Information:

Family Communications Plan

Contact Name:
Telephone:

Out-of-State Contact Name:
Telephone:

Neighborhood Meeting Place:
Meeting Place Telephone:

Dial 9–1–1 for Emergencies!

< FOLD HERE >

Other Important Phone Numbers & Information:

Family Communications Plan

Contact Name:
Telephone:

Out-of-State Contact Name:
Telephone:

Neighborhood Meeting Place:
Meeting Place Telephone:

Dial 9–1–1 for Emergencies!

< FOLD HERE >

Other Important Phone Numbers & Information:

Family Communications Plan

Contact Name:
Telephone:

Out-of-State Contact Name:
Telephone:

Neighborhood Meeting Place:
Meeting Place Telephone:

Dial 9–1–1 for Emergencies!