



Emergency Preparedness: Biological & Chemical Terrorism

Introduction

Terrorism is the use of force or violence against people 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.

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

Bioterrorism is the intentional use of harmful biological substances or germs to cause widespread illness and fear. Bioterrorism is different from chemical, nuclear or radiation attacks, which are designed to cause immediate damage and release dangerous substances into the air and surrounding environment. Because it would not usually be signaled by an explosion or other obvious cause, a biological attack may not be recognized immediately and may take local health-care workers time to discover that a disease is spreading.

Biological Agents

- Include bacteria, viruses, fungi, other microorganisms and their associated toxins.
- Can adversely affect human health, including allergic reactions, serious medical conditions and death.
- Are widespread in the natural environment of water, soil, plants and animals.
- Reproduce rapidly and survive in a variety of settings.

Chemical Terrorism is the intentional use of harmful chemical warfare agents, including poisonous gases, vapors, aerosols, liquids and solids, that have toxic effects on people, animals or plants. Exposure to chemical warfare agents can cause serious injuries and death. Severity of injury depends on the type and amount of the chemical warfare agent used and the duration of the exposure.

- Some chemical agents may be odorless and tasteless.
- Chemicals can have immediate effects (a few seconds to a few minutes) or delayed effects (2 to 48 hours).
- While potentially lethal, chemicals are difficult to deliver in lethal concentrations.
- Outdoors, chemical contaminants often dissipate rapidly.

Biological and Chemical Agents as Weapons of Mass Destruction

Some agents can cause diseases that can be spread by infected people, such as smallpox, while others are only dangerous when a person comes into direct contact with the biological agent, such as anthrax. Here are some of most common agents:

- Anthrax is a severe infectious biological disease caused by *Bacillus anthracis* and can be acquired from contact with anthrax-infected animals or anthrax-contaminated animal products.
- Botulism toxins are among the most common compounds explored by bioterrorists.
- Chemical agents (chlorine, phosgene, Agent Orange, mustard gas) are extremely toxic in small quantities.
- Nerve agents (GA-Tabun, GB-Sarin, GD-Soman, GF and VX) are particularly toxic chemical warfare agents.

- Plague (bioterrorist release) could result in a rapid spread of the pneumonic form of the disease, which could have devastating consequences.
- Ricin is a serious threat since this biological agent is easily produced from processed castor beans.
- Smallpox is a highly contagious disease unique to humans.
- Smallpox was eradicated after a successful worldwide vaccination program.
- Routine vaccination was stopped as it was no longer necessary for prevention.
- No more than an estimated 20 percent of the population has any immunity from previous vaccination.

Be Prepared for Biological and Chemical Terrorist Attacks at Home and Work

Develop Emergency Plans

Early preparation will save lives, fear and panic. Families, schools and workplaces should develop written plans for terrorism and technological hazards. Plans should be easily accessible and practiced regularly. Family plans should be shared with other friends and extended family members.

- 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.
- HEPA filters remove particles in the 0.3 to 10-micron range and will filter out most biological agents that may enter your house.

Create Emergency Supply Kits

Families, schools and workplaces should have supply kits. Home kits should include all family members and pets for at least three days and be portable for evacuation. Kits should include:

- Duct tape, scissors, plastic sheeting and towels (for window and door sealing)
- Food and water
- Medicines, first-aid kit, toiletries
- Flashlight, radio (wind-up or battery operated), extra batteries
- Plastic bags and five-gallon bucket (for waste)

During a Bioterrorism or Chemical Attack: Evacuation and Shelter-in-Place

Evacuation from a building, neighborhood or city is the most common protective action taken against biological and chemical terrorist attacks. However, it may not be the best action in all situations, particularly one that is widespread. If the threat covers a large geographical area, evacuation may not be the safest protective measure. Sheltering-in-place should be considered and actions immediately taken to increase protection from the potential physical effects from bioterrorism, chemical or radiological attacks. Follow the instructions of local authorities via radio, TV, Web or emergency alert systems.

Shelter-in-place requires people to take immediate shelter where they are, whether at home, work, school or someplace in between, typically for only a few hours. Local authorities may instruct you to shelter-in-place if biological, chemical or radiological agents are released into the environment.

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

- Move away quickly
- Wash with soap and water, shower if necessary
- 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, dispose of contaminated items
- Wash yourself with soap and water, shower if necessary, and put on clean clothes
- Seek medical assistance (be prepared to avoid others or even quarantined)

After a Bioterrorism or Chemical Attack

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 official warnings and instructions on how to proceed. The delivery of medical services for biological and chemical events may be handled differently to respond to increased demand. It is important for you to pay attention to official instructions via radio, TV, Web or emergency alert systems.

Information Sources

www.eden.lsu.edu; www.fema.gov;
www.ready.gov; www.dhs.gov; www.redcross.org;
www.cdc.gov

Reviewed by Daniel L. Goerlich, Associate Director Economy, Community, and Food, Virginia Cooperative Extension, Virginia Tech



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