Bioterrorism preparedness: Answers for the health-system pharmacist

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This presentation describes preparedness for bioterrorism in health care facilities, the findings of some applicable disaster research, and the role of and resources available to pharmacists and other health care professionals.

Preparedness in health care facilities. We who work in health care facilities often take them for granted; we forget about their vulnerabilities and limitations. Hospitals have a high density of people, many of whom are physically or mentally compromised. It is difficult for patients to tolerate the rapid moves and other changes that might be needed in an emergency. Hospitals are complex structures. They have miles of pipes and ducts, which are tempting targets for bioterrorists. Similarly vulnerable are the water and power supplies on which these facilities depend. Hospitals are important to the community, so if one shuts down, there could be a major problem.

Health care facilities and their staffs, patients, and visitors must be protected against the many threats they face. In planning such protection, the first step is to examine what is already in place. Hospitals have an employee health system, which would certainly be involved in immunization and chemoprophylaxis for the staff. Hospitals have infection control policies, which could be used to monitor antimicrobial resistance in the event of an attack.

Implications of research findings. Social scientists have examined public perceptions about the threat of a disaster. Many Americans think, for example, that a crime such as someone putting anthrax spores into a heating and ventilation system is quite unlikely. If it does occur, they think, it will happen elsewhere, and if it happens here, it will not be that bad, and if it really is bad, there is nothing that can be done about it anyway. Over half the people living in California stated that they believed that an earthquake would never affect their lives—this despite the fact that much of California lies within a major earthquake zone. Disasters are low-probability events—they are not likely to happen to any one person or facility. So pharmacists may have a hard time convincing health care executives of the need for disaster preparedness.

Biological agents are relatively unlikely weapons of terrorism, but they can cause a great number of casualties. Experience shows that a bioterrorism attack is likely to be the work of a loner, cult, or militia group. The worst-case scenario is state-sponsored bioterrorism.

If a biological incident occurs, we will not have to advise people to come to the hospital—they will show up on their own in large numbers. In most mass-casualty incidents in the United States, over half the patients arrive without assistance from the emergency medical service (EMS). People do not wait to be picked up. They hurry to the nearest facility, even if a more appropriate one is not much farther. Volunteers will come, too. People might arrive and claim to be experts on infectious diseases or terrorism. The person on the hospital’s doorstep could truly be an expert on infectious diseases—or an overzealous reporter who wants access to the facility.

The news media, in covering the story, is likely to provide some flawed information. During an anthrax hoax in Indianapolis, the first thing I heard out of a television reporter’s mouth was misinformation about the supposed attack and the suspected biological agent.

In the event of bioterrorism, some people may break into pharmacies to obtain antimicrobials, but the type of chaos and mass antisocial behavior portrayed by Hollywood is unlikely.

Will health care providers fail to assume their professional roles in case of biological attack? This is...
probably not a concern for pharmacists, who tend to show up for work unless they are on their deathbed, and is similarly unlikely to be a problem with other health care providers. But eventually practitioners are going to “burn out” and need replacement, and it will be important for the state and federal government to help bring in additional health care workers.

Health care professionals’ role in preparedness. Effective disaster preparedness starts at the local level, because lives are saved by the actions and planning of local people. Practitioners must link up and get organized to deal with the unthinkable. No state or federal agency is going to be able to meet all the challenges of a large biological incident.

How do we manage an incident? There are two major phases, which overlap. The first one is to catch and stop the perpetrators. The Federal Bureau of Investigation (FBI) and the police are in charge of that. Before that phase is over, we are already dealing with the consequences of the event. The Federal Emergency Management Agency (FEMA) is in charge of managing those consequences. FEMA assigns the Public Health Service (PHS) responsibility for health and medical aspects, while the Red Cross has responsibility for sheltering and mass care. Many other federal partners (e.g., Department of Veterans Affairs, Department of Defense) support these agencies with people, equipment, and supplies.

Announced versus unannounced attack. Suppose someone announces that he or she has released anthrax spores into the ventilation system of a large public building. The FBI will first consider the possibility that the announcement is a hoax. However, even a hoax can disrupt the services of a community, including patient care.

In an unannounced attack, a terrorist releases a biological agent, say anthrax, and remains silent. Symptoms would not show up for days. The lag in diagnosis has important clinical implications. If treatment for some forms of anthrax is started immediately after exposure, the chances of clinical success are quite good, but if treatment for inhalation anthrax is delayed until symptoms appear, then survival may be unlikely. With an unannounced attack, individual health care facilities are the first responders. The immediate challenge is to make an accurate diagnosis, which can be very hard. Then, once a biological weapon is suspected, the facility has to recognize that its patients may represent only part of a larger pool of victims and must alert the local, state, and federal authorities.

Decontamination. When dealing with a biological attack that occurred a couple of days earlier, decontamination is generally not an issue. The approach seems to be shifting from hosing patients down to not decontaminating at all. If the patient is decontaminated, removing the clothing is going to take care of most of the problem. At one time, a dilute bleach (sodium hypochlorite) solution was thought to be the ultimate decontaminant. However, U.S. Army chemical warfare experts have good data indicating that soap and water may be best. A health care facility should decide whether to maintain fixed or portable sites for decontamination.

Planning. Comprehensive emergency management (CEM) represents the state of the art in planning for and managing emergencies in the United States. The four phases of CEM are preparing for emergencies, treating patients, facilitating a return to normalcy, and preventing or mitigating future emergencies. CEM improves how we do business and focuses on the big picture by including all hazards. It eliminates the need for separate plans for separate crises (e.g., bioterrorism, tornadoes, and lengthy utility outages). CEM is based on research, because it is best not to base actions on unsupported opinions when lives are at risk. CEM includes dealing with the news media, mass fatalities, and the psychological impact of the event on the public and the staff. It discusses who is going to pay for everything, and it covers the roles and responsibilities of both the administrative and clinical staffs of the health care facility.

We need to take a realistic inventory of our capabilities. Pharmacists should meet with their wholesaler, review scenarios, and see what supplies can be obtained within 12, 24, and 36 hours. There may be resistance from some staff members, because they may think they are too busy, and from some managers, because preparedness costs time and money. Experts within the facility and the community should be identified.

We are all on too many committees, but I urge pharmacists to get involved with their facility’s disaster-planning committee and with emergency-preparedness initiatives in the community. That does not mean that pharmacists have to be members and attend every meeting, but they should talk to the appropriate people and make themselves available. Preparedness must be made a priority. Pharmacists can offer their expertise to universities. I lecture on bioterrorism at both colleges of pharmacy in Indiana. The students say they have never thought about the topic but are glad to hear about it, and they start their careers knowing something about how to get help during a crisis.

Resources. Who are pharmacists going to call on if a bioterrorist act occurs? First are the local network, the EMS, pharmacist colleagues in other facilities, and the buying group. The regional poison control center can also help. Beyond local resources, pharmacists can look to their state agencies and local and state professional associations. The state health department will take the lead on recognizing that an event has occurred. There are also state emergency management groups and Na-
tional Guard civil-support teams that can rapidly determine if a biological incident has occurred. That determination will help the governor decide whether to call for federal help or to handle the situation with state resources only.

At the national level, the laboratory facilities of the Centers for Disease Control and Prevention (CDC) are invaluable in identifying biological agents. CDC recently signed a memorandum of understanding with the Department of Veterans Affairs to establish a national stockpile of vaccines and antimicrobials. This will help—but cannot replace—local planning. Supplies from the stockpile will not arrive immediately. The Occupational Safety and Health Administration will have something to say to a facility after a disaster if not enough personnel protective equipment (e.g., N95 respirators) was available. The U.S. Army Medical Research Institute for Infectious Diseases, in Fort Detrick, Maryland, has world experts on bioterrorism. FEMA is in charge of the federal response plan, which determines how the federal government directs resources to the affected state or states.

National pharmacy professional associations, such as the American Society of Health-System Pharmacists, are key resources. Some 120 cities have received initial funding from the Domestic Preparedness Program, but it focuses on the “first-response community” (i.e., fire and rescue personnel and the police) and still falls short in meeting the needs of health care facilities. The Metropolitan Medical Response System (MMRS), managed by PHS, links public health services with health care facilities. The MMRS provides a framework that lets health systems prepare for biological or chemical terrorism. The Joint Commission on Accreditation of Healthcare Organizations will probably incorporate disaster preparedness into how it evaluates health care facilities.

Whenever there is a large or politically important public event, such as the Olympics, the federal government prepares disaster resources for release. If a disaster happens, these resources will be available. However, federal assets cannot be everywhere all the time. One of the world’s largest sporting events, the Indianapolis 500, occurs in my hometown. The medical planning for the race is complex and extensive, but it is handled locally.

**What pharmacists can do.** Where we work determines what our role is in disaster preparedness. It does not matter if a pharmacist is employed by a health care facility, the pharmaceutical industry, or academia—there will be some type of role for that pharmacist to fill. For patients, our roles in a disaster will be pretty much what we do every day—counseling about compliance and adverse effects and providing general drug information. Pharmacists must ensure that they meet patients’ needs and will have to be creative to meet these needs. A pharmacy director faced with hundreds of people coming in for medication after a bioterrorist act may want to use the hospital auditorium and have a physician, a public health official, and a pharmacist address the group. The pharmacist could emphasize the importance of taking the medicine as directed or the need to return in a week because a full month’s supply cannot be dispensed immediately. Pharmacists will need to find ways to meet the tremendous demand for various medications and to advise prescribers about treatment options; they will get many telephone calls all at once asking what can be done and what the alternatives are.

Pharmacists, as health care professionals and as citizens, should become involved in planning a community’s response to bioterrorism. They should also make advance provisions for their own families. Pharmacists on the frontline will be better able to focus on the task at hand knowing that the family is prepared, and family members will feel better knowing that Mom or Dad is also as safe as possible.

**Conclusion.** Having to cope with a biological attack is a small but definite possibility for any health care facility. Thorough planning takes a big effort but is a necessity of our time.

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*See, for example, the extensive information available through ASHP’s Emergency Preparedness–Counterterrorism Resource Center (www.ashp.org/public/proad/emergency/em_prep.html).*