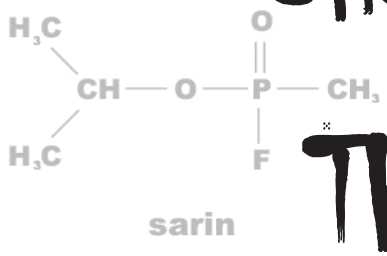
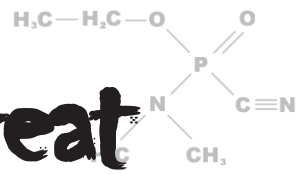
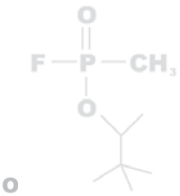
Chemical Terrorism: The Next Threat







By Mr. Steven L. Hoenig

Since the events of 11 September 2001, the American people, the federal government, and state and local entities have been on alert for the next terrorist attack. And the amount of resources dedicated to preparing for the next attack has reached billions of dollars (see the table below).[1] The United States has committed an enormous amount of time, personnel, and training and is more prepared for a biological attack than ever before.

1998	1999	2000	2001	2002	2003*
$89 million	$343 million	$432 million	$503 million	$2.9 billion	$4.3 billion
* Budget requested for Fiscal Year 2003.					

Bioterrorism Preparedness Funding

Since the first anthrax letter of September 2001, the number of incidents of suspicious white powders sent to health labs has increased dramatically. Within a few weeks of the first anthrax incident, the Illinois Department of Health received a total of 1,496 samples requiring testing. The Michigan and Oklahoma Departments of Health received 228 and 762 samples, respectively. The US Army Medical Research Institute of Infectious Diseases (USAMRIID) received 5,078 samples. By the end of January 2002, the Florida Department of Health received 9,148—the Miami laboratory received 6,098 samples, the Jacksonville laboratory received 1,864 samples, and the Tampa laboratory received 1,186 samples. Fortunately, since the first case in 2001, most of the cases of anthrax in the mail have turned out to be common household products (such as flour, baking powder, and cornstarch).

The vigilance of first-responder personnel has proven to be an effective deterrent. However, the resources so far have been directed to bioterrorism (rightly justified to meet the threat). Now we need to focus on an area that has been looming overhead but ignored for some time—chemical terrorism. But what is the likelihood that the next attack will be chemical and not biological? For the answer, several factors must be considered:

- The level of fear that a chemical attack creates.
- The limited amount of time required for a chemical agent to be effective.
- The limited resources for the treatment of victims.
- The level of protection and treatments for victims and first responders.
- The recognition and detection limitations.
- The amount of agent release.

The first and foremost reason for a terrorist attack is obviously to invoke terror. There is little doubt that the 1995 Tokyo subway attack caused fear and panic in the victims, emergency responders, health officials, and general public. The fear and panic associated with the subway attack was much greater than the fear and panic associated with the anthrax mail incidents. Imagine an office building in which people suddenly fall unconscious at their desks. People

would panic and create a situation of mass hysteria to exit the room or building. The amount of exposure or toxicity and the number of injuries would be immense.

The amount of time for chemical agents to be effective is only a matter of seconds to minutes. Exposure to a nerve agent can be fatal in as little as fifteen minutes. If a nerve-agent antidote is not administered within the appropriate time, death will occur. Immediate medical response is needed if massive deaths are to be avoided. In contrast, the average time period between exposure and the development of symptoms for anthrax ranges between 2 and 72 days. The availability of rapid detection methods allows for the timely and orderly diagnosis, treatment, and intervention to anthrax exposure.

The utilization of resources is a critical factor in a chemical attack because the effect on victims is immediate. In the Tokyo subway attack, more than 5,500 people were affected. A large number of the victims, all requiring immediate diagnosis and/or on-site treatment, can seriously tax emergency-responder personnel and resources. The local hospitals would be overwhelmed, and the supply of nerve-agent antidote would be exhausted in minutes (at facilities with limited supplies). In the case of an anthrax attack, where the time factor is extended, the victims could be sent to outlying hospitals so that no one hospital is overwhelmed and the resources are not taxed. Additional prophylaxes and vaccines can be shipped in for treatment. Victims exposed to anthrax have the luxury of time on their side; victims exposed to nerve agents do not.

Another factor to be considered is the first-responder personnel. Most first responders have the option of being vaccinated against anthrax for protection, but there are no vaccines for nerve agents. If first responders treat victims of an unknown attack without first donning the proper personal protective equipment (PPE), they could become victims themselves. If a victim is assessed and nerve-agent exposure is suspected, the proper treatment can be administered. For protection against anthrax exposure, adequate protection is provided by using the N95 respirator face mask, latex gloves, and a smock or coveralls. However, for nerve-agent exposure, a full-face respirator, impermeable gloves, and an impermeable suit would be required for appropriate protection. PPE is not a standard-issue item for police and emergency medical service personnel.

Detection is another critical factor to consider. Everybody is on the outlook for suspicious white powders. The US Postal Service has installed biological detectors in mail facilities, and there are stations with biological early-warning systems located in some cities (to monitor the environment for biological agents in the air). Even though detection systems for chemical agents are available, there are currently no active monitoring systems in place. Nerve agent could be concealed in something as simple as a cologne bottle, and a massive release could go unnoticed until large numbers of people become sick.

Another factor to consider is the amount of agent released. A large-scale biological attack would require a significant amount of biological agent to be released in a populated area. In a chemical attack, only a small amount of agent needs to be released to be effective. A single drop of nerve agent on the skin can be fatal. A small amount of nerve-agent vapor released into recirculated air in an office building would prove deadly to dozens of people—hundreds would become ill almost immediately. In the Tokyo attack, out of the 5,500 people who fell ill, only 11 people died. A properly deployed nerve agent has the potential to kill hundreds or even thousands of people.

The results of a chemical attack have the potential to be enormous. Our efforts are targeted toward a potential biological attack. But now, more than ever, there is a pressing need to direct our resources to prepare for a possible chemical attack. To ignore the possibility that it may happen is to invite disaster. The best defense is to educate, train, and equip those entrusted to protect the citizens and visitors of this great Nation.

Endnotes

[1] Dean Rosen, Senate HELP Committee.

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