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It's in the Mail

In the fall of 2001, letters containing anthrax bacteria were sent through the U.S. mail. Twenty-two people were infected with anthrax. Five of them died, including two postal employees. The criminal investigation of those attacks continues.

People were on edge. In the year immediately following the attacks, the U.S. Postal Inspection Service responded to approximately 17,000 incidents of suspicious substances. It became clear that postal inspectors needed additional tools to ensure rapid response capabilities to determine if a substance posed a threat.

"During and immediately after the [anthrax] crisis, any powder in the mail was met with suspicion. People were understandably concerned, and even though there hasn't been a similar attack since, those concerns continue," says Tripp Brinkley, postal inspector/program manager, Dangerous Mail Investigations and Homeland Security Group, U. S. Postal Inspection Service.

"As a law enforcement arm of the Postal Service, it's our responsibility to respond to threats in the mail, and we recognized the need to enhance our capabilities," Brinkley says. "Postal inspectors have investigated threatening mail and suspected explosive devices for more than a hundred years, and we had the equipment for those threats, but bioterrorism added a new dimension. We quickly realized that we needed additional tools to ensure employees and the public were safeguarded while minimizing the effect on postal operations."

A biohazard detection system for mail processing equipment was developed for the Postal Service after the anthrax attacks. The system sounds an alarm if anthrax is detected. In addition, to ensure a rapid, mobile response to unidentified substances found in the mail and easy access to field screening equipment, the Inspection Service ordered 35 specially equipped SUV response vehicles. The vehicles, which are deployed strategically for use in all 50 States and Puerto Rico, are used to transport field screening and response equipment to reports of suspicious substances in the mail, possible explosive devices, or any biohazard detection system alert.

"We've had a lot of interest from other law enforcement agencies that want a similar type of vehicle," Brinkley adds. "The feedback on the trucks has been excellent. Everything our inspectors need is in one place, the vehicle will get there in any kind of weather, and it brings all the tools they need to assess a suspicious item at the scene."

Brinkley says a company that specializes in response vehicles and ambulances provided the SUVs—four-wheel-drive Chevrolet Suburbans with large gasoline engines, a towing package, and heavy-duty suspension. They have

Anthrax: What You Need To Know

What is Anthrax?

Anthrax is a serious disease caused by Bacillus anthracis, a bacterium that forms spores. A bacterium is a very small organism made up of one cell. Many bacteria can cause disease. A spore is a cell that is dormant (asleep) but may come to life with the right conditions.

How is Anthrax Transmitted?

Anthrax is not known to spread from one person to another. Humans can become infected with anthrax by handling products from infected animals or by breathing anthrax spores from infected animal products (e.g., wool). People can also become infected with gastrointestinal anthrax by eating undercooked meat from infected animals.

Anthrax can also be used as a weapon, as was done in the United States in 2001 when letters containing

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storage and work areas, the ability to run alternating current (AC) and direct current (DC) from the back of the vehicle, and other modifications that provide a mobile platform to support inspectors' assessments of unidentified substances and suspicious mail. They also have additional lighting, security, and the latest UHF and VHF encryption-ready radios to enable inspectors to communicate with other public safety agencies.

Specific features include the following:

- Customized rear storage area configured for portable x-ray equipment, evidence collection supplies, and other gear and equipment, with multiple locking compartments.
- Pull-out work shelf.
- Built-in 3,000-watt power inverter (coupled with a high-output alternator and twin battery system).
- 110-volt AC and 12-volt DC outlets in the front and rear to power all equipment.
- Magnet-mounted floodlights for scene lighting (extension cords allow them to be moved to distant scenes).
- Siren; public address system; and covert front, rear, and side emergency lights.
- Engine idler and override (the ignition key can be removed with the engine running at increased idle, providing electrical power while the vehicle is secured).
- UHF and VHF radios for multiple communication capabilities. Each radio holds 250 programmed frequencies, with encryption if necessary, allowing postal inspectors to communicate with any other law enforcement agency or first responders in the area.
- Solar-powered automatic ventilation system to cool the cargo area in warm weather.
- Security panels for the cargo area (steel mesh inside windows and a solid compartment door with push-button cipher lock) to reduce likelihood of equipment theft.
- Shore power to enable electrical support while parked (with automatic ejection system to disconnect cord when engine is started).

The vehicles are equipped with hazardous materials personal protective equipment and other items such as radiation detectors, gas detectors, and field-screening equipment for powders encountered in the mail. The Inspection Service adapted existing technology to suit its needs.

"We looked at what other first responders, such as fire departments and hazardous materials teams, use to assess unknown substances," Brinkley says. "We decided not to rely on technology that attempts to identify the material with multiple field assays. In several cases, field testing by other first responders used up all the powder and there was nothing left for a lab to test. We also wanted to avoid false negatives or false positives that are too common with many field assays. We developed our systems to use a tiny amount of material, and instead of attempting to identify the material, we focus on ruling out dangerous substances."

Protocols are based on the Centers for Disease Control and Prevention (CDC) list of bioterrorism agents, such as anthrax and ricin. The CDC classifies agents with

Anthrax: What You Need To Know *(continued)*

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Types of Anthrax

Skin (cutaneous). The first symptom is a small sore that develops into a blister, then into a skin ulcer with a black area in the center. In most cases, early treatment with antibiotics can cure cutaneous anthrax. Even if untreated, 80 percent of people who become infected with cutaneous anthrax survive.

Lungs (inhalation). Initial symptoms may resemble a common cold—sore throat, mild fever, muscle aches, and malaise. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax is usually fatal.

Digestive (gastrointestinal). Initial signs of nausea, loss of appetite, vomiting, and fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25 percent to 60 percent of cases.

Treatment

Antibiotics are used to treat all three types of anthrax. Early detection and treatment are important.

Prevention after exposure. Treatment is different for a person who has been exposed to anthrax but is not yet sick. Health care providers will use antibiotics combined with the anthrax vaccine to prevent anthrax infection.

Treatment after infection. Treatment is usually a 60-day course of antibiotics. Success depends on the type of anthrax and how soon treatment begins.

Information Source: Centers for Disease Control and Prevention website, **www.bt.cdc.gov/agent/antrax/needtoknow.asp.**

recognized bioterrorism potential into three priority areas. See *www.bt.cdc.gov/agent/agentlist-category.asp* for more information.

Of primary importance is to eliminate a suspicious substance as dangerous. "Inspectors use field screening to rule out the presence of a bioterrorism agent or weapon," Brinkley says. "We're not necessarily trying to identify the substance. If it can't be ruled out as a weapon, or if it is associated with a credible threat, we transport it to a lab for definitive testing.

"We brought the technology together based on what we encounter in the mail, and it requires more space than what our typical vehicles can handle. We designed the trucks to transport and support the equipment and supplies we need for an effective response, but they really aren't very different from trucks used by other agencies."

The Inspection Service also used the vehicles to assist its post-hurricane assessment of conditions of postal facilities during the 2005 hurricane season. The personal protective equipment in the trucks came in handy, and the trucks also carry equipment to check for dangerous fumes.

For additional information on the special response vehicles used by the U.S. Postal Inspection Service, contact Tripp Brinkley, postal inspector/program manager, Dangerous Mail Investigations and Homeland Security Group, 202–268–5088 or TCBrinkley@uspis.gov.

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