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## Emergency Response Outside the Envelope

*By Dr. Ivan Walks*

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**The District of Columbia's former chief health officer considers the lessons learned from the response to the spate of deadly anthrax-infected letters.**

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In December 2002, more than a year after anthrax-laden letters were sent to the Washington, D.C., offices of two U.S. Senators, authorities were still working to clean the mail processing center through which the letters had passed. While authorities called the fumigation process a success, the Washington, D.C., facility, which has been closed since October 2001, is not expected to reopen until late spring. That's just one indication of the extent to which the anthrax attacks presented extraordinary challenges to all of the various government and private groups charged with emergency response and disaster management in the region.

The problems that ensued from the anthrax incident were not the result of a lack of planning. Some basic planning for disaster response and counterterrorism (including bioterrorism) had been conducted before that event as a joint effort by the Metropolitan Washington Council of Governments (MWWCOG), a regional organization comprising 17 local governments surrounding the nation's capital and selected members of the Maryland and Virginia legislatures, the U.S. Senate, and the U.S. House of Representatives.

But the anthrax attacks revealed a number of deficiencies in the MWWCOG's basic disaster response plan. One shortcoming was that while the response plan considered a range of scenarios, it lacked the specific operational details that were necessary to ensure a smooth response to a crisis. For example, while there was a general requirement that the member agencies communicate with each other, no guidelines existed to tell participants how this communication should take place.

As chief health officer for the District of Columbia during the anthrax crisis, the author was given the role of incident commander during the emergency, responsible for the coordination of local, regional, and federal resources. Some of these tasks involved directing physical assets, such as ensuring that law enforcement agencies were providing crowd control measures where needed and getting property managers to open necessary facilities and keep them running around the clock.

Other tasks involved the dissemination to emergency response team members of critical information such as the reports from hazmat teams about other possible anthrax events, and information coming in from the Centers for Disease Control and Prevention (CDC) and other states (New York and New Jersey were also experiencing anthrax events).

Through this involvement, the author experienced firsthand the strengths and weaknesses of the region's disaster response planning. This article highlights the most important lessons learned (specifically with regard to information sharing and incident command training) and suggests some changes for the future.

**Background.**

Before exploring these issues, a brief review of the anthrax affair as it played out in the Washington, D.C., region will help to set the discussion in the proper context. On October 15, 2001, an aide to Senator Tom Daschle (D-SD) opened a letter that contained anthrax spores. Public health officials had little experience with anthrax, and there was no reason to believe that anybody outside Daschle's office would be affected, as there was so far no evidence that the spores could infect anybody (such as postal workers) who had contact with the contaminated-but-sealed envelopes. (Weeks earlier, anthrax-contaminated letters had been received in both Florida and New York; one person had already died, and several people were infected. It was not until after Daschle's office received the contaminated letters that the first spores were discovered in mail processing facilities, however.)

Although the author's office did not have jurisdiction, the existing bioterrorism attack plan called for D.C. to activate its emergency response protocol. The first step was to contact the CDC, which would examine the letters for anthrax. The author also contacted the Attending Physician of the U.S. Capitol, a friend whose jurisdiction includes Daschle's office, to offer any necessary assistance.

**Information sharing.**

The anthrax attacks required that multiple jurisdictions communicate well and work together. That did not always occur. Communication systems and information management systems for each of the involved jurisdictions had been procured separately without any requirement for information sharing across agencies or jurisdictions. For example, some jurisdictions and agencies used two-way radios as their communications base during an emergency, while others used cell phones or landlines, and still others opted for pagers. As a result, there was no single, simple way to ensure that everybody who needed to receive specific information was contacted at any given point.

The absence of a standardized and secure information-sharing system meant that the crisis management team had to rely on telephone and face-to-face communications, which limited the speed at which information could be disseminated and shared and reduced the number of people who could be quickly notified.

*Conference calls.* Except for face-to-face meetings, the only real-time information sharing between agencies during the crisis was via a daily conference call. This 10 a.m. briefing (suggested by the head of the D.C. Hospital Association) included federal health officials, personnel from local health departments and local military hospitals, and local private providers.

While a daily conference call is an important way for members of an emergency response team to share information, the call was not secure, and it required all personnel to be available at a certain time each day. Anyone not on the call had to rely on secondhand interpretations of the information. Any crises occurring at other times required calls to the emergency room radios in the major hospitals, a system that allowed for periodic two-way communication, so that if new cases were reported, the information would be dispersed quickly. This left out of the loop others who might have valuable public-health information. If an infected person went to a local clinic or doctor's office, the infection might go unreported for some time.

*Security clearances.* During the crisis, the only secure communication across the multiple agencies and jurisdictions occurred in meetings held at the U.S. Capitol complex. Included in these meetings were representatives from the CDC, the Capitol Police, the Office of the Attending Physician of the U.S. Capitol, the Office of the Surgeon General, the Department of Health and Human Services, the D.C. Office of Emergency Preparedness, the D.C. Department of Health, the D.C. Office of Property Management, the FBI, and other law enforcement agencies.

Local government officials were also present. However, because of a lack of appropriate security clearances among many of these officials, some participants doubted the completeness of the information shared during those meetings. In fact, while federal government agency representatives had been briefed on the character of the anthrax sent through the mail, local officials were informed via the media that the anthrax used was of a "military grade." In a scenario involving a more contagious bioterrorism agent, this kind of communication delay could have had catastrophic consequences.

*Resource management.* Another problem was the lack of a comprehensive mechanism or protocol for tracking resource availability and allocation. This problem was an offshoot of the information-sharing shortfalls already described. For example, the needs and resources of the varied healthcare providers in the region were not being tracked and shared electronically because there was no information management or command-and-control system in place to track these resources. Information was gathered and shared person to person as it was needed, a cumbersome and inefficient process that used existing relationships across agency and jurisdictional lines.

*Personal relationships.* In the end, it was only personal relationships between agency leaders that facilitated communication and averted catastrophic logistical foul-ups. For example, on the day the anthrax-tainted letter arrived in Senator Daschle's office, a call was made from the author's office to a contact at the CDC to request that the agency deploy its resources to the District of Columbia as soon as the presence of anthrax was confirmed.

At 4 a.m., the CDC called to confirm that the letter did in fact contain anthrax; by 7 a.m., CDC personnel were in Washington, D.C., setting up a command center to coordinate the response. Due to this connection, it took dramatically less time than it normally takes to officially marshal federal forces in an emergency.

Another instance where a catastrophe was averted thanks to personal relationships arose shortly after the first case of inhalation anthrax was diagnosed in Washington, D.C. If anthrax was confirmed, the plan called for the immediate dispensing of antibiotics. On October 21, the CDC confirmed that postal workers from a nearby mail-processing center had been infected as had been feared, and public health officials quickly moved to implement the plan.

The antibiotics were to be distributed on the grounds of the former D.C. General Hospital. But in the race to get the distribution up and running, public health personnel did not realize that a benefit concert for the Pentagon victims had been scheduled at RFK Stadium for that same day. RFK is adjacent to the hospital, and the two facilities share the same subway stop. Had this plan gone forward, it would have meant a huge number of people arriving simultaneously for the two events (the concert was expected to draw as many as 50,000 people) and possibly an outbreak of panic among concert attendees who might have decided that they needed antibiotics as well.

Fortunately, the director of the Office of Property Management, who has jurisdictional responsibility for public buildings, immediately recognized the potential for trouble and alerted a friend who was a health official on the response team. Public safety officials, property management, and public health officials at the local and federal levels quickly worked together to move the dispensing area to a site above a different subway stop.

While chaos was averted, the potential for crisis highlighted the importance of personal relationships, as well as the need to involve a wide range of often overlooked experts when planning for an emergency. Personnel from public works, buildings, and recreation departments are not always mentioned when discussing homeland security, but as the example shows, it's risky to exclude them from planning.

These personal relationships were further tested as the full extent of the attack was realized. When the need to dispense medication to thousands of postal workers and others became clear, the protocol that should have been followed called for declaring a public health emergency. Doing so would have triggered federal requirements to provide resources, such as uniformed public-health service personnel to help screen potential victims and deliver medication. It would also have given the District the authority to access the CDC's National Pharmaceutical Stockpile, from which tens of thousands of doses of the antibiotics Cipro and doxycycline were ultimately received. However, the author was loath to ask for this declaration. At this time, Washington, D.C., was still recovering from the attacks of 9-11, and having another disaster declared would have further damaged public morale as well as the area's economy.

The author called a friend, the head of the federal Office of Public Health and Science (part of the Department of Health and Human Services), who supervises the activities of the Office of Emergency Preparedness. That phone call resulted in the necessary logistical support without

having a public health emergency declared (which seemed unnecessary given the nature of the incident). This public display of cooperation and mutual respect and of the integration of cultures became a critical component in the restoration of public confidence.

#### **Incident command.**

Another problem highlighted by the attacks is that incident command and control has historically fallen under the purview of emergency management and law enforcement agencies--with minimal input and cross-agency planning with the public health community. In general, few health officials have completed incident command training, fewer still in a multijurisdictional context.

Fortunately, the District's Emergency Management Agency--an office that links to the Federal Emergency Management Agency (FEMA) during an emergency--had the foresight to offer incident command training to select personnel from agencies that fell outside the traditional public safety area. Training consisted of several days of education on the responsibilities of an incident commander, the roles of other agencies, and how to establish and staff a command center. Thus, when the anthrax attacks occurred, healthcare personnel were not totally unversed in incident command protocols.

This cross-pollination of cultures, now formalized in the District of Columbia, allowed for a common language to be used during the crisis, enabling emergency management, property management, law enforcement, and others to play a vital role during the crisis response, led by Department of Health personnel.

Clear command and control is critical during an emergency. The incident commander needs to share information with the public as well. An informed public that trusts both the communicator and the information being delivered is much more likely to follow public health and public safety directives. Accordingly, the author scheduled regular daily briefings and gave his cell phone number to media sources so that he could be the single point of contact.

But crafting a message for the local community also meant changing that message when new facts became available. For example, it was initially believed that there was no risk of infection until contaminated envelopes were opened; after postal workers Thomas Morris Jr. and Joseph Curseen Jr. were infected and died, the message was changed, and the public was told that infection could in fact occur while envelopes were sealed. By regularly and honestly updating the message, the incident commander hoped to retain the citizens' trust and confidence.

Overall, incident command worked well, even across agencies and jurisdictions. However, as detailed earlier, much of this was due to the preexisting personal relationships. That's not a good basis for successful planning. Other mechanisms must be in place to ensure an effective response.

#### **Action items.**

A number of steps should be taken to address lessons learned from this incident.

*Security clearances.* It's now clear that local officials will be part of the response to an emergency. They need to receive appropriate security clearances quickly. One way to meet this objective might be to first identify positions and personnel who would likely be involved in a crisis in their city--including police and fire chiefs, the director of the local health department, some emergency management personnel, and leading politicians such as the mayor--and begin the clearance process in advance (for example, having them fill out the necessary applications and have the authorities complete some preliminary background investigations). In an emergency, clearances could then be quickly authorized, and no necessary personnel would be excluded from the response, as occurred in Washington, D.C.

*Coordination and communication.* In the aftermath of the anthrax attacks, one key step that was undertaken by MWCOG was to develop a Regional Emergency Coordination Plan (RECP) to provide a framework for collaboration across the region's jurisdictions. The RECP is designed to facilitate coordination and communication during emergencies in the region by specifying policies, procedures, and protocols designed to help regional officials collaborate quickly and easily.

The plan identifies 15 Regional Emergency Support Functions, from transportation and mass care to media relations and donations. For each function, the RECP identifies the various entities that might be involved in an emergency response and gives them procedures for information sharing and response coordination.

One significant element of RECP is that it allows members to use the Regional Incident Communications and Coordination System (RICCS), which permits decision makers to convene a conference call at a preestablished number within 30 minutes of an incident. This system has been in operation since spring 2002 and has already been used in real emergencies.

RICCS does not, however, allow for the sharing of visual information such as whiteboards, photographs, or text. After evaluating a range of options, both the MWCOG and the District of Columbia selected a suite of collaborative software (from E Team, Inc., of Canoga Park, California, for which the author is now senior medical advisor). This software, designed for emergency and event management, provides interoperability across agencies, connecting all the key parties in a variety of ways. For example, messages can be sent to any type of two-way pagers; e-mails and faxes can be sent to one person, a specified group, or to every person on a contact list; and more detailed information, such as graphics and audio, can be shared through the software interface. While members of the District of Columbia mayor's cabinet now use two-way Motorola pagers for emergency notification, personnel not in the cabinet or in other jurisdictions who use different technologies can be notified simultaneously.

The software platform allows officials to coordinate security; order and track the delivery of emergency supplies; access detailed plans, reports, and maps; and monitor the status of everything from health threats, weather incidents, and crowd control to the status of vaccination stocks and blood supplies. While this does not replace telephone or face-to-face communications, it allows all those who need to be involved to access and share information in real time.

*XML.* The E Team solution is by no means the only option available for emergency management, and other jurisdictions have chosen different products. But if these different systems are not compatible with one another, then serious problems remain. A group of emergency planning professionals is trying to overcome this roadblock with an open-architecture standard for technology solutions called XML (Extensible Markup Language).

Like its cousin HTML (Hypertext Markup Language), XML uses plaintext "tags" to indicate the components of a computerized document (both are commonly recognized standards promulgated by the World Wide Web Consortium). While HTML describes how a Web browser should display those components (by specifying, for example, the style or size of the font to be used), XML describes what kind of data those components are. So a doctor's record, written in XML, could have tags that indicate a patient's existing allergy or previous prescriptions. Using these tags, database programs can easily pull information from the record for storage or to help the doctor by highlighting important information (so that if a record indicates a patient allergy to a certain medication, the database program can alert the doctor if that medication is prescribed). What's more, XML offers a standardized way to share data between different database programs with proprietary file formats.

The Emergency Management XML (EM-XML) Consortium was formed by a cross-section of the emergency management industry, including the Federal Emergency Management Agency, the National Center for Crisis and Continuity Coordination, and crisis-management software providers including E Team and Blue292, to take advantage of the capabilities offered by XML. Its goal is to create an open XML-based standard for emergency management data exchange by the end of 2003. This will ensure that first responders, emergency and event managers, and public health officials in the public and private sectors can create and share critical information during a crisis without regard to the specific software solutions implemented by each agency or jurisdiction.

*Proactive notification.* After the 9-11 terrorist attacks, the D.C. Department of Health leadership realized it had to become more proactive and aggressive in gathering public-health information.

Within a week of 9-11 and weeks before the first anthrax letters were received in the nation's capital,

a notification was sent to all regional healthcare providers containing the symptoms of anthrax, plague, and smallpox. The notification also requested that the D.C. health department be alerted any time a patient presented with a constellation of symptoms matching those described in the notification.

The importance of the change from diagnosis reporting to symptom reporting became clear when a Virginia hospital presented with the first case of inhalation anthrax called the D.C. Department of Health long before the diagnosis was confirmed. The planning time afforded by that phone call prior to the diagnosis confirmation undoubtedly saved lives. Such notice is now becoming standard practice in the region. This new approach, however, was not immediately embraced by every public health facility. An employee of the mail-processing center who went to the emergency room of a Maryland hospital with flu-like symptoms was sent home and his symptoms went unreported; he died of inhalation anthrax the next day.

Some of the hard lessons learned during the anthrax crisis have already led to important changes in the way that the District of Columbia reacts to potential bioterrorism attacks. In January of this year, pieces of mail intended for the Federal Reserve were suspected of being infected with anthrax after preliminary tests indicated its possible presence. The mail-processing facility through which the mail passed was immediately shut down, and samples were taken from throughout the building. The samples were rushed for analysis to the CDC, which reported within a day that the mail was in fact uninfected.

The first anthrax attacks in Washington, D.C., made clear that improvements were needed if public and private officials were to collaborate effectively in the future. The more recent false alerts showed that progress has been made, but complacency is not an option. If we fail to plan together, we are planning to fail separately.

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