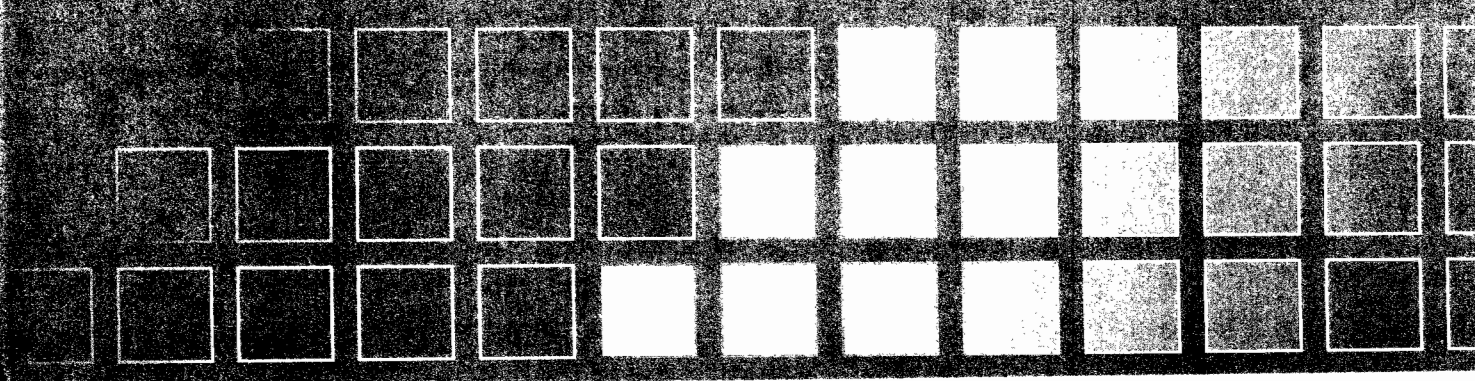


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# EMERGENCY MANAGEMENT

**Principles and Practice  
for Local Government**

SECOND EDITION



# Disaster response

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**This chapter provides an understanding of**

- Five disaster-response operational challenges
- The federal context of disaster response after 9/11
- The federal bureaucratic framework
- The Urban Areas Security Initiative
- The Metropolitan Medical Response System
- The National Incident Management System.

Local governments deal with emergencies, disasters, and catastrophes.<sup>1</sup> Briefly, emergencies, which are unforeseen but predictable and narrow in scope, occur frequently and are dealt with by means of standard operating procedures. Emergencies are house fires, vehicle accidents, medical crises, tunnel collapses, small hazardous materials (hazmat) releases, and the like, and although they may be terrible for those involved, they usually do not significantly impede the operation of the community as a whole or threaten government's ability to deliver services, nor does managing them demand many (if any) extra-community resources.

Disasters, in contrast, disrupt social interaction and interrupt the ability of major community systems to afford reasonable conditions of life; moreover, they require resources from outside the community. However, they are confined to a sufficiently narrow geographic area that resources can come from nearby "external" sources.

A catastrophe differs from a disaster in at least three ways. First, it embraces multiple communities so that support from outside the community is necessarily quite limited or curtailed. Second, the levels of damage and interruption of social intercourse are greater in a catastrophe than in most disasters: most of the built environment is damaged or destroyed; places of employment, recreation, worship, and education are gone; and community response mechanisms are interrupted. Third, most community functions are sharply and concurrently interrupted; with critical infrastructure systems failing simultaneously, emergency responders must prioritize or triage the restoration of critical services. (For more detail on the differences among emergencies, disasters, and catastrophes, see Chapter 1.)

Communities prepare for all three occurrences, but this chapter focuses on planning for response to disasters and catastrophes. The locus of planning and response for disasters is jurisdiction-wide and usually requires resources from outside the jurisdiction, sometimes from state government but often from adjacent local governments. For catastrophes, the locus is more regional, and the involvement of state and national government is required, as is regional assistance well beyond the scope of normal mutual aid agreements.

Research on disasters reveals consistent patterns of organizational response. Some aspects of these patterns are adaptive. For example, in the event of a disaster, outside individuals and organizations will converge on the impact area without a formal request for assistance. And as those outside the emergency response organization identify unmet needs, they organize to form emergent groups to fill the gaps. Where procedures for accomplishing tasks or coordinating organizations are lacking, people improvise responses to protect lives and property.

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Other aspects of these same patterns, however, are maladaptive. The arrival of people and organizations with unknown capabilities, together with poor communication among organizations, creates ambiguity about who is in charge. Convergence often produces duplication of some tasks, neglect of others, underuse of resources, and tardy response to disaster demands. When maladaptive patterns are recognized during emergency response, participating organizations may attempt to strengthen interorganizational coordination by creating emergent multiorganizational networks (EMONs).

Eliminating maladaptive patterns effectively, however, requires that the structure and resources of all organizations engaged in the local emergency response system be clarified pre-impact. The comprehensive emergency operations plan (EOP) (see Chapter 7) should document the roles of all the organizations involved in response. This higher level of organizing and planning will minimize the need for improvisation in the field and will reduce reliance on EMONs.

If the organizational structure established by an EOP cannot meet the demands of a given incident, the EOP will be inadequate. In practice, no EOP is likely to be completely appropriate to the demands of every type of incident or every magnitude of event (emergency, disaster, or catastrophe). To limit the inherent potential for an event to outmaneuver the plan, so to speak, emergency managers attend to two broad areas that are critical in promoting prepared-

ness for response operations: operational challenges and the availability of federal resources. Managers attempt to routinely incorporate into their thinking and response planning the five principal operational challenges that have been documented in disasters for decades; and they draw on resources from the national government, not only funding to develop local emergency planning but also national initiatives—which, with the associated guidance and requirements, have become more prominent since September 11, 2001.

### **Disaster response challenges**

The five response-related principal challenges that are critical to the effectiveness of an emergency response plan are (1) understanding the responses of citizens to disasters, (2) managing the convergence of resources and people on the disaster scene, (3) limiting the likelihood of role abandonment by emergency workers who are responding to the demands of disaster operations, (4) obtaining disaster declarations, and (5) addressing communications among responders during operations. Since it is known that these issues arise in almost every disaster and are even more critical in catastrophes, emergency managers can plan for them in advance by using the process of defining the challenge and developing a protocol that can be quickly implemented. Advance planning reduces the load on personnel and emergency responders during the response phase itself.

### **Citizen behavior during response operations**

Many laypersons—and even some emergency managers and jurisdiction officials—believe that people respond to disasters in a socially disorganized and even individually disoriented manner. Conventional wisdom holds that typically citizens respond to disasters with panic, shock, or passivity. However, social scientific studies have demonstrated that the majority of disaster victims respond constructively during disasters.<sup>2</sup> Most victims do not develop shock reactions; panic flight is rare; and people act in what they believe is their best interest, *given their understanding of the situation*. Behavior in the disaster response period is generally prosocial (as opposed to antisocial) as well as rational. Uninjured victims are often the first to search for survivors, care for those who are injured, and assist others in protecting property. Antisocial behaviors such as looting are relatively rare and take place most often in conflict-based situations. For example, although significant looting was reported after Hurricane Katrina struck New Orleans in 2005, it seemed to be peculiar to conditions created in that city; other cities affected by Katrina did not report significant looting.

In New Orleans, some circumstances were unique. Local government functions nearly collapsed for a long period, citizens were stranded without government contact (and without food and water), and established gangs that had not been able to evacuate were present in the impact area. To be sure, at least some of the apparent “lawlessness” in New Orleans seems to have been a product of the normal level of “incorrect” information associated with the early period following disasters: in any disaster, the situation is fluid, communications are difficult, and the priority is saving lives. Accordingly, exact information is hard to obtain; but as time passes and emergency assessment systems are implemented, initial misinformation is corrected. In New Orleans, however, what normally occurs was exacerbated inasmuch as some of the information given out by local authorities about violence, looting, and lawless behavior was simply wrong and was then injected into an environment where much unsubstantiated information was already circulating. Two reporters for the *New York Times* conducted extensive interviews and concluded that although there was much misery in the shelters and on the streets, the fear of crime and looting “far exceeded the reality.”<sup>3</sup>

New Orleans aside, therefore, the picture that emerges from research about disaster victims is one of responsible activism, with victims attempting self-care, supporting neighbors, and ameliorating the situation as best they understand it, using whatever resources are available. Citizens confronted with disaster are thinking, acting beings who tend *not* to be frozen in fear, *not* to engage in panic flight, and *not* to engage in irrational behavior. The typical picture of people confronted with a disaster, including the certainty that they will die, is one of people who behave as the passengers on United Airlines flight 93 did. Once they understood the threat, they organized and attacked their hijackers, choosing to die in Pennsylvania

rather than allow others to die with them in Washington, D.C. Understanding that this is the case makes possible several important observations about managing terrorist threats or other disasters.

**Observation 1: Expect anxiety** The first observation is to expect anxiety. Anxiety is a normal reaction to extreme conditions. It rarely results in the inability to act, but it does lower one's ability to effectively reason through complex problems. Anxiety is made worse by the unfamiliar, and terrorist events that involve chemical, biological, radiological, nuclear, or explosive (CBRNE) agents by definition introduce the unfamiliar. (Many of these agents are undetectable by human senses and produce both immediate and delayed negative outcomes, and citizen knowledge about them is highly limited.) Emergency managers should therefore plan to address anxiety, and should do so by providing—not withholding—information. They should use a strategy of information dissemination. The information should identify the threat, explain its human consequences (personalizing the risk), and explain what can be done to minimize negative consequences (see observation 2). If protective actions cannot be undertaken by individuals alone, the emergency manager should explain what the authorities are doing.

**Observation 2: Expect citizen action** A second observation is to expect citizens to act. Once citizens are informed of a danger, they will undertake actions believed to reduce that danger. If authorities do not provide protective action recommendations (PARs), citizens will take action anyway, adopting what they believe are "reasonable" protections. Thus, official messages must specify recommended protective actions, and these messages should be frequent. Messages without PARs simply enhance anxiety, which itself cannot be salvaged without information and action.

**Observation 3: Expect citizen compliance with recommendations for action** A third observation is that particularly in the case of terrorist attacks—and particularly when there is an identifiable incident scene and onset is quick—it is appropriate for authorities to expect citizens to comply with PARs.<sup>4</sup> In times of extreme stress, citizens look to government for guidance. When the agent is unfamiliar or intangible or the consequences are overwhelming, citizen expectations of protection and help are especially pronounced. National opinion polling following the 9/11 attacks indicated substantial increases in levels of "trust in government." Even if people later return to skeptical attitudes toward government, emergency managers have a policy window of opportunity. The expectation that citizens will comply underscores the need for authorities to have response plans in place that they are capable of executing. When such plans are lacking, citizens will subsequently hold authorities responsible through political and legal processes.

**Observation 4: Expect some long-term consequences** The fourth observation—one that authorities also must remember—is that the experience of any disaster may carry some long-term consequences for some of the victims. In other words, although cooperation and action can be expected in the short run, the disaster syndrome may persist for weeks or months in the form of anxiety accompanied by psychosomatic and physiological disruptions (e.g., bedwetting in children). Similarly, the disaster experience may produce psychological trauma, manifest over time in the form of persistent depression, post-traumatic stress reactions, and "survivor syndrome" (feelings of guilt and depression because one has survived while many others did not). Terrorist attacks commonly produce long-term consequences, and the extended effects of Hurricane Katrina on the victims—particularly children—are now surfacing. Long-term consequences are more likely to arise among three groups of people: (1) those who have witnessed death or handled the dead; (2) those who have been exposed to large-scale destruction of property; and (3) those whose relatives, neighbors, or friends have been seriously injured or have lost their lives. Recovery plans should include provisions for facilitating crisis and other short-term therapeutic contact as a means of reducing long-term psychological effects. Attention can also be given to citizens' need for economic support, and their need to develop a sense of closure and fit the disaster experience into a worldview that allows a transition to a stable life.<sup>5</sup>

### **Convergence and volunteers in disasters**

A second response-related challenge that commonly arises comes about when a disaster-stricken community becomes the focus of aid contributed by nearby households, communities, larger political entities, and private organizations. The result is an influx of telephoned offers of help, volunteers arriving unannounced, and equipment and material being delivered. On the one hand, this convergence has a positive effect on the local authorities' resource base and on victims' morale. Victims may interpret the presence of such help as evidence that the disaster is not totally overwhelming and can be overcome. They feel less alone and more hopeful. But on the other hand, convergence can produce unprecedented communication difficulties and response-generated demands. When convergence inundates emergency responders with unanticipated people and materials, the asset becomes a liability.

Disaster plans must allow for the appropriate integration of volunteers into the response force; the management and care of volunteer labor; and the logistics of receiving, storing, and deploying material and equipment. Locally trained and equipped citizen emergency response teams can alleviate some of the challenges of volunteers. These teams can be deployed to effectively accomplish a variety of emergency functions, including managing untrained but well-meaning volunteers who appear at the scene. (For more details about managing an influx of donations and volunteers, see Chapter 11.)

Especially in the context of incidents involving CBRNE agents, there is an acute concern about controlling the exposure of volunteers. The way to handle this is to use some strategy of selective exclusion from the impact area and to provide personal protective equipment for volunteers who are operating with potential exposure. Volunteers should be overseen by professionals, protected by frequent hazard monitoring, and assured of ready access to communication with authorities.

### **Role abandonment by emergency professionals**

A third response-related challenge has to do with the disaster myth that periodically resurfaces about emergency response personnel: that they will abandon their roles to take care of other responsibilities, particularly family obligations. One researcher who interpreted the studies on role abandonment drew three conclusions:<sup>6</sup> First, people who have no officially defined emergency response role and who have not themselves become victims will render aid at the disaster scene. Second, people who have no officially defined disaster role and who have been victims themselves will render aid first to family and then work outward in relationships to friends, neighbors, and strangers. Finally, people with officially defined disaster roles will execute those roles but will do so with psychological discomfort until they obtain information about the safety of their primary group.

All emergency response personnel, particularly first responders, are given formal training and made aware that their work may require separation from their families during a disaster. Almost all agencies encourage their response personnel to develop family disaster plans, including appropriate protective actions, arrangements for mutual support with neighbors and friends, and designation of procedures for reestablishing contact. Police and fire departments have institutionalized such concerns, devising protocols for agency contact with duty personnel families as well as for welfare reports to deployed employees. By supplying the safety accounting that people need if they are to be comfortable in continuing to work, practices such as these limit the probability of role abandonment. Two researchers reviewed studies compiled at the University of Delaware's Disaster Research Center and found that "in over 100 disasters studied and in the course of interviewing over 2,500 organizational officials, . . . role conflict was not a serious problem [that] creates a significant loss of manpower."<sup>7</sup> Indeed, in connection with the responses to the World Trade Center attack, the Pentagon attack, and the anthrax incidents that followed, no role abandonment was reported. The role abandonment by police officers in New Orleans after Hurricane Katrina in 2005 took place in an almost unique context characterized by massive destruction, little command oversight, the absence of communications, and no evidence of government intervention. In other cities during the same disaster, there is evidence that police and firefighters dutifully remained at their posts.

### **Disaster declarations**

The fourth response-related challenge that commonly arises concerns disaster declarations. To the victims and communities involved, every disaster is catastrophic and merits a declaration, but procedures exist and must be followed.

There are a variety of governmental disaster declarations that are issued by different governments below the federal level: mayors, county executives, and governors all issue formal declarations that may or may not involve special emergency powers (for the issuing government) or open special-assistance funds. For disaster response and recovery, the primary concern is with the declaration made by the president of the United States under the Stafford Act of 1988 (the amended Federal Disaster Relief Act of 1974). The president may declare two types of Stafford Act events: a major (presidential) disaster or an emergency. The principal difference between the two relates to the types of federal resources made available and the matching funds required of the state government. While major disaster declarations can vary in resources provided, they generally activate long-term assistance programs that require cost sharing by the state at up to 25 percent. An emergency declaration provides largely short-term assistance (often aimed at preserving lives) and requires a 10 percent funding match by the state. The Federal Emergency Management Agency (FEMA), under Presidential Executive Order 12673, evaluates requests for Presidential Disaster Declarations and advises the president regarding the type of declaration and the resources appropriate.

At the municipal level, the disaster declaration process begins with damage assessment. As the process continues, the emergency director assembles data on the consequences of impact and advises the mayor on the appropriateness of a Presidential Disaster Declaration. Although a variety of issues may be raised, the scope and magnitude of damages are important determinants of declarations. Damages must outstrip the resources of both the local and state governments.

Once the mayor has decided to request a Presidential Disaster Declaration, he or she formally requests the governor to declare a disaster. The mayor's request is accompanied by supporting data from the damage assessment records. The governor may have a state agency check the damage estimates before deciding whether it is appropriate for the state to declare a disaster and/or to request a Presidential Disaster Declaration. If the governor does request a disaster declaration, the U.S. Department of Homeland Security (DHS)/FEMA will dispatch a damage assessment team to survey damages, state and local capabilities, and required assistance. (If the governor does not think such a declaration is warranted, the state has an obligation to provide resources, but the process stops. A mayor may not directly approach the federal government for a disaster declaration.) The director of FEMA reviews the report of the assessment team and makes a recommendation to the secretary of DHS, who advises the president about the appropriateness of a declaration. The president makes the final decision.

As noted above, depending on the type of federal disaster declaration, a variety of different types of federal assistance may be made available. The U.S. Conference of Mayors has prepared a detailed listing of the assistance available for municipalities under different levels of Stafford Act disaster declarations. Presidential declarations also make assistance available directly to individual citizens and/or families. Such assistance includes such services as low-interest recovery loans, temporary housing, counseling, tax refunds, and food stamps. It is important for the local emergency manager to monitor this type of assistance, whether private or federal, to help ensure that victims are aware of the range of services available and are able to pursue the appropriate assistance.

### **Communications interoperability**

The fifth response-related challenge is that of communications interoperability. Communications interoperability "refers to the ability of public safety personnel to communicate by radio with staff from other agencies, on demand and in real time."<sup>8</sup> Effective communication is the foundation of effective disaster operations. However, many small local government emergency response agencies have inadequate internal radio communications, and even large agencies may have substantial interagency problems of communication. In a 1998 study of 1,045 fire and emergency medical service (EMS) agencies, 30 percent of participants agreed that the

### **Hurricane preparedness program, Sanibel, Florida**

Sanibel, Florida (pop. 6,000), sits on a barrier island in the Gulf of Mexico, vulnerable to natural disasters. Cars can access or leave the island only via a causeway bridge. Although hurricanes are rare there, the city revises its hurricane preparedness plan annually to maximize its use of new technology. Thus, when a Category 4 hurricane struck on August 13, 2004, the city was able to implement a model evacuation, reentry, and recovery plan that saved lives and minimized economic losses.

Each year, Sanibel provides hurricane education to residents and businesses through workshops, the city Web site, and direct mailings to every household. Police officers speak to civic clubs, and the city invites community partners to a hurricane planning meeting. In addition, the city prebids contracts for debris cleanup; conducts training with police, fire, and structural safety inspectors; identifies an off-island facility for use as a temporary city hall in case of evacuation; and trains a volunteer amateur radio team to provide a secondary means of communication. The skills of the city's nonessential employees are identified for reassignment should a hurricane occur.

Per the city's plan, the preevacuation phase was activated five days before Hurricane Charley was due to arrive. Each department consulted its hurricane checklist. Employees installed hurricane shutters and conducted team conference calls with the county emergency operations center (EOC) to verify that preparations were on target. Two days before hurricane landfall, evacuation notices were issued and voluntary evacuations began. The next morning, evacuation became mandatory, and by the evening of August 12, city hall had been relocated to an off-island facility.

Charley struck the following evening, uprooting thousands of trees, blocking every roadway, destroying the electrical distribution system, damaging 90 percent of structures, and cutting off the city's water supply. At dawn, designated city teams returned by boat, establishing a temporary EOC to coordinate activities. Simultaneously, a flyover assessment was completed. Police and firefighters conducted a search-and-rescue mission to check for injured residents. A team of city staff and volunteers reviewed every structure to assess the level of damage incurred and its safety for entry; another team worked to clear trees from main roadways.

The EOC housed police, fire, utility, and forestry representatives; U.S. Fish and Wildlife workers; and emergency relief agencies. With public and private agencies under one umbrella, the process moved efficiently. Sanibel police coordinated with the National Guard, Florida Department of Law Enforcement, Florida Wildlife Commission, Salvation Army, and Red Cross to provide security as well as food and water to emergency crews. One staff member stayed at the EOC, maintaining constant contact with city officials to obtain and dispatch supplies, and a pet rescue and medication program operated from the temporary city hall.

During the evacuation, the city used a hotel lobby as an information station where citizens could view photographs of the damage while the city manager and council conducted daily briefings for evacuees and the media. Computer technicians used emergency generators to post real-time Web site updates, and portable generators kept sewer lift stations functioning. With no cell phone service, the volunteer amateur radio network was invaluable.

The well-coordinated effort made it possible to deem the island safe for public return five days after the hurricane struck, and at 7:00 AM, on August 18, the island officially reopened. Every returning citizen was greeted at the bridge tollgates with a ten-page "welcome home" packet, including a new refuse collection schedule, a list of licensed contractors, and the location of Red Cross shelters.

City hall reopened with extended hours, seven days a week. The city Web site's real-time updates became a vital tool to convey information about the status of utility restorations, the latest refuse pickup schedule, where to obtain ice, how to get rid of spoiled food, how to find medical help, and more. With worldwide interest, the number of Web site hits increased from a prehurricane average of 4,000 daily to 172,578 daily.

Damage estimates to private property ran more than \$720 million, but thanks to a comprehensive, well-executed preparedness plan, the city suffered no loss of life during the storm or recovery process, and its use of new technology under adverse conditions kept not just the community but the entire world informed.

The Sanibel Hurricane Preparedness Program and city manager Judith Ann Zimomra received the Public Safety Program Excellence Award in the less-than-10,000 population category from ICMA in 2005.

Source: Excerpted from "2005 ICMA Annual Awards," *Public Management (PM)* (September 2005): 13, 29.



### **Lessons learned from the response to the attack on the Pentagon**

When the 757 jetliner slammed into the Pentagon on the morning of September 11, 2001, everyone on the ground knew it was a terrorist attack: Two planes had already struck the twin towers of the World Trade Center in New York City.

Even so, the first people at the scene were not from the U.S. military, the Federal Bureau of Investigation, or the Central Intelligence Agency. They were from the fire department in Arlington County, Virginia. While the Pentagon sits within view of the nation's capitol, it lies squarely within Arlington's borders.

And that's the way it will be in any terrorist attack or disaster. The locals will get to the scene first. Whether they will know what to do and have the resources to do it is more of an open question.

By most accounts, Arlington County did a pretty good job at the Pentagon, and that certainly was no accident. The county was well prepared. "If there was any luck on September 11, it was that the plane crashed on the Virginia side of the Potomac River," says Donald Kettl, who teaches political science at the University of Pennsylvania and studies homeland security issues. Arlington's response wasn't perfect, but what it did right—and how it continues to upgrade its capabilities—stand as a model for other communities struggling with the confusing issue of homeland security.

### **Working together**

Long before 9/11, the county had considered what kinds of disasters it might face and what agencies within the county and in adjoining jurisdictions could provide help. The county then coordinated, trained, and exercised with the appropriate agencies.

For starters, the county police and fire departments were used to working together and were part of the county's emergency management team, which also includes public works and public health officials. Team members operate under preestablished policies and procedures and have run exercises to polish up those procedures.

In addition, fire and emergency medical service (EMS) agencies in Arlington and its neighboring Virginia counties have operated under an automatic aid agreement for nearly thirty years. They share resources without regard to jurisdictional boundaries, as well as use the same equipment. That means they can literally hook up to each other's equipment and tune to each other's radio frequencies. This helped immeasurably at the Pentagon. In New York City, some first responders from other jurisdictions had trouble communicating with their NYC counterparts—or even connecting their water hoses.

Arlington also had participated in numerous field exercises with the Pentagon that simulated chemical attacks and mass casualty situations. The 1995 sarin gas attack in a Tokyo subway also spurred Arlington officials to beef up their emergency response program.

Crucial to the coordinated response at the Pentagon, however, was the system of command. Arlington County and its Virginia neighbors use the same incident management system, so on 9/11, responders knew who was in charge and what their role was.

Under a unified management system, the nature of the incident determines which agency takes charge. Since the Pentagon disaster was first of all a building fire and collapse with hazardous materials and mass casualties, the police department recognized right away that the fire department would be the lead agency.

"It was readily apparent that this was a crime with a law enforcement component," said James Schwartz, Arlington County's fire chief who commanded the fire-rescue operation at the Pentagon. "But that had to take a back seat to the life-saving effort." At the same time, fire and EMS responders understood that evidence needed to be collected even as they were driving trucks, putting up ladders, and stretching hoses.

Arlington uses an "all hazards" approach in its disaster planning. That means it doesn't matter, for example, what causes a building to collapse—gas main explosion, earthquake, or terrorist bomb. If people are trapped, they're trapped. The Federal Emergency Management Agency has employed "all hazards" for years, and it has been useful to Arlington County—at the Pentagon and in subsequent emergencies, such as an anthrax threat and Hurricane Isabel. The anthrax incident made public health the lead agency.

Such extensive planning and training clearly is what helped Arlington perform as well as it did on September 11. "We've been at this so long that we probably know more than the average community," Schwartz said. "And we're probably more aware of what still needs to be done."

#### **Too many cooks**

Chief among the things that didn't work well was controlling access to the disaster scene. Ideally, first responders come when called by the incident commander. At the Pentagon, the response from neighboring Virginia counties was "very disciplined," Schwartz said. Thanks to the automatic aid agreement, the jurisdictions didn't send anybody who wasn't requested, whereas some units from Washington, D.C., and nearby Maryland raced to the site without being summoned.

The unexpected arrival of units became a tremendous problem: It prevented Schwartz from deploying resources efficiently and could have endangered those responders since he didn't know they were there and therefore couldn't communicate with them. Moreover, not knowing what additional units were at the Pentagon and where they were made it more difficult to evacuate the site, which had to be done three times during the operation as unidentified aircraft headed in the direction of the Pentagon.

It's hard for responders to stand by during an emergency, Schwartz acknowledged, "because they're not people used to sitting on their hands." But discipline is crucial. "If we overdeploy for one incident with unnecessary resources, we may leave ourselves vulnerable elsewhere in the region," Schwartz said. In addition, some responders could be lost unnecessarily if there's a secondary attack at the initial incident site.

Arlington County didn't turn away any emergency responders at the Pentagon "but we should have," Schwartz said. The need for better scene-access control was identified in the county's *After-Action Report*, which was released in July 2002.<sup>1</sup> Arlington is currently working on an access-control plan.

A related problem was the absence of a system to check credentials or otherwise identify legitimate responders. "The challenge is how to protect a large incident site like the Pentagon," Schwartz said. "How do you ensure that the next ambulance or fire truck arriving at the scene isn't driven by terrorists and laden with explosives?"

The United States can learn lessons from other countries, especially Israel, which uses markings on first-responder vehicles that are changed frequently. Schwartz thinks the problem may be solved by technology—biometrics and other ways of identifying people. In any case, he said the federal government needs to take the lead by developing protocols to help localities secure incident scenes.

#### **Talking at each other**

In many communities around the country, fire and police personnel can't communicate with each other, much less with their counterparts in other jurisdictions. Communication at the Pentagon site was not a huge problem, but there were glitches. For example, Virginia responders could all use the same radio frequency, but, initially, D.C. and Maryland responders could not. Within hours of the crash, units from D.C. and Maryland were given 800-MHz radios, which solved the problem. Now all metro-area jurisdictions use that system. But having everyone on the same system is not the end of the problem at a disaster scene. "The last thing we want is for everybody to be able to talk on a common operating frequency," Schwartz said, because that could clog the airwaves and make it difficult for the principals to connect. And that's another instance in which an incident management system is key to a disciplined response. Under such a system, the various principals know their roles, and they do the talking.

While equipment and technology are vital pieces in an emergency, Schwartz emphasized that using a common command system is even more important. "If you're not operating by the same incident management system, then the rest of this stuff doesn't work at all."

#### **The long haul**

Normally, if there's a big fire in Arlington County, many units are dispatched to the scene, and it's usually over in a few hours. The Pentagon operation, however, lasted ten days. That meant the larger community was thinly protected for a prolonged period. It also monopolized equipment and consumed materials. Arlington has used federal grant money to buy more equipment in order to sustain longer operations.

(continued)

### Lessons learned from the response to the attack on the Pentagon (continued)

Similarly, each responder in every jurisdiction that could be called to a disaster needs certain basic equipment that is instantly available: a chemical suit, respiratory protection, and a chemical antidote. Additional resources can be available at the regional level. "We need to remember that redundancy in this business is good," Schwartz said, noting that if a second airliner had hit Washington, a lot more resources would have been needed. "In the new world of terrorism, we can't resource for just one big response."

Since 9/11, the federal government has predeployed equipment packages around the country which can be at an incident scene in a couple of hours. Packages include the firefighting, rescue, and law enforcement equipment necessary for 150 responders—all of which, Schwartz said, are necessary. "I believe that in the future we'll face multiple incidents that will really challenge the resources of a region."

Source: Adapted from Carol Anderson, "Pentagon in Peril," *Securing the Homeland*, a special report from *Governing Magazine* and *Congressional Quarterly* (October 2004): 22-24, available at [homelandsec.org/publications.asp?pubid=495](http://homelandsec.org/publications.asp?pubid=495) (accessed September 9, 2007).

<sup>9</sup>Arlington County Fire Department, *After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon* (Arlington County, Va.: Titan Systems Corporation, July 2002), available at [arlingtonva.us/departments/Fire/edu/about/docs/after\\_report.pdf](http://arlingtonva.us/departments/Fire/edu/about/docs/after_report.pdf) (accessed September 9, 2007).

lack of wireless communications interoperability hampered their ability to perform response duties.<sup>9</sup> Because the problem has persisted for so long, most agencies have devised ways of "working around" difficulties. For example, in the response to the 1995 Oklahoma City bombing, "first responders had to use runners to carry messages from one command center to another because the responding agencies used different emergency radio channels, different frequencies, and different radio systems."<sup>10</sup>

Working around problems is not a solution. Simply to execute day-to-day operations in the same or adjoining jurisdictions, police and fire departments need to have radio command communication. When the events being dealt with are not day-to-day operations but large emergencies, disasters, and particularly incidents involving weapons of mass destruction (WMDs), the number and variety of responder agencies multiply and so do the issues of interoperability. On September 11, 2001, police helicopters noticed that the World Trade Center towers were showing signs of impending collapse. Police commanders issued a radio warning to police responders to begin evacuations, but because firefighters used a different radio frequency, the message did not reach them. Thus, "totally unaware of the impending collapse, at least 121 firefighters, most within striking distance of safety, according to the *New York Times*, died."<sup>11</sup>

Although mutual aid systems and other types of communications governance systems have substantially reduced problems of interoperability, the issue persists. Not even programs promoting interoperability in the public safety arena have erased the problems, which the National Task Force on Interoperability has identified as

- Outdated and incompatible communications equipment
- Limited and fragmented funding
- Poor planning coordination and poor cooperation among agencies
- Insufficient radio spectrum assigned to public safety
- Limited equipment standards.<sup>12</sup>

In 2004, DHS consolidated its existing programs on interoperability and supplemented them by issuing a comprehensive statement of requirements (standards) for interoperability for first responders; to implement the requirements, DHS created the SAFECOM program. The Federal Communications Commission has eliminated one obstacle by assigning more frequencies to public safety to support voice, data, and video communications, and the SAFECOM program is attempting to eliminate the remaining four problems. It has devised a comprehensive plan for increasing awareness of the interoperability issue, and it promotes coordinated planning and partnerships at local, regional, and state levels; it also outlines funding strategies to pay for equipment to achieve interoperability, and it urges state and local agencies to adopt comprehensive standards for interoperability. SAFECOM, like other DHS initiatives, is too new for evaluation, but it appears to supply a workable plan. Thus, the elements of a nation-

ally successful interoperability program are present although the problem of funding is not unequivocally solved.

### **The federal context of disaster response after 9/11**

Attending to the resources and guidance available from the federal government is another way that local emergency managers try to prevent their EOP from being inadequate to the demands of a disaster. At the federal level, the terrorist attacks on September 11 made a major difference in emergency management. Following those attacks, the federal government moved to systematically include terrorist incidents with natural and technological events as appropriate targets of comprehensive emergency management. (Local governments, with and without support from the federal government, had been preparing for terrorist events for some years; those efforts were intensified after 9/11.)

The inclusion of terrorism in the threat environment creates a need for changes in thinking as well as in practice. For natural and technological events, the strategies, tactics, and equipment used in emergencies are often appropriate for, or readily adaptable to, disasters and catastrophes, but when one introduces the terrorist use of WMDs—which may include CBRNE agents—the nature of the environment changes and the response capability of all responders is compromised. With any disaster response operation, fundamental success rests on planning, training, and exercising, and the need for planning, training, and exercising does not change when terrorism is added to the threat environment. However, the strategies for response, the equipment with which to address the threat, and the personal protective equipment needed to preserve the responders do change.

It has always been the case that the trained responders who are the first to arrive at the scene of an emergency, a disaster, or a catastrophe are most likely to be fire, EMS, and police personnel, although public works, transit, and engineering staff, as well as private sector organizations (e.g., personnel from private ambulance systems or hazmat response teams from chemical companies) may also perform specialized roles. (As the demands of the incident escalate, these first responders are supported by more specialized personnel, equipment, and resources from outside the community.) These “first on-scene” responders rely on plans, training, equipment, and skills to formulate a response to any demand, whether the demand is generated by the hazard or by the response itself. Effective response combines flexibility and improvisation, particularly in the face of low-probability events that produce consequences far outside the norm.

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**When terrorism is added to the threat environment, the strategies for response, the equipment with which to address the threat, and the personal protective equipment needed to preserve the responders all change.**

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In the late 1990s, with the growth of the Metropolitan Medical Response System (MMRS, created by the Nunn-Lugar-Domenici Act of 1996),<sup>13</sup> the concept of operations for local government terrorism response changed slightly. Historically, local response plans had addressed terrorism through small strike forces—specially trained and equipped personnel who would be dispatched at impact. These teams are separately organized and quartered, and there is an inherent delay in their arrival at any given scene. This approach works as long as the strike team and necessary resources can be deployed immediately and can arrive after only a very brief delay. The approach has several disadvantages, however: first, a delay in response may increase potential losses; second, the first on-scene responders may be exposed to the same agents as victims, possibly without appropriate protection; third, terrorists sometimes use secondary devices, such as explosives, timed to disrupt response or to injure or kill the first on-scene personnel.

By the late 1990s, the approach to antiterrorism had evolved into one that embeds incident response in the local incident management system (IMS). This more recent approach requires that all first responders be trained to identify the signs and symptoms of CBRNE

agents without necessarily being able to identify the precise agent; that they be equipped with generic protective gear for the full range of agents; and that they have sufficient training and equipment to know when to call for specialized help (instead of trying to abate the event themselves) and to be able to initiate a protective response for victims and bystanders. Thus it is not necessary for every police officer and firefighter to be trained in the operation of specialized detection equipment and to carry specialized protective gear and chemical or biological antidotes.

### **The federal bureaucratic framework**

The 9/11 attacks were a watershed for U.S. emergency management policy. Many of the policy weaknesses that had been identified during previous decades, as well as the response challenges identified on 9/11 itself, became salient to policy makers. A window of opportunity opened when the political will to change, the funding for change, and an apparently continuing threat all coincided. The principal federal response was to create DHS in 2003. DHS absorbed FEMA and more than a dozen other agencies and programs. The department's budget is large enough for it to be able to impose federal expectations on state and local governments by mandating participation in federal programs as a condition for granting funds.

The original DHS mission encompassed three goals: prevent terrorist attacks within the United States, reduce vulnerability to terrorism, and minimize the damage and speed the recovery from terrorist attacks.<sup>14</sup> But DHS soon adopted all-hazards responsibilities, although the emergency management community has expressed reservations about the department's allocation of resources to nonterrorism issues. In 2005, the U.S. Government Accountability Office (GAO) found that DHS had directed that "the majority of first responder grant funding be used to enhance . . . capabilities [related to] terrorist attacks."<sup>15</sup>

### **Concerns about the Department of Homeland Security**

GAO has expressed concerns about the ability of DHS to become fully operational, about whether the department is doing less than it might to affect municipal preparedness, and whether the resources that should support preparedness are being diluted.<sup>16</sup> Some concern is linked to internal organizational and interdepartmental issues in policy implementation. That is, the department brings together very diverse functions—for example, terrorism intelligence gathering, the Secret Service, the Coast Guard, and infrastructure protection—that all compete for parts of the same DHS budget. Also, some DHS functions overlap with the functions of other agencies and programs and must compete in the larger U.S. budget and policy environment; DHS has programs for computer security, for example, but so do the National Security Agency and other organizations in the intelligence community.

There is also persistent policy uncertainty about the way to involve law enforcement in the system without undercutting other DHS sections, such as FEMA, that must respond to natural and technological threats as well as to terrorist threats.<sup>17</sup> For local governments, law enforcement is the principal arm for the intelligence-gathering function, which constitutes the only real approach to terrorism mitigation. Emergency managers and fire services do not execute this function—but since they do engage in preparedness, response, and recovery, there must be a way to formally connect the three disciplines in the comprehensive emergency management process.

GAO defines the prime internal organizational challenge for DHS as focusing management efforts and connecting current policy aspirations with accumulated knowledge and existing and historical programs.<sup>18</sup> Although this advice is constructive, at some level there must also be a dialogue about the role of DHS functions in national policy on homeland security. DHS can manage its way out of internal chaos, but the larger national policy problem—agencies with overlapping responsibility—remains.

### **Problems at the Federal Emergency Management Agency**

Problems affect FEMA in particular. When Hurricane Katrina hit in 2005, FEMA largely failed to implement the National Response Plan (NRP).<sup>19</sup> Discussion continues on plans by Congress

and the DHS secretary to reorganize FEMA. In 2006, seeking a nominee for the position of FEMA director, the Bush administration contacted seven former state emergency management directors and current FEMA officials,<sup>20</sup> and all seven declined, citing similar reasons: no realistic path to improving FEMA within its DHS context and low likelihood of adequate funding. Although the DHS budget is generally seen as substantial, much of it has historically been allocated to other functions (e.g., specialized terrorism-directed programs) and other formerly stand-alone agencies (such as the U.S. Coast Guard). Eventually Acting Director David Paulison accepted, bringing many years of professional fire services management experience to the directorship.

It appears that turbulence at DHS and FEMA will continue, however, increasing the likelihood of strategic uncertainty. This uncertainty stems from overall challenges to policy—both to its continuity and to its implementation—combined with new organizational structures, fluctuating priorities, and personnel newly assigned to the programs they administer.

### **Federal and local emergency management relations**

Although the future is hard to predict under any circumstances, the trend is toward higher levels of federal intervention in local emergency management. Federal interventions to develop and impose consistent planning and response models on state and local government have created a rapidly changing environment characterized by a largely “top-down” flow of communications and requirements.<sup>21</sup> DHS has developed guidance for state and local agencies that extensively defines appropriate capabilities and includes a “universal” list of tasks for agencies to accomplish.<sup>22</sup> In addition to these operational and emergency management prescriptions, the NRP addresses state and local access to federal resources, and the National Incident Management System (NIMS) specifies practices in local planning, incident management, and resources. Federal mandates are being enforced through legislation and administrative rule making, incentives, and arrangements for financial support. No systematic attempts have been made, however, to measure the success of these attempts to influence local planning and response practices.<sup>23</sup>

There are numerous federal programs that fund local emergency management, and although many of them are now located in DHS,<sup>24</sup> major programs also exist outside DHS—notably in the U.S. Department of Health and Human Services (DHHS) (especially the biological threat initiatives supported by the Centers for Disease Control and Prevention and by MMRS), the U.S. Environmental Protection Agency, and the Nuclear Regulatory Commission. Among the national programs, three have significant and direct impacts on local government disaster operations. Two of them—MMRS, created in 1996, and the Urban Areas Security Initiative (UASI)—are specifically related to federal attempts to combat terrorism. The third, NIMS, mandates a specialized (and centralized) approach to all emergency planning and response. The creation of NIMS and UASI and the continuation of MMRS have taken place in the turbulent post-9/11 environment.

UASI, MMRS, and NIMS were selected for review here because of their size and scope, their direct impact on disaster operations, the size of their budgets over time, and their demands for a high level of federal involvement in local government emergency management.

### **The Urban Areas Security Initiative**

In 2003, the DHS Office for Domestic Preparedness inaugurated UASI as part of the National Strategy for Homeland Security. Part of the objective of UASI was to develop a capacity to target specific resources to urban areas whose probability of suffering terrorist attacks was judged to be highest. The Homeland Security Appropriations Act for fiscal year (FY) 2004 continued and expanded UASI at a funding level exceeding \$4 billion. Seven urban areas were approved for funding in 2003, with the number growing to fifty in 2004. For 2005, DHS added seven new UASI jurisdictions, while—without public explanation—not funding seven urban areas from 2004. In FY 2005, the financial awards were substantial, ranging from a high of more than \$207 million to New York City to a low of \$5 million for Louisville, Kentucky. The 2006 UASI guidance reduced the number of continuing cities to thirty-five—the thirty-five with the highest calculated risk levels—and reduced future program funding. In 2007, urban areas were

divided into two tiers for basic funding. One tier consists of six very high-risk urban areas: the San Francisco Bay Area, the Chicago area, the Houston area, the Los Angeles–Long Beach area, the National Capital Region, and New York City–Northern New Jersey; the other tier consists of thirty-nine urban areas with lower risk.

UASI is discussed here in terms of its aims and funding mechanisms, its concept of operations, and its policy and prospects.

### **Aims and funding mechanisms**

In 2004, then DHS secretary Tom Ridge charged UASI with “creat[ing] a sustainable national model program to enhance security and overall preparedness to prevent, respond to, and recover from acts of terrorism.”<sup>25</sup> UASI does not impose a generic emergency response model on participating urban areas but, instead, requires that local governments—organized around a designated core city—cooperate in developing a strategic plan that either creates new disaster plans or supplements existing ones. The program has also developed an all-hazards emphasis. UASI authorizes program expenditures across five areas: planning, equipment acquisition, training, exercises, and management and administration (capped at 3 percent of the total allocation).

The funding mechanism is intergovernmental, with federal money being allocated to states (which can retain up to 20 percent), and the states then distributing funds to local governments. Local government allocations are based on the local governments’ strategic plans and the mutual agreements entered into by a core city’s urban area administrator, the participating municipal governments, and the county and state emergency authorities. All expenditures are subject to federal review.

### **Concept of operations**

Strategic and operational plans developed by urban areas are “authorized use only” and not subject to public scrutiny. Despite the claims of all-hazards intent, much of the publicly available UASI application material focuses on terrorism, although many “disaster functions” promoted by UASI are applicable to disaster agents other than terrorist attacks. Anecdotal evidence indicates that many of the UASI urban areas have adopted response plans that follow the organizational model used by the National Urban Search and Rescue program (US&R).<sup>26</sup> This is an established and tested model for responding to natural, technological, and terrorist events that require the movement of special personnel and resources to a potentially distant incident site. The US&R approach relies on storing specialized equipment and resources to be used by a specially trained team; both the team and the resources are capable of being moved to an incident site on very short notice. For example, teams from the US&R program were dispatched from as far away as Washington State to work on rescue and recovery in New York City on September 11. UASI technically defines the response area as the urban area, but many states require their UASI operations to extend statewide.

The UASI concept of operations follows the US&R model but usually creates multiple mobile teams (rapid response teams [RRTs]) of mixed law enforcement and fire services personnel (firefighters cross-trained as paramedics; technical rescue technicians and hazmat technicians; and police officers specializing in special weapons and tactics, or SWAT, with bomb technicians). Many UASI systems also borrow the incident support team (IST) concept from US&R; ISTs are mobile, assess the needs at an incident site, and subsequently serve as a command and resource structure for the deployed teams. The RRTs and ISTs are usually dispersed throughout the urban area to reduce travel time and achieve distribution of resources. UASI capability can be requested by any jurisdiction facing an incident that will overwhelm the local response system. The teams can quickly deliver expertise, response vehicles, and equipment while simultaneously maintaining a reserve to ensure the security of the larger urban area.

Once UASI is activated, an interjurisdictional command-and-control system is required. In a large incident, every jurisdiction centers its command strategy in a local emergency operations center (EOC), and all federal resources reside in, or are available through, the Federal Bureau of Investigation’s Joint Operations Center, an NRP joint field office, and/or the state

EOC. Local EOC decision makers report to and act in accord with the elected leaders of their jurisdictions. The deployed IST supports the local incident commander and the local jurisdiction's EOC. The local incident commander—supported by the jurisdictional EOC—controls incident response and initiates and directs the deployment of nonlocal UASI resources as part of the command function. The IST (which, as noted, supports the local command structure) serves as the interface among the local jurisdiction, UASI resources, state resources, and federal resources.

### **Policy and prospects**

Local emergency managers view UASI, at least in part, warily. UASI brings substantial funding to local needs and allows a degree of local choice in planning, administration, and funding allocations; however, there are complaints that the federal authorities tightly define authorized expenditures within each predetermined budget category and that local governments bear a substantial financial accounting load. Since the 2003 initiation of UASI, DHS's reporting demands have substantially increased, but these demands have not been matched by funding to support the generation of the required reports. There is also concern that the pass-through mechanism from federal to state to local agencies is complex and administratively demanding and that it siphons funds from emergency response to other uses. Finally, for UASI to succeed in creating a functioning local emergency management capability, there must be high levels of continuing cooperation among federal, state, county, and municipal governments. Given the inherently problematic nature of intergovernmental relations, however, this is a serious challenge. In any case, if budgets continue to shrink the number of UASI cities, the program's ability to provide protection on a national scale will be seriously compromised.

At present, there is little basis on which to judge the success of UASI. The program is new, and plans are kept secure to avoid having their contents divulged to potential terrorists. All urban areas funded in the FY 2005 cycle have obtained federal approval of strategic plans. Evaluations of functional or full-scale UASI exercises are not available in open literature. Although many of the UASI urban areas have MMRS programs that provide emergency management system models, it is not clear if UASI strategic plans build on these capabilities, revise them, or change them entirely.

### **The Metropolitan Medical Response System**

The first program of national scope to address WMD/CBRNE threats was MMRS, established under the Nunn-Lugar-Domenici Act (the amendment to the National Defense Authorization Act for FY 1997). Overseen by DHHS, this program created coalitions of public, private, and non-profit organizations to address mass casualty consequences of terrorist attacks. The program was originally based completely on the strike team concept and was called Metropolitan Medical Strike Teams. But as described above, strike teams for local response have disadvantages, and the national system changed within a year to one based more in the IMS and contingent on broad-based training and equipping of police officers and firefighters. Of the twenty-five MMRS cities established before 1999, only two (Atlanta and Washington, D.C.) retained a strike team framework through 2007, and these two did so largely because their response areas are geographically widespread, have special needs (District of Columbia), and have an elevated likelihood of multiple simultaneous attacks.

Although only modestly funded, MMRS has produced high levels of response activity, particularly following 9/11, when the anthrax threats were prevalent. Its programs are concentrated in areas of high population density and areas with high-probability targets. By March 2004, 124 city and regional MMRS programs had been established. With forty-three states having at least one MMRS program, geographic coverage is very broad. The programs have been exercised for years and have independent positive evaluations.

MMRS enhances local efforts to manage mass casualty incidents arising from terrorist use of WMDs. Its mission is driven by the realization that, for local governments, specialized federal assets for terrorist attacks are forty-eight to seventy-two hours away. MMRS ensures that cities can operate independently until external support arrives. It also fosters a strong



local IMS that incorporates specialized extra-community resources. Each MMRS city maintains a pharmaceutical cache (to federal standards for type and quantity) of antidotes and prophylaxis for chemical, radiological, and biological threats. In addition, since the program's inception, the MMRS focus has expanded beyond CBRNE agents and now includes explosive threats and any other agents (natural or technological) that could produce large numbers of casualties.

The most significant organizational feature of MMRS is that it links multiple response systems. Horizontal linkages connect first responders, public health, emergency management, law enforcement, mass fatality, and medical and behavioral health services. There also are vertical linkages inasmuch as public health participation involves city, county, and state agencies. In addition, links are formed between local government and private and nonprofit organizations such as hospitals, environmental cleanup companies, ambulance systems, and funeral director associations. MMRS cities plan for the receipt and integration of important federal assets by building a relationship with the National Disaster Medical System and developing a capacity to receive pharmaceuticals from the strategic national stockpile, along with other specialized assets from federal programs like CHEMPACK and BIOWATCH. (CHEMPACK places one or more caches of pharmaceuticals for chemical, biological and nuclear agents in high-risk cities for immediate access by emergency responders, and BIOWATCH involves both stockpiling biological agent antidotes and creating detection systems for biological agents.)

MMRS requirements address some issues of mitigation and recovery but emphasize preparedness and response. As a condition of declaring an MMRS program "fully operational," each city conducts a full-scale exercise with federal evaluation and maintains an exercise calendar.

The topics discussed here in connection with MMRS are the program's concept of operations, its system responsibilities, and policy and funding.

### **Concept of operations**

There are two models for MMRS operations. The 1997 strike force model builds specially trained and equipped mobile forces that respond to confirmed WMD/CBRNE incidents. The majority of participating municipalities, however, use the MMRS IMS model, which requires all first responders to be able to detect WMD/CBRNE incidents and initiate a response. This model requires training in the recognition of CBRNE agents and wide issuance of personal protective equipment. The training and equipment permit safe initial response as the IMS expands to meet incident demands.

The MMRS IMS model assumes that if a geographically defined incident scene exists, threat management should be directed from that location. If there is no distinct incident scene, MMRS focuses incident management in the jurisdictional EOC with links to other governmental EOCs. In any case, the individuals commanding the response operations are always those geographically closest to the incident. If no geographically defined incident scene exists, or if there are multiple incident scenes, operations are overseen by the relevant (jurisdictionally closest) EOC.

The MMRS IMS model has two components that take response actions. The first consists of trained and equipped responders guided by an incident commander. The second is the EOC, which MMRS augments with special administrative staff for terrorist incidents and with technical experts from private, nonprofit, and public organizations who have special skills related to CBRNE agents. The MMRS concept of operations emphasizes the integration of planning and response efforts, with many agencies working together to achieve common response objectives.

### **System responsibilities**

At the level of the IMS for incidents with a defined scene, a fire service hazmat response model is often used. When there are agents other than hazardous chemicals—particularly biological agents—or other system activation paths, the organizations involved in the MMRS

response may be different (i.e., may not be dominated by hazardous materials). For example, a potentially terrorist-based outbreak of botulism poisoning might first be noticed by emergency department physicians, who would notify the public health system rather than a fire department. The organizations involved in MMRS response operations vary by the needs of the incident, but the model was created specifically to deal with the special demands of terrorist incidents. These special demands are identified in Figure 9-1, which shows the response organizations and their primary functions for terrorist incidents that generate a scene for operations.

### Policy and funding

Before 2003 and the creation of DHS—in other words, for most of the MMRS program's history—funding came directly to the cities from DHHS, so concerns about the loss of funding to intermediate government levels did not arise. In March 2003, responsibility for MMRS passed to FEMA/DHS—but

**Figure 9-1** MMRS response organizations and functions for terrorist incidents

Organization/agency	Primary functions
First on-scene fire, police, emergency medical service	Secure the incident area Assess victim needs Conduct situation assessment Collect casualties and initiate victim management Conduct emergency gross decontamination Preserve evidence
Technician responders: Hazardous materials, technical rescue	Adjust scene layout Inspect impact area Perform agent identification (scene measures) Conduct victim extrication Conduct technical decontamination
Medical responders: Emergency medical technicians, paramedics, behavioral health specialists	Triage victims Administer medical treatment at scene Provide mental health support Organize patient transport to definitive care
Law enforcement	Gather intelligence and coordinate with the Federal Bureau of Investigation Control evidence Secure scene, treatment areas, emergency operations center, mass shelters, jurisdiction critical facilities Manage bomb operations Manage special weapons and tactics operations
Hospital mass patient care: Hospital physicians, nurses, personnel	Conduct technical decontamination Provide full patient diagnosis and treatment Triage victims for the National Disaster Medical System Manage mass surge Extend treatment capacity
Mass fatality management: Medical examiner's personnel, mortuary association personnel	Receive human remains Safeguard personal property Identify the deceased Complete and maintain case files Preserve chain of evidence Release remains for final disposition
Public health: State and local health departments	Provide specialized medical expertise Manage epidemiological investigation Support agent identification Recommend preventive health measures Coordinate with the Centers for Disease Control and Prevention Advise agent control (mass prophylaxis, quarantine) Coordinate with national pharmaceutical programs

then in 2006 it passed back to DHHS. The continuing organizational challenge for MMRS cities has rested in the requirement that they integrate participation by municipal departments, county and state government agencies, and the private sector.

The availability of federal funds has been erratic, and the money has often failed to cover the costs to cities sustaining MMRS programs, as the following list indicates:

- 1997: Twenty-five MMRS cities given \$350,000 each plus equipment loans from the U.S. Department of Defense to establish programs
- 1998: No new programs and no continuation funding for existing programs
- 1999: Twenty new MMRS cities given \$600,000 each, with twenty-five existing programs given \$200,000 each to enhance biological preparedness
- 2000: Twenty-five new programs established with \$600,000 each, and no continuation funding for existing programs
- 2001: Twenty-five new programs at \$600,000, with no continuation funding for existing programs
- 2002: Twenty-five new programs at \$600,000, with \$50,000 continuation funding for existing programs
- 2003: Four new regional MMRS programs at \$600,000; existing programs were assigned \$280,000 in FY 2003 and \$400,000 in FY 2004
- 2004–2007: No new cities; overlapping performance periods make funding difficult to track; funds to sustain existing MMRS cities in 2004, 2005, and 2006 averaged \$235,000 each year, with \$258,145 allocated in 2007.

One detail may give some perspective to the magnitude of the funding: for a moderate-sized city, the cost to repurchase the MMRS-required pharmaceutical cache (repurchase is at expiration, or about every three years) can exceed \$100,000. But despite modest or sometimes no continuation funding, none of the cities has dropped out of the program.

Ultimately, aside from the National US&R program,<sup>27</sup> MMRS represents the only federally devised model for disaster operations that has been tested through repeated exercises and deployments. The challenge for MMRS is sustainability, or the need to maintain “adequate funding and effective management of preparedness and efforts to keep domestic preparedness as a policy priority.”<sup>28</sup> DHS has provided low-level funding to MMRS, but future federal support is not guaranteed. No new MMRS programs have been established since 2003. The FY 2006 allocation for the national MMRS program decreased to slightly more than \$29 million, down from \$50 million in FY 2005. In both years the program was assigned no funding in the Bush administration’s proposed budgets, but congressional efforts restored some of it. For FY 2007, the allocation to the national program was just over \$32 million.

### **The National Incident Management System**

DHS Presidential Directive Number 5 (HSPD 5), a direct response to the September 11 attacks, established NIMS; it requires all federal agencies to adopt NIMS immediately, and all state and local organizations (including Indian Nations) to adopt it as a condition for accepting federal homeland security funding. Despite the name, NIMS is much more than a specification of command structure.<sup>29</sup> It prescribes a nationwide, FEMA-based planning process and defines preparedness practices for state and local jurisdictions.

#### **The elements of NIMS**

NIMS is intended as a nationwide framework for all-hazards planning and response. This goal duplicates (but does not cross-reference) the aim of long-standing FEMA programs: to engage in *comprehensive emergency management* through *integrated emergency management systems*. To achieve this goal, NIMS has six components, but much of the current NIMS documentation addresses only one of them—command and management—and specifically only one part of it: the Incident Command System (ICS). “Other aspects...will require additional development and refinement to enable compliance at a future date.”<sup>30</sup> Detailed descriptions of NIMS are available elsewhere,<sup>31</sup> so this section merely summarizes the six components: command and

management, preparedness, resource management, communications and information management, supporting technologies, and ongoing management and maintenance.

The command and management component addresses incident response organization and public information, defining the principal issues as those centering on the incident command system, “multiagency coordination systems,” and “public information systems.” The NIMS ICS is very similar to the traditional IMS widely used for decades by fire services. In the conversion from IMS to NIMS ICS, federal planners have changed commonly used names for some IMS components (IMS “sectors” are NIMS “divisions” or “groups”), have changed standard protocols for naming IMS assignments (the IMS “branch chief” is the NIMS “director”), and have relegated some functions to different levels. For example, the IMS safety section is a subfunction under command in NIMS, and NIMS command lacks the IMS roles of senior advisor and support officer. The NIMS ICS, like IMS and other incident command systems, otherwise provides a structure for incident response that emphasizes organization, accountability, and command, using both unified command, which is established across disciplines in the same jurisdiction, and area command, which is established across multiple jurisdictions.

Preparedness, the second NIMS component, “involves an integrated combination of planning, training, exercises, personnel qualification and certification standards, equipment acquisition and certification standards, and publication management processes and activities.”<sup>32</sup> The program defines the planning process and structures to be used. There is an explicit admonition to address mitigation, whereas recovery is mentioned but not elaborated on. The guidance admits that the specifics of preparedness are jurisdictional functions (and not federal functions), but the guidance nonetheless issues demands. Much of NIMS preparedness reflects conventional procedures for planning, training, exercising, and mutual aid pacts. The different and constraining parts of NIMS include DHS standards for the testing and certification of local personnel and for the certification of jurisdictional equipment.

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**NIMS is intended as a nationwide framework for all-hazards planning and response. This goal duplicates the aim of long-standing FEMA programs: to engage in comprehensive emergency management through integrated emergency management systems.**

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The NIMS resource management component also is complex and intrusive. Of the principal responsibilities, three are routine parts of any emergency response system: resource activation before and during an incident, resource dispatch capability, and recall and deactivation protocols. The other responsibility under resource management requires a resource inventory that uses a DHS-devised “resource typing system.” The system defines each resource individually and specifies how it is to be categorized, acquired, and tracked by local jurisdictions. DHS also demands that local personnel who handle resources be certified and credentialed through a centralized process. And DHS/FEMA has rules for determining what resources are needed for an incident as well as how they are to be ordered, mobilized, tracked, reported, and recovered. DHS/FEMA has developed partial definitions (e.g., not all types of self-contained breathing apparatus are defined) for 120 resources.<sup>33</sup> (To put this in perspective, it is usually estimated that as many as ten thousand resources were used in the response to Katrina.)

The communications and information management component develops standards for incident communications (including for interoperability) and defines processes for managing incident information. Relative to intra- and interagency communications, NIMS specifies that “effective communications processes and systems exist” that will follow unnamed standards “designated by the NIMS Integration Center in partnership with recognized standards development organizations.”<sup>34</sup> The center, staffed by federal NIMS specialists, maintains a Web site where NIMS documents and requirements are posted and where locals are allowed to post questions about NIMS and NIMS compliance. Interoperable communications are required, but no milestones are suggested, and none of the existing federal programs on interoperability<sup>35</sup> is mentioned—not even the existing programs established by DHS.

The supporting technologies component requires that local governments continually review the availability of new technology. This requirement directs local jurisdictions to adopt strategic planning practices that make it possible for scientific advances to be identified, assessed, and incorporated into the preparedness process. What is not clear is how much of the cost burden for this is to be assumed by local governments. DHS does commit itself to a science and technology research program whose results will be shared with other governments and the private sector, and the NIMS Integration Center will "issue appropriate guidelines as part of its standards-development and facilitation responsibilities."<sup>36</sup> There is no explanation of how these standards will relate to the testing and certification of equipment described under other NIMS components.

The ongoing management and maintenance component establishes strategic direction for, and oversight of, NIMS. This responsibility is assumed by DHS and delegated to the NIMS Integration Center. DHS commits itself to creating a feedback function to receive comments about NIMS from other governments and the private sector.

### **NIMS as policy**

As emergency management policy, NIMS is very hard to assess meaningfully. Multiple features have been cited as problematic, beginning with its creation. Many practitioners and disaster researchers agree that "NRP and NIMS have been developed in a top down manner, centrally coordinated by DHS. Views differ on the scope and intent of stakeholder involvement in developing NRP and NIMS."<sup>37</sup> It appears that the academic disaster-research community was minimally involved in the process of generating NIMS. The record is not clear about how or from whom DHS solicited other guidance or how such other guidance was incorporated. Of even greater concern to municipal emergency agencies is the detail in which processes and protocols are specified, superseding local practice. The significant question is whether such detailed specification promotes or retards the effective and efficient management of disasters.

On the matter of certification and standard setting, the demands placed on local governments have their counterpart in the demands that the requirements impose on DHS, FEMA, and the NIMS Integration Center themselves. The clearest certification standards to date require that virtually all administrative and response personnel in emergency-relevant organizations throughout the United States be trained and tested in NIMS and NIMS ICS—requirements that initially meant that personnel would individually take Internet classes through FEMA and be examined, graded, and certified. But the technology was not always adequate or able to handle the demand. After much frustration at state and local levels, DHS announced a new program for 2006 to partner with local entities and to simplify and speed the certification process.<sup>38</sup> The elaborate partnership program requires "Master Trainer" training and certification, instructor training and certification, and facility requirements. It is not clear whether the new program relieves demands on the federal sector, but it certainly increases demands on DHS training partners. Since the partnering is not required, it also is not clear how willing localities will be to participate. What may seem confusing is that on the one hand, compliance (certification) is required, but on the other hand, partnership (the road to compliance) is optional.

In summary, much of NIMS is "interim," much is simply not yet elaborated (five of the six components), and many demands for standardization and certification are without a specified process. Those certification processes that have been implemented have proved hard to operate with the DHS control (computer) systems. The NIMS formulation tends to ignore existing federal and local programs that have the same or similar goals, and NIMS documentation is not well integrated with that of other federal plans and programs. Faced with programs that do not operate, DHS has devised solutions that themselves are unworkable and has continued to issue demands for compliance.

The demands on local jurisdictions are overwhelming, yet the federal Homeland Security Grant Program (HSGP) either explicitly forbids the acquisition of personnel or minimally funds administrative support. Only the largest municipalities can fully staff an emergency management agency, and therefore many of the extensive NIMS requirements have to be fulfilled by small committees or by fire services or police departments whose primary functions are public safety rather than emergency planning. The likelihood that NIMS can be success-

fully implemented is therefore hard to estimate. Although DHS can impose NIMS adoption as a condition of accepting federal disaster preparedness funding, official adoption is quite different from effective implementation. In principle, a national IMS (NIMS ICS) is highly desirable, but the implementation process is slowed when so many elements that centrally define local emergency planning are put into the federal framework.

## Summary

Response operations have been made increasingly complex and challenging by changes over time: for example, greater numbers of people moving into areas prone to natural hazards, the invention and use of more and different chemicals, and the rapid rise of terrorist threats. Looked at specifically in terms of disaster agents, different CBRNE agents demand different detection equipment, different types and levels of personal protective gear for responders, and different medical approaches to victims. In terms of the scale of the event and the size of the region affected, different resources and approaches to management will be required. This combination of variable features—agent, scale, and size of region—means that effective response operations are most likely to flow from an effective emergency planning process. The message to administrators is that the route to good disaster operations is a firm (and financial) investment in emergency planning.

Disaster operations are also improved when knowledge of patterned behavior and demands is incorporated into the design of response, as well as when measures are taken to meet administrative mandates. Disaster research demonstrates that, contrary to conventional wisdom, people faced with disaster tend to take constructive actions and are prone to (temporarily) increase their trust in government. This knowledge tells us that citizens can reasonably be expected to take part in response operations and that when emergency managers share reasoned expertise and protective action recommendations with citizens, trust will enhance compliance. Particularly in the case of terrorist incidents, knowledge that disaster experiences can have longer-term consequences for citizens reminds emergency managers to anticipate demands for behavioral health care. It is also known that volunteers come to emergency scenes and others send donations (cash, food, clothing, and other tangibles). This pattern cues emergency managers to devise a system and a place for sorting and assigning both personnel and other donations.

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### **The route to good disaster operations is a firm (and financial) investment in emergency planning.**

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Research also demonstrates that concern over role abandonment by first responders is largely mythic; only under rare circumstances do first responders leave their assigned posts. Indeed, measures are available—“welfare checks and reports” on family members, for example—that reduce the anxiety of first responders during operations. Finally, the key to response and recovery funding from local, state, and federal government is the disaster declaration. For mayors, governors, and the president of the United States, the release of jurisdictional funds for emergency and recovery purposes is contingent on an official jurisdictional declaration. Knowing this, local government officials should streamline their information-gathering and damage assessment processes during operations in order to produce the information needed for successive (local, state, and federal) disaster declarations.

To support disaster operations, DHS administers the HSGP, two of whose five separate programs are examined above. (These five, in the order in which they are mentioned in the HSGP application packet for 2007, are the state homeland security program, UASI, the law enforcement terrorism prevention program, MMRS, and the Citizen Corps.) In 2007, UASI and MMRS together were allocated nearly \$800 million. UASI, initiated in 2003, currently covers forty-five urban areas that have been determined to have high or special risk characteristics. As policy, UASI has the advantage of targeting areas on the basis of risk calculations, and it allows local jurisdictions some latitude in devising an operational approach. At the same time, it does not

provide for new personnel, and it imposes immense accounting demands on both state and local governments. There has been no formal or independent (of DHS) comprehensive evaluation of UASI. The jurisdictions have completed multiple exercise cycles since the program started, but security demands limit access to information about outcomes.

MMRS began in 1997 and currently includes 124 jurisdictions. A large component of MMRS is managing mass casualties, so in that sense it is less global in operational scope than UASI. Funding for starting and continuing local MMRS programs has been sporadic, but the jurisdictions involved have largely remained loyal to the program and the concept. MMRS programs have been successfully activated for many major disasters, including the rush of anthrax "emergencies" that arose across the United States in the four months following 9/11. Together, UASI and MMRS offer emergency planning and operations coverage for a large proportion of the population of the country and for virtually all large urban areas.

Finally, the national government has engaged in a significant effort to improve response operations through NIMS. NIMS is administered by DHS/FEMA and is required for all federal executive departments and agencies and for all local and state governments that accept homeland security funding. The basic goals of NIMS—to have a common incident command system, promote effective communications and emergency planning, embrace a common system for operational resources and information, and support continuing attention to technology—are very positive in principle. Indeed, almost all emergency managers and disaster researchers would concur that both locally and nationally, the emergency response system would be stronger if all NIMS dimensions were implemented. However, there appear to be three major difficulties that interfere with achieving the positive effect. First, the full NIMS program has not been laid out by DHS/FEMA; there are many gaps in definitions of what is expected and how it should be achieved. Second, there is generic concern that NIMS as a single plan, devised largely by federal officials, may not fit all jurisdictions equally well and therefore may not be capable of delivering the full benefits promised. Third, NIMS imposes many administrative demands and training demands on local jurisdictions that translate into serious budget expenditures. To date, DHS has allowed some NIMS compliance costs to be covered under the constituent programs of the Homeland Security Grant Program. If such costs are not defrayed through this or some other mechanism in the future, it is not clear how local jurisdictions can continue to progress in implementing NIMS.

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