

Are We Prepared for Terrorism Using Weapons of Mass Destruction? Government's Half Measures

by Eric R. Taylor

Executive Summary

In 1996 the U.S. Congress passed and the president signed the Nunn-Lugar-Domenici Act on domestic preparedness for terrorism using weapons of mass destruction. That law directs various departments and agencies of the federal government to make available to state and local governments training and equipment to respond to acts of terrorism involving the use of radiological, biological, and chemical weapons. The program—costing tens of billions of dollars per year—seeks to train local law enforcement, fire, medical, and other emergency response personnel to deal with such an attack against the American public.

According to the chairman of a national panel on terrorism, however, the United States lacks a clear plan for meeting the needs of its citizens in the event of a terrorist attack, and the hodgepodge of local and federal agencies makes it unclear who is in charge of the existing program.

The federal government originally decided whom to train and configured the training program. In so doing, it did not consider the fact that many local communities cooperate under mutual assistance agreements. Furthermore, under the current program, personnel in more than 50 percent of the major U.S. population centers will remain untrained and unprepared for any future nuclear, biological, and chemical (NBC) attack.

The most significant shortcoming of the Nunn-Lugar-Domenici law is the complete lack of any educational program to prepare the public for an NBC attack. Although the public is the ultimate target of any terrorist attack, average citizens are left ignorant of the fundamentals of preparedness that even the lowest private in the U.S. Army is taught for survival. The lack of any credible public education program in matters of awareness and response violates many entrenched principles of emergency management.

The proliferation of weapons of mass destruction could lead to a dramatic increase in the number of casualties from terrorist attacks.

Introduction

Although the number of incidents of terrorism has declined since the end of the Cold War, the proliferation of weapons of mass destruction (WMD)—radiological, biological, and chemical weapons—could lead to a dramatic increase in the number of casualties from terrorist attacks. Many experts agree that the only question is when, not if, such a catastrophic act of terrorism will occur. The past 25 years have revealed the vulnerability of the U.S. populace to such attacks. The natural outbreak of Legionnaire's disease, which struck a gathering of American Legion conventioners in Philadelphia in 1976, foretold the potential stealth of bioweapons. The U.S. military's own historical actions have shown just how easily and surreptitiously a civilian population can be "dosed" either in supposedly "benign" experiments or for real.¹ Post-World War II experiments employed "harmless" microbes or "nontoxic" chemical agents that were tracked by U.S. military officials for their dispersion, concentration, and other characteristics at distances from the site of release. The exposure of those experiments and the targets of interest reveal the vulnerability of civilians and facilities to covert nuclear, biological, and chemical (NBC) attack. Our enemies pay attention to those covert military experiments.

In 1984 what appeared to be a natural salmonella outbreak in Oregon proved to be a biological attack initiated by Rajneesh cult members.² The year officials took to determine that the incident was a biological attack illustrates the difficulties of timely detection of such incidents. In late 1998 and early 1999 several alleged anthrax attacks directed at abortion clinics around the United States clearly raised the potential stakes in a heated domestic issue.³ In 1994 a suburb of Matsumoto, Japan, was the site of a nerve gas attack that killed 7 and injured 2,000. In March 1995 the release of the nerve agent Sarin in the Tokyo subway killed 12 and injured about 5,000.⁴ Those attacks illustrate

the vulnerability of corresponding U.S. facilities.

With good reason, the U.S. government exhibits concern about the use of such agents in the future. Unlike unjustified U.S. military interventions overseas in the name of "national defense," the protection of the U.S. population against terrorism using WMD is a legitimate function of the federal government.

The Nature of the Problem

The use of NBC agents against a nation's military forces generally is a form of unconventional warfare. The use of those agents against a nation's population is certainly an act of war and is arguably even terrorism.

Chemical Weapons

Although U.S. troops in World War I experienced chemical attacks in the trenches of France, the United States itself has not. But a good example of the potential lethality of a chemical attack exists: the accidental release of a very toxic industrial chemical in Bophol, India, in 1984 illustrates the grave consequences for an unprepared, unprotected, and exposed population. Also, U.S. experience with accidents and explosions at chemical and petroleum-refining plants serve as a working model of the chaotic problems that the use of lethal military chemical agents can create.

The timing of the onset of symptoms among people affected is determined by the type of chemical agent used. The effects of nerve agents will manifest themselves within seconds or minutes; the effects of agents such as mustard gases may require a few minutes to several hours to appear.

Radiological Weapons

The most significant lethal experiences with radiological hazards on a massive scale were the two fission bombs dropped on Japan in World War II and the nuclear accident in Chernobyl, Ukraine, in April 1986. The closest call in U.S. history was the nuclear incident at the Three-Mile Island nuclear power plant in

Harrisburg, Pennsylvania, in March 1979.

Although a terrorist attack using a nuclear weapon cannot be ruled out, the most likely nuclear agent is radioactive dust dispersed to create maximum contamination of personnel and facilities. The term “radiological” rather than “nuclear” should be used to describe that particular threat. Instead of a mushroom cloud’s serving as a calling card, stealth and surprise are employed to expose people unknowingly and thus maximize the effect. The threat of exposure to radiological agents decreases with the square of the distance from the site of release. The threat to those in the immediate area of release is real and potentially grave. But people carrying the radioactive dust on their persons will carry it away from the site of release and contaminate others. The appearance of symptoms as a result of a radiological attack will depend on the form of the radiation, the level of exposure, and the degree of inhalation or ingestion of radioactive dust.⁵

Biological Weapons

The release of anthrax by a Soviet military research facility in Sverdlovsk in April 1979 shows the potential consequences of an attack with biological weapons (BW) and carelessness in working with those very lethal agents.⁶ In the United States, the experience with natural epidemics of disease—for example, the natural outbreak of the Spanish flu during World War I⁷—best illustrates the havoc that a biological attack would wreak on a population center. The natural disease model, however, suffers from lack of the egregious psychological and medical consequences that a weapons-grade biological agent will create in the targeted population.

Biological agents can be spread by many of the same means employed for dispersal of chemical or radiological agents. But biological agents pose a significantly greater threat because of their self-propagation in hosts and further spread by infected individuals who travel extensively during the course of their daily activities. The bioagents can multiply within the bodies of infected individu-

als, making infected persons secondary vehicles for delivering the weapons. Mass transit hubs (such as airports and train and bus stations) are ideal locations to perpetrate a biological attack because the agent can be spread quickly to many locations.

Biological agents are strategic weapons. Normally, only a small amount of agent is required to infect a population. The ideal venue for a BW attack is an enclosed area such as an indoor stadium or subway system. Ventilation systems are the ideal means of dispersal. Respiratory infection is much more lethal than cutaneous exposure and therefore requires much smaller quantities of the agent.

The effects of biological agents depend on the type of agent, the inoculating dose, and the targeted community’s immunity to the agent. The choice of agents for which there are no vaccines or for which vaccines have ceased being made, such as smallpox, or for which no domestic medical history exists, such as West Nile encephalitis, will enhance the effects of such an attack. Bioagents that cause the extremely rapid onset of symptoms—such as the Ebola or Marburg viruses—have dramatic effects that will instill unprecedented terror. In some respects, however, the rapidly infectious agents may be inferior choices as weapons. A longer incubation period permits greater spread before symptoms become debilitating and alarming to the carrier, family and friends, attending medical personnel, and law enforcement and military responders.

For a BW attack, the real first responders would be the victims—who would go either to the hospital emergency room or to the morgue several days after the event. Doctors would probably diagnose the problem well after the incident. Blood, biopsies, and tissue samples would need to be examined by competent and alert pathologists who would have to suspect or know that they were looking for something unnatural masquerading as natural. In the mean time, the pathogen would continue to spread. With modern transportation systems (air, rail, and inter-

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state highways), the spread of the organism would probably be much more rapid than it was during the WWI influenza pandemic. With travel of infected people across the country from city to city and state to state, biological attacks present a potential threat to the United States and its population or agriculture—potentially rivaling the casualties of Hiroshima-style nuclear bursts. In contrast, chemical and radiological attacks will have short-term or very localized effects on a specific population. A biological attack poses the greatest threat in terms of difficulty of detection, ease and rapidity of spread before being discovered, and numbers of casualties arising over time.

A U.S. Policy of Military Restraint Could Reduce the Likelihood of Terrorist Attacks

The United States and its population may be especially vulnerable to an attack with WMD, in part because of profligate U.S. military interventions around the world. The United States is the target of 40 percent of terrorist attacks worldwide. Yet the United States has no quarrels with its neighbors nor an internal civil war to spawn terrorist attacks. Ivan Eland of the Cato Institute has documented the historical relationship between terrorist attacks against U.S. targets and interventionist U.S. foreign policy.⁸

Although the casualties caused by even one terrorist attack using WMD could be massive and catastrophic, terrorism is still a rare phenomenon and should be put in perspective. Pete du Pont, former governor of Delaware and policy chairman of the National Center for Policy Analysis, using figures from the Federal Bureau of Investigation (FBI) and the Department of State, notes that the United States is the target of about 15 terrorist incidents each year, most of them involving exploded and unex-

ploded bombs. Since 1982 an average of 42 Americans die and 115 are injured each year from international acts of terrorism. And that average was raised by the catastrophic bombing of Pan Am flight 103 over Lockerbie, Scotland, in 1998. For perspective, du Pont further notes that about 900 Americans drown in bathtubs and swimming pools each year. He notes the risk posed to America's cherished civil liberties by the fight against terrorism.⁹ The best way to lower the chances of an act of catastrophic terrorism is for the United States to adopt a general policy of military restraint overseas but respond forcefully and without public fanfare to isolated terrorist incidents against U.S. targets.

Government Response to WMD Attacks

When an attack with WMD against the American public happens, the U.S. government will take action. There are three primary concerns that government must address.

First, government responses must be directed at minimizing potential injury and death from the initial exposure and implementing actions to prevent harm to those individuals not immediately exposed at the time of release. Attaining those objectives requires rapid isolation and decontamination of the attack site, identification of the agent class (radiological, biological, or chemical), evaluation of exposure levels, and evacuation of exposed individuals to appropriate facilities equipped and staffed to deal with the specific agent class involved. Those government actions will require the full cooperation of the individuals in the immediate area of agent release.

Second, a prime concern for law enforcement officials is gathering evidence for use in later prosecutions. First, the attackers must be identified. However, evidence may be destroyed in the course of the immediate "consequence management" activities described above. Thus, a prime element of

Figure 1
U.S. Government Structure Involved in Responding to a WMD Attack

To see the figure please [click here](#)

Source: Adapted from U.S. General Accounting Office, "Combating Terrorism: Federal Agencies' Efforts to Implement National Policy and Strategy," GAO/NSIAD-907-254, September 1997, p. 21.

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the usual response to any crime—securing the site—may be very difficult in view of the imperative need to assist victims.

A third concern is mitigation. The results of the attack and methodologies employed in responding to it will be assessed to determine ways to prevent a repeat incident or follow-on events.

Local government (and its emergency agencies) is usually the first to respond to any disaster—natural or technological. If local agencies are taxed beyond their capabilities, they turn to state-level agencies for additional resources, which are coordinated through the state Offices of Emergency Preparedness (OEPs). If the incident is of such a magnitude that state resources are also insufficient, then the Federal Emergency Management Agency (FEMA)—and through it, the vast resources of the federal government—is called upon only after an appropriate declaration by the president. Thus, any emergency is first and foremost a local matter at the outset and throughout its course.

Currently, the United States spends about \$10 billion a year on WMD preparedness programs, including the training of local emergency management personnel to respond to a WMD attack.¹⁰ Major U.S. government agencies involved in preparedness are FEMA, the Department of Justice (DOJ), the FBI, the Department of Energy (DOE), the Department of Transportation (DOT), the U.S. Treasury, the Department of the Interior (DOI), the Environmental Protection Agency (EPA), the U.S. Public Health Service (USPHS), the Veterans Administration (VA), the Department of State (DOS), the National Security Council (NSC), the Department of Defense (DOD), the Joint Chiefs of Staff (JCS), the Central Intelligence Agency (CIA), and numerous other secondary offices (such as Treasury’s Secret Service, Bureau of Alcohol, Tobacco, and Firearms, and Customs Service).¹¹ [Figure 1](#) illustrates the structure of the federal government’s organization to respond to any WMD attack.

The Domestic Preparedness Program

The Domestic Preparedness Program (DPP) arose from the Nunn-Lugar-Domenici Act in the fiscal year 1997 Defense Authorization Act.¹² The DPP “trains the trainers,” that is, the federal government trains local officials and personnel, who in turn train subordinates. The program provides funding to DOD and other agencies for that purpose. The federal government views the potential threat of a WMD attack on the United States, be it from within or from without, as serious enough to justify a significant investment of money and personnel each year.

The NSC’s national coordinator for security, infrastructure protection and counterterrorism coordinates the efforts of various federal agencies to respond to a WMD attack. A National Domestic Preparedness Office (NDPO) is responsible for such coordination at the working level. The current domestic preparedness effort includes six major training courses designed for “first responders”—police, fire, hazardous materials (HAZMAT), and medical personnel and command officials. Courses are offered in awareness, operations, technician-HAZMAT, technician-emergency medical services, provision of hospital care, and incident command.¹³ As of this writing, personnel in about 51 of the originally designated 120 cities have received training in those subjects from federal officials.

The response to an attack using WMD, as is that to other emergencies, is divided into two main phases: crisis management and consequence management. Crisis management consists of reacting to a possible or imminent attack and immediate actions to respond to an attack in progress. The FBI takes the lead in that phase of the response. As noted earlier, consequence management encompasses those actions required to deal with the aftereffects of an attack. FEMA takes the lead in that phase. In the preparation phase of the DPP, the Soldiers Biological

and Chemical Command (SBCCOM) has taken the lead in training state and local officials and personnel in subordinate agencies. The SBCCOM has about 18 experts on WMD on call to advise responders on technical and procedural issues.

Readiness concerns, legal issues, and infrastructure capabilities or limitations have led to reassessment of training responsibilities previously vested in DOD. On October 1, 2000, DOJ assumed all training responsibilities from DOD. The view held by DOD and DOJ is that DOJ can better serve the needs of civilians for NBC training.¹⁴ The major training courses given by the federal government are listed below.

Responder Awareness Training

Responder Awareness is a four-hour course for firefighters and law enforcement personnel. The essential course objectives are to teach responders to recognize a WMD threat from signs, symptoms, and trends. The course teaches recognition of chemical and biological agents and types of radiological materials. The program seeks to alert responders to physiological and psychological effects of biological and chemical agents and radiological substances. The seminar covers the kinds of possible dissemination devices that could be used and what individual protective measures can be taken against an attack.

Responder Operations

Responder Operations is a four-hour course designed for incident response teams. The course seeks to train first responders to predict chemical hazards downwind. Personal protection needs and capabilities also are a critical element of this course. In addition, first responders learn about the materials used as NBC agents, the means of detecting them, and use of identification equipment.

Technician-HAZMAT Training

The 16-hour Technician-HAZMAT course is for fire and other personnel handling

HAZMAT. The course teaches recognition of NBC incidents from signs, symptoms, and trends, as well as the identification of chemical and biological agents and radiological materials. Students also learn the physiological and psychological effects those materials and are expected to become familiar with the terminology for and definitions and characteristics of chemical, biological, and radiological agents. In addition, they learn the use of equipment and materials for the detection and identification of those agents. The selection and use of protective equipment and clothing also are part of the course. Finally, students learn methods of decontamination.

Technician–Emergency Management System Training

The Technician–Emergency Management System (EMS) course is an eight-hour class designed for emergency medical technicians, such as medics and ambulance personnel. Those professionals, who are most likely to respond to the medical effects of NBC agents, are taught the acute health implications of exposure to such substances. The course considers the legal and safety implications of using antidotes (where applicable) to treat casualties of a WMD attack. Also taught are unique aspects of triage in an NBC environment, including the handling of mass casualties. Finally, the course examines emergency medical treatment in the field of people exposed to NBC agents.

Technician–Hospital Provider Training

The eight-hour Technician–Hospital Provider course considers six major concerns. The class is primarily directed to medical personnel, such as physicians and nurses, but also may include those peripherally involved with direct medical interventions. The course covers the acute effects of exposure to NBC agents and alerts personnel to trends suggesting an NBC incident. The course also considers safety and legal issues surrounding the use of antidotes. The imperatives of decontaminating victims and emergency medical treatment of NBC casualties are also considered.

Only a relatively small number of communities across the nation have thus far been provided with the knowledge and operational techniques for dealing with WMD threats.

Awareness of the threat of NBC attack is suboptimal and much work is still needed to correct that deficiency.

Incident Command Course

The Incident Command course is an eight-hour class for personnel manning the command post that coordinates the response to any NBC threat or attack. The Emergency Operations Center (EOC) includes senior municipal officials, such as the mayor; the chiefs of police and fire departments; the sheriff; state officials, such as senior state police officials; and representatives from the FBI, FEMA, USPHS, and other federal agencies. The role of those officials is to determine the extent and depth of the threat or hazard and to coordinate all local, state, and federal assets brought to bear on the incident. Thus, the course seeks to teach management of the incident site, coordination of assets responding, development and implementation of procedures for responding to and handling mass casualties and decontamination, and assessing hazards and impact downwind—including any necessary evacuation of personnel. The incident command makes all decisions on detection and identification of agents, protective measures, and decontamination; determines when reoccupation of the incident site is safe; and develops a site safety plan. In short, the incident command is the brain center for managing any NBC response.

Any NBC threat or attack is essentially viewed as an act committed against the local government. Federal assets are available to assist in the response, but it is not a federally controlled response. Existing procedures for responding to any disaster or emergency are still in place and will be followed.¹⁵ Thus, local officials call on state authorities for any needed assistance, and state authorities call on federal assets as needed.

Other Training

There are two other courses given. The initial session is an Employee Awareness course that lasts 30 minutes. In this briefing, employees learn of the potential for NBC use by terrorists, how to recognize an NBC attack, and how to properly notify higher officials of a suspected NBC incident. They

learn how to recognize trends that indicate a developing NBC incident and how to take protective measures. Thirty minutes seems a paltry amount of time to impart such knowledge.

The other course is a Senior Officials Workshop four and a half hours in length. That workshop is for mayors and their cabinet officials. Participants learn to identify likely targets of an assault using NBC and explore the implications of an NBC attack for their community; are told how local, state, and federal responses are integrated; and learn various public relations procedures to (allegedly) minimize confusion, panic, and chaos in the general population.

On paper, the government effort looks good. Until an actual NBC attack occurs, however, it is unclear how “seamless” all the planning and training will be. The question is how federal help is being absorbed at the local level and whether it benefits the public.

Official Reviews of the Existing Plan

The U.S. General Accounting Office (GAO) has made numerous reviews of the Nunn-Lugar-Domenici program. The GAO has reviewed many issues, including the intent of Congress, the programs, and the risk and threat assessment. Not all such reports will be noted here, but those on issues pertaining to preparation, education, and effectiveness will be.

One GAO report, completed in November 1998, reviewed the training programs given to personnel of U.S. cities. GAO visited seven cities that had received the training for first responders.¹⁶ The report included the following points:

- DOD did not take advantage of regional mutual assistance agreements when selecting cities for training. Consequently, many localities surrounding major cities were omitted from the training list. (That failing could have serious

consequences for an overall response to an NBC attack. When agencies in a city call on regional emergency personnel for help in an NBC incident, those personnel will be ignorant of the intricacies of NBC operations.)

- Many cities expressed concern about yet another layer of bureaucracy in the notification channel for federal assistance. Well-established and tested channels have been used successfully in more common natural and technological disasters; most cities expressed doubt that they would resort to newer and untested channels.

The Nunn-Lugar-Domenici provision requires reimbursement for assistance provided by the DOD.¹⁷ But reimbursing DOD after a disaster could mean serious economic straits for a city struggling to recover from an attack.

An April 1998 GAO report on risk and threat assessment noted that the federal program has not required a threat and risk assessment either to select cities for training or to determine their needs in training and equipment.¹⁸

According to a March 1999 GAO report, the USPHS has not made an adequate assessment of the NBC threat, the risks involved, or the logistics of proposed preparations.¹⁹ Although the USPHS stockpiled antibiotics, vaccines, and antidotes in million-unit quantities, it was unclear what the specific basis for assessing preparations was. Given the relatively short shelf life of those perishable items, such endeavors will be costly and of questionable value.

The GAO reports and other presentations cite the World Trade Center and Oklahoma City bombings in support of NBC preparedness. Those two events—as horrendous as they were—are routinely and erroneously cited to justify preparedness. But to compare the use of conventional explosives with the employment of chemical and biological weapons is to compare vastly dissimilar means of attack. For all their immediate vio-

lence, explosives do not cause the magnitude of carnage that rampant virulent disease does when packaged for a well-planned and coordinated bioterrorist attack. The 1918 Spanish Influenza pandemic should clearly readjust such thinking. In fact, Raymond Zilinskas of the Center for Nonproliferation Studies argues convincingly that our preparatory needs for an NBC attack would be better served by preparing for emerging, reemerging, and transported infectious diseases.²⁰ Proper preparation for those diseases would automatically put in place the massive procedures needed for an instant reaction to any potential NBC threat.

Snapshots at the State and Local Level

The goal of the DPP would seem to be to inculcate local awareness of the risks and hazards of, and the necessity of preparing for quick reaction to, WMD attacks. As noted above, only a relatively small number of communities across the nation have thus far been provided with the knowledge and operational techniques for dealing with such threats. Those communities are large metropolitan areas. Smaller communities or outlying locales, which may be perceived as lower priority targets for terrorists, may have been neglected. The author conducted interviews with local, county, and state level authorities in Louisiana between February 4 and April 13, 2000.²¹ The interviews showed that awareness of the threat of NBC attack is sub-optimal and that much work is still needed to correct that deficiency. Aside from budgetary constraints or personnel limitations, the prioritizing of local needs and more immediate perceived threats may place NBC concerns a little further down the list for any number of “legitimate” reasons.

State Level

Many state emergency management agencies (SEMAs) are under the authority of the state’s National Guard and are manned by

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Federal plans for training local personnel did not include the primary state agency concerned with emergency preparedness.

Guard personnel. Those agencies have immediate responsibility for emergency preparedness within state borders. SEMAs are responsible for planning, preparedness, response, recovery, and mitigation efforts but work through their local counterparts. Training of local personnel to respond to specific hazards is or can be scheduled through the SEMA. SEMAs offer many opportunities for training personnel of local OEPs. In the DPP, DOD seems to have elected to bypass the SEMAs. An unstated reason for DOD's willingness to transfer training responsibilities to DOJ may have been the great burden incurred to coordinate, schedule, and administer training at the local level without using the SEMAs. DOJ has pledged to work with the SEMAs.

The author contacted by phone several SEMAs across all regions of the United States.² A simple question was put to each SEMA: "Did the federal government (DOD, DOJ, FEMA, etc.) directly contact the SEMA to coordinate, arrange, and plan the training of local jurisdictions?" The response was unanimously negative. Each state is aware of the emergency plans, preparedness, awareness, and abilities of its local jurisdictions (such plans are on file with the SEMA) so the SEMA would seem to be a logical point of contact for the federal agencies in making any plans for education on WMD. But federal plans for training local personnel did not include in the integrated chain of command loop the primary state agency concerned with emergency preparedness. DOD did not even provide the SEMAs a courtesy copy of the notification of local training. After DOJ assumed DOD's training responsibilities, several SEMAs did raise objections about the bypassing of state government. According to several SEMA officials contacted, DOJ has agreed to work directly with SEMA officials on such matters in the future.

Many SEMAs noted that training could be more effective if coordinated through a state agency. State agencies know more than does the federal government about the capabilities and training needs of the local juris-

dictions. In a few cases, DOD's insistence on dealing directly and exclusively with cities upset the legal mandates in states. That is, in some states, emergency management is centered at the county level as an umbrella covering cities; cities have no system separate from that of the county.

Some SEMAs noted that cities often object to state involvement and prefer going directly to the federal agencies. DOD's original approach enhanced that preference—leading some SEMAs to feel that the basic federal response plan was not being followed.

In one case, a SEMA official observed that the state and its localities were being bombarded by too many federal agencies—each with its own perceived mandate. That situation creates the impression that no coordination exists among federal agencies. According to one SEMA official, the agency was playing catch-up because the state was bypassed as the coordinator for the multiplicity of federal agencies involved.

DOD seemed to be bypassing not only the SEMAs but FEMA as well. One SEMA official observed that FEMA still seems to be left out. In addition, much infighting among federal agencies about control and implementation of the program seems to be occurring. That might be another reason for DOD's willingness to give all responsibility for training to DOJ.

Jim Gilmore, governor of Virginia and head of a national panel on terrorism, recently confirmed that chaos reigns in the program. He noted that the United States lacks a clear plan for meeting the needs of its citizens in the event of a terrorist attack: "We do not have a national strategy to deal with domestic terrorism and how to respond to it and how to deal with its implications after, or during, an incident. It is highly dangerous." He also said that the hodgepodge of local and federal agencies makes it unclear who is in charge.^{2,3}

County Level

In cities receiving the training, the local OEP and sheriff's office are part of the groups of first responders getting the

instruction. But in locales too small to be included, local OEPs, sheriff's offices, and police departments receive no education or training on WMD.

Municipal Level

At the city level, the police department, the fire department—and within the fire department the HAZMAT unit—will likely be summoned to the scene of any chemical or biological incident. The HAZMAT unit is the more likely of the two agencies to be equipped and trained to deal with noxious and poisonous materials, such as NBC agents. Given the significantly greater and more rapid effects of military-grade NBC agents, however, they cannot be treated like a common industrial spill. Special detection, handling, and decontamination protocols are required for their identification and removal.

In Louisiana, four cities received or are scheduled to receive DPP training: Shreveport, Baton Rouge, New Orleans, and Metairie. This author attended the DPP briefing held in Shreveport on February 10, 2000. Attendees included the Shreveport OEP; city and parish police commanders; fire and EMS personnel; hospital officials; and representatives from the FBI, FEMA, USPHS, and DOD. The briefing was given by an official of the SBCCOM and set the stage for the training to come (completed in June 2000). The briefing explained the six types of courses and the planned coordination among local, state, and federal agencies.

Officials of the two regions of Louisiana that received the training (E. Baton Rouge Parish with Baton Rouge and Shreveport/Bossier) commented that the training was generally excellent and informative. According to the local officials, the federal government has much equipment, under various grant programs, that is available for routine operational use by local officials. State officials have noted, however, that the grant programs require a lot of data collection.

Officials of municipalities that had received training and were contacted by the

author generally commented favorably on the quality of training. One official, however, noted that the training provided by contractors to the government was uncoordinated. The author did not attend those training sessions and cannot judge the quality, depth, breadth, or pertinence of the material presented or the comments made about its value. People who present the material are likely to be biased, and people receiving it are generally novices about NBC terrorism, so no independent assessment can be offered here.

Emergency Medical Care Systems. The local emergency medical care systems consist of hospitals and ambulance medics and paramedics. Local hospital personnel interviewed by the author were generally aware of the need for NBC preparedness and claimed to have some committees in place to address plans for emergency treatment of such casualties. Hospitals, however, may not have adequate facilities for treatment. A few hospitals have investigated the possibility of providing NBC decontamination on the premises, but the proposed locations for such decontamination visited by the author placed emergency room (ER) personnel and patients at extreme risk of contamination from NBC agents brought in by patients. Although HAZMAT policy dictates that decontamination measures be used at the incident site before casualties are evacuated via ambulance to a hospital, the principal problem for hospitals is “walk-in” patients. Such patients may have been contaminated but not processed by HAZMAT personnel at the incident site.

According to one official in Shreveport, Louisiana, during an exercise involving a biological agent, hospital officials quickly realized that they were not equipped to handle the magnitude of projected casualties—which numbered in the hundreds. The problem with hospital ERs is obvious to anyone who has visited one and seen the layout, staffing levels, and physical size. The hospital ER may be the Achilles' heel of the DPP's operational concept of relying on “first responders.” Regional hospitals are not

DOD's principle of minimizing the number of contacts and simplifying the process of training was implicitly violated by reaching out to more than 120 individual cities rather than the 50 states.

The SEMAs—capitalizing on the knowledge of relative vulnerabilities and the infrastructure in place—could better coordinate training.

equipped and staffed for such emergency matters. In addition, given the imperative of decontamination at the hospital, nearly all hospital layouts may make that process very difficult to perform at present, and it will be expensive to change the layout—if it can be done at all.

Plans for emergency operations during incidents of NBC terrorism must designate for the first responders—who are charged with responsibility for the medical evacuation of patients—one or two hospitals to receive patients. In fact, the designated hospitals should agree to be off-limits for other non-NBC emergencies—which should be redirected to other hospitals that are not staffed, equipped, or configured for an NBC response.

NBC agents exhibit toxicities a magnitude or two greater than those of the standard industrial chemicals of concern to emergency managers. Thus, hospital personnel must be focused only on NBC cases and procedures when the need arises. A moment's inattention or lapse in proper handling procedures can be fatal to many. The local swapping arrangement requires emergency managers to reach agreements with local hospitals about which ones will handle NBC cases and which ones will handle normal, nonterrorist emergency cases. That arrangement could be derived from any existing arrangements for HAZMAT response.

Volunteer Organizations. American Red Cross (ARC) chapters are local organizations and affiliates of the national organization. The Federal Response Plan recognizes the ARC's expertise in mass care.²⁴ As a partner in the Federal Response Plan and the DPP, a local ARC was contacted by the author and queried on its awareness of the need to respond and plans for responding to an incident of NBC terrorism. Lafayette, Louisiana, is not one of the 120 cities selected for DPP training. The local ARC there, however, was aware of the DPP. To prepare local ARC offices to respond in concert with local, state, and federal emergency agencies, the ARC national headquarters had sent memos to all

ARC chapters informing them of training and procedures. In some respects, the local ARC offices may be ahead of local government officials in this matter.

A Better Approach to DPP

The reason DOD selected specific cities for training is that the department preferred to deal with a single authority rather than several layers of local government. Fundamentally, that policy is reasonable and understandable. But DOD should have followed a "chain-of-command" approach: rather than give training directly to some 120 cities, DOD should have proceeded via the SEMAs and National Guard units.

There are several reasons why this approach would work better. The SEMAs contacted by the author all indicated that they have local OEP plans on file. The SEMAs know the state of readiness, capabilities, and vulnerabilities of each of the local regions. They also know what the local mutual assistance agreements are and between whom. Thus, the SEMAs—capitalizing on those agreements, the knowledge of relative vulnerabilities, and the infrastructure in place—could better coordinate training.

By interacting directly with each state through the governor's office or the SEMA, DOD (now DOJ) would be dealing with the single authority that is responsible for state preparedness. The single authority can in turn organize subordinate OEPs based on the priorities of the state and the perceived vulnerabilities of local areas.

State National Guard units have military personnel who have already had some NBC training; thus a "beefed-up" training program in decontamination would have been cost-effective and efficient. Guard units are dispersed throughout a state and are located in or near populated regions—from which they could interact with and teach local government agencies more directly than could DOD. Also, the Guard can act by state

order—avoiding the legal concerns that may haunt, hamper, and constrain direct involvement in local matters by some federal agencies (for example, DOD).

Giving NBC HAZMAT training to the state fire marshall's office—or state police, where applicable—takes advantage of an existing HAZMAT knowledge base and authority. Trained personnel can then teach subordinate agencies of the state.

Equipment specific to NBC emergency response could be dispersed to Guard units, the state OEP, or state police rather than local governments. If the state police are the chosen recipient, equipment can be located in state police regional control districts.

Also, medical training for NBC response could be directed through state public health departments and the state hospital systems. Because the state licenses private hospitals and emergency services businesses, it is in a better position to direct the priority and order of training in NBC medical services on the basis of an assessment of the risk that localities face.

The major problem in an NBC attack is consequence management. All NBC programs and training should be administered and headquartered within FEMA—drawing on DOD, DOJ, USPHS, or other federal agency assets as needed—as is currently done for natural or other technological disasters. FEMA and the SEMAs already have procedures and administrative machinery in place.²⁵ Establishing other “lead” agencies complicates and confuses command and control in an NBC attack that is really a HAZMAT matter—which FEMA and the SEMAs already are structured to deal with.

DOD's principle of minimizing the number of contacts and simplifying the process of training was implicitly violated by reaching out to more than 120 individual cities rather than the 50 states. By choosing that approach, DOD clearly violated a cardinal rule of chain of command and control. The training of key personnel in states would increase the rate at which states and local governments would become familiar with

NBC preparedness. As DOD (now DOJ) moved on to the next state on its list, the previous state would be passing the training on to subordinate groups. That method would have a greater “pyramid effect” than the current system. In addition, the mutual assistance agreements between local governments could more easily be drawn on by the SEMA's training process than the current DOD method, which essentially ignores such pacts. Furthermore, the states' administration of NBC preparedness training for subordinate governments could further enhance, bolster, and nurture those mutual assistance pacts by coordinated training of local government personnel. DOJ's assumption of the training does not automatically eliminate or reconfigure the old DOD plan.

What Government Is Not Doing

Judging from reports in the media, little disagreement exists among intelligence experts and knowledgeable scientists that the United States will experience an NBC terrorist attack sometime in the next 10 years or so. Open to discussion among such experts is the exact nature of such an attack, its severity or magnitude, and the sophistication of the weapon employed and its delivery system. Thus, among the numerous responsibilities of emergency management officials at all levels of government is to make plans for all terrorist attacks and to prepare the public for the response and recovery phases of the disaster. Informing and educating the public is a necessary component of emergency management. That fact is amply noted in several places in FEMA's own introductory course, *The Emergency Program Manager*.²⁶

According to FEMA's course material, one major overriding problem—viewed as critical to the success of emergency management—is the difficulty of gaining public support.

The only answer to this dilemma is to create an effective emergency manage-

Without a doubt, civilians are the most vulnerable to any type of attack. Yet the Nunn-Lugar-Domenici plan ignores public education completely.

The lack of any organized program to actively educate the public in matters of NBC awareness and preparedness is the Achilles heel of the entire national plan.

ment program that builds public support by incorporating citizens in actions at every opportunity. . . .

The third group you should inform about the completion of the plan is the general public. They will not be interested in most of the details of the plan. Their concerns are: "what should we do?"²⁷

Without a doubt, civilians are the most vulnerable to any type of attack. Yet the Nunn-Lugar-Domenici DPP ignores public education completely. There are several features that any government, which claims to be concerned about the population's defense against NBC attack, must address in any public education program: timely information, involvement, defensive measures, and education. The lack of any organized, program to actively educate the public in matters of NBC awareness and preparedness is the Achilles heel of the entire national plan.

Timely Information

Civilian defense consists of measures and knowledge in the hands of the individual citizens that enable them to personally defend or protect themselves and their families. (In contrast, civil defense consists of measures taken by government officials in defense of a population—for example, passing out protective masks.) For civilian defense to work and to avoid inordinate false alarms, the public must be informed of U.S. intelligence about suspected attempts to perpetuate an NBC attack. In other words, a public that is educated will be less likely to "cry wolf." Citizens need to know that when a threat arises, they will be given sufficient warning by their government to be on guard. Thus, there must be trust between the people and their government.

NBC is an unknown to people; it is the unknown that they fear most, and it is the unfamiliar happening in the streets that will induce panic. The importance of promptly alerting the people to danger cannot be overemphasized. When a prisoner escapes from prison, law enforcement alerts the pub-

lic immediately to allow citizens to take defensive measures for themselves, and notify police of untoward activities and suspicious persons sneaking around. An NBC threat also deserves immediate notice. The government should not withhold useful information.

Involvement

The American public, as individuals and organized groups, must participate in NBC preparedness. Taxpayers are shelling out billions of dollars for such programs, but not one penny is being spent on taxpayers' involvement or enlightenment.

To minimize the phenomenon of "crying wolf," citizens must receive some realistic instruction on recognizing the difference between real "suspected threats" and everyday oddball occurrences.

Defensive Measures

During the Gulf War in 1991—when Israeli and Saudi Arabian cities were attacked by Scud missiles—a major fear was that Saddam Hussein might be irrational enough to arm those missiles with chemical or biological weapons. Israelis were issued protective masks and small tentlike protective units for infants. More recently, during operation Desert Fox—the aerial bombing of Iraq—Israel reissued protective masks.

Equipment. The protective mask is the absolute minimum required for respiratory protection from NBC agents. The protective mask will not stop radiation exposure, but radioactive dust and particles in aerosol will be filtered out. Radioactive materials inhaled into the lungs are dangerous. During an NBC attack, without a protective mask a fatality—not a casualty—occurs.

Because filter elements in masks have a limited shelf life, issuance of masks and replacement filters will depend on intelligence that an attack in a specific locale is imminent. Issuing masks to people nationwide in advance, as Israel did, is probably not workable because the United States has 275 million people and Israel has only 6 million.

If masks are issued to a particular community on the basis of a credible threat, other nearby communities are going to be very unsettled. That problem must be addressed.

Even in the absence of specialized equipment, however, common clothing items can be useful. Rubber raincoats, rubber rain boots, and tough plastic sheeting—available in most hardware stores—are useful as short-term protection against chemical aerosols and condensates. But public ignorance of those useful measures is a major problem. The military trains soldiers to make use of such “field expedients,” but the government does not provide that valuable knowledge to civilians.

Materials. Although military decontamination agents are available to U.S. forces—and presumably to state and local agencies (under the DPP)—analogs are available to civilians. Unfortunately, the public is ignorant of those substances. Such household agents as bleach, lye (in the form of drain cleaners), industrial-strength detergents, and even HTH (a swimming pool bleach that is a version of an old military agent) are readily available and useful in educated hands. Training civilians to use those substitutes is simple.

Reactive measures to an NBC attack center on administering first aid and evacuating afflicted individuals for emergency treatment. In an emergency, such measures require using what is available. The education of government personnel is the very core of the DPP, but the people also need to be informed. The population has a right to know about an attack and the need to prepare for one.

Education

According to Col. David Franz, former commander of the U.S. Army Medical Research Institute of Infectious Diseases and deputy commander of the U.S. Army Medical Research and Materiel Command, in testimony at a joint hearing of the Senate Committees on the Judiciary and Intelligence, “Education is a critically important

and cost-effective part of the solution. Education of our doctors, our first responders, our media, our leaders and our citizens.”²⁸

Education must include sufficient “technical” material to give a citizen the ability to recognize a possible NBC attack. Soldiers are taught to recognize a potential NBC attack, and the same knowledge can be imparted to civilians. But the information must be easily disseminated to all who wish to avail themselves of it.

Some people may argue that educating the citizenry may be unworkable because average people may not be able to understand or absorb the material well enough to make it useful to them. But nothing is so complex or technical that informed citizens need to be “rocket scientists.” The average enlisted soldier is no better or no less educated than the civilian population from which he or she is recruited. The concepts and principles of NBC taught to the private first class soldier can be understood by Mr. and Mrs. John Q. Public. If a well-thought-out program of civilian education is formulated, the majority of the public will get the message and benefit from it.

The preparation of the public must be a key element of any emergency preparedness plan—including that for NBC threats. FEMA’s own Introductory Management course emphasizes that point by exhorting: “Remember, citizens should be given all the information they need to know in order to plan their response to disasters and to instill their confidence in the plan” and “don’t wait until a disaster strikes before you tell the people what to do. Your motto should be the same as the scouts. You want the people to BE PREPARED!”²⁹ Yet no single, thorough, nontechnical official source of information on NBC preparedness or response is available to the public.

A wide range of informative pamphlets, brochures, and checklists is available from FEMA or through local OEP offices. That information generally deals with storm, flood, and earthquake emergencies, but the simple presentations of useful information

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If the government keeps the planning for an NBC incident under wraps, it will have two foes to combat during an attack: the NBC agent and rampant civil panic.

serve as good models for an NBC counterpart. A few good examples of what government can do to help educate the public about defensive measures to take on their own behalf is demonstrated by pamphlets on defensive measures for a nuclear attack³⁰ and disaster planning for business and industry.³¹ In addition, FEMA issued a pamphlet on emergency food and water supplies that would be applicable to an NBC environment—when the treatment of water for potability might be needed.

FEMA does offer a self-study course titled Emergency Response to Terrorism through the Emergency Management Institute. The material for the course provides excellent basic information about the various hazards, but the course is very weak on identifying protective measures. To remedy that deficiency, current military manuals can be adapted for civilian instruction. Formal, classroom instruction in the evening could be implemented via the numerous OEP offices dotting the United States. Companies and corporations may be amenable to in-house education of their personnel.

Many companies have risk management plans for disasters that could be supplemented with NBC preparedness programs. FEMA offers a guide for developing such plans.³² Schools (an easy target) could also educate their staff and faculties about NBC preparedness. A dedicated Web site that exhibited the concepts of NBC preparedness and warning signs of an NBC attack might be useful. The Web site could be organized in layers (commonly called windows) or levels of depth. The introductory material would be devoid of technical details and written in plain English. As an individual digests a level, he or she simply clicks to the next level for more specific and in-depth information. Individuals could pursue the material at their own pace and to their own personal level of comprehension and utility. On its Web site, FEMA has a short fact sheet on terrorism that could serve as a good beginning for what could be formulated for an NBC site.³³ A list of 800 numbers and e-mail

addresses would serve the interactive need of users to get answers to questions.

Conclusion

The attack on the Tokyo subway with Sarin nerve agent is a good example of the consequence of public ignorance of NBC attacks. By the time the people realized something was wrong, it was too late. Perhaps the human costs could have been reduced if some of the people had been versed in the signs, symptoms, effects, and employment of nerve agents. Casualties could have been mitigated had at least one knowledgeable person been watching the reactions of people closest to the point of dissemination and encouraged people to leave immediately or to get help. The attack on the subway did not kill or injure more people because military-strength Sarin was not used. In the future, a few better-informed citizens might have the chance to mitigate many more potential casualties.

Training in the military does not guarantee the absence of casualties, but it aims at reducing them. Similarly, educating the public about NBC threats and response offers no guarantees of successful protection. But the consequences of no public education are guaranteed widespread misery and death.

Absent its mandatory nature (which is not appropriate for the civilian population in a nation that values its civil liberties), military training offers a useful model for NBC preparedness education. At the lowest unit level—the company and battery—NBC officers and noncommissioned officers (NCOs) (counterparts to civilian first responders) attend formal training at the NBC school. They are then expected to go back and train the troops in their units on NBC preparedness, which they learned from Chemical Corps personnel. The troops are also given NBC preparedness training directly. If no training was given to the troops beyond that given to the NBC officers and NCOs, then what good would that knowledge do the unit during an NBC attack? Only the unit NBC

officers and NCOs would know anything about NBC preparedness. During the stress caused by an NBC incident, on-the-spot training is impractical. Similarly, training municipal civil defense personnel—but not the public—in NBC preparedness may do the community no good when panic ensues during a catastrophic terrorist act.

The first persons to become aware of an NBC attack will be the intended targets and victims—not government officials. The first five minutes to hour of a WMD attack may prove lethal to official first responders and the public. Bioweapons will be the toughest to detect and identify in a timely manner. Thus, the government's interest lies in educating the public and encouraging citizen involvement. If the government keeps the planning for an NBC incident under wraps (as it largely does now), it will have two foes to combat during an attack: the NBC agent and rampant civil panic. Education may be more useful for chemical warfare agents than for biological weapons agents—because BW agents cause delayed symptoms. But education may still help someone recognize that the outbreak is not just a severe flu bug.

The most important question is, How many people will take advantage of the opportunity to learn about NBC defense? Some may not be able to attend organized classes but may be able to access a Web site. Once a U.S. community has experienced an NBC attack—as is the case with natural disasters such as hurricanes—more people will seek information about what to be on guard against and what to do about it.³⁴

When defending the public from NBC attacks, the foremost concern should be to minimize—if not prevent—widespread panic and chaos. If the public has not been educated about the threat of NBC attacks and remedial actions required in their aftermath, the panic and chaos that ensue will complicate and frustrate efforts of first responders. Any government official who thinks he can adequately inform the public during a WMD incident will be preaching to the morgue.

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13. Information on domestic preparedness is available at the following phone numbers: general, (202)-324-8186; training, (202)-324-0265; exercises, (202)-324-0299; equipment, (202)-324-0220; and planning, (202)-324-0276. A compendium of federal courses is available from Patsy Garcia, (410) 436-7932. A more detailed listing of phone numbers and addresses appears at www.ndms.dhhs.gov/CT_Programs/Training/training.html.
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21. The findings of this narrow investigation attach no derogatory implication to any officials or organizations. The author has no desire to identify specific officials contacted. The cooperation of those officials was direct and forthcoming, a credit to their civic mindedness, professionalism, and honesty. The author acknowledges and thanks them all for their openness.
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