



**STRATEGY  
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**WEAPONS OF MASS DESTRUCTION,  
CONSEQUENCE MANAGEMENT AND THE ROLE OF THE  
VETERANS HEALTH ADMINISTRATION**

**BY**

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## ABSTRACT

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This Strategic Research Project provides an overview of potential threats involving weapons of mass destruction, reviews background information related to disaster response, discusses the role of the Veterans Health Administration in preparing for and responding to incidents involving weapons of mass destruction, and identifies strategies and actions to improve interagency processes relevant to the VHA in this area.



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## **WEAPONS OF MASS DESTRUCTION, CONSEQUENCE MANAGEMENT AND THE ROLE OF THE VETERANS HEALTH ADMINISTRATION**

Our nation has been put on notice: We are not immune to attack. We will take defensive measures against terrorism to protect Americans. Today, dozens of federal departments and agencies, as well as state and local governments, have responsibilities affecting homeland security. These efforts must be coordinated at the highest level.

—George W. Bush

A domestic incident involving weapons of mass destruction (WMD) will have a devastating effect on the people of the United States. Response to a WMD event will require the assets of local, state, and national governments. The Department of Veterans Affairs (DVA), through its extensive network of healthcare facilities, has the infrastructure to address a portion of the medical response to such an event. The DVA system also can play a significant role in preparing the nation to preclude or in the worst case to better withstand the effects of a WMD attack. Specifying how the Veterans Health Administration (VHA) can assist in responding to incidents involving the use of these weapons is particularly timely given the massive level of federal activity underway to deal with large-scale disasters. This paper will discuss the mission of the VHA, how the nation responds to catastrophic events involving WMD, an overview of potential threats, the VHA role in this response, and will offer suggestions to improve coordination between agencies involved in consequence management.

### **VETERANS HEALTH ADMINISTRATION MISSION**

To care for him who has borne the battle, and for his widow and his orphan.

—Abraham Lincoln

The Veterans Health Administration in the Department of Veterans Affairs administers federal health care programs for veterans. The purpose of the Veterans Healthcare System is to serve the needs of America's veterans by providing primary care, specialized care, and related medical and social support services.<sup>1</sup> VHA is a comprehensive, integrated healthcare

system that provides mandated programs for eligible veterans. The mission of the VHA includes four components: medical care, education, research, and contingency support.

## MEDICAL CARE

Medical care programs encompass the largest part of the VHA mission and include a broad spectrum of medical, surgical, and rehabilitative care to eligible veterans. Health programs to improve quality of life are available in areas such as blind rehabilitation, AIDS/HIV treatment, cancer treatment, cardiac surgery, diabetes management, kidney disease, hearing loss, spinal cord injury, and many others. Special programs address issues of particular interest to veterans and include Agent Orange health effects, Gulf War environmental exposure, post traumatic stress disorders, and health care for elderly veterans.<sup>2</sup>

## EDUCATION

The primary and overriding rationale for health care education and training activities in VHA is improved care of the veteran patient. VHA is directed by statute to "... assist in providing an adequate supply of health personnel to the Nation...."<sup>3</sup> This is accomplished in large measure by VA participation in the patient care component of clinical training programs of educational institutions affiliated with VA. The benefits for VHA and its patients are derived from participation in health care education and training through the accomplishment of –

- Enhanced ability to attract and retain health care personnel qualified to provide the highest quality of health care and services.
- Maintenance and continued development of professional competence and skills, and the increased challenge and professional satisfaction afforded by the teacher-student relationship.
- Appropriate recognition by the medical and academic communities and the public of the role of VHA in the patient care, health care education and training, and research efforts of the Nation.
- Utilization of VHA professional resources and clinical facilities to assist in providing an adequate supply of health care personnel to the Nation.<sup>4</sup>

## RESEARCH

Research and development (R&D) programs are an integral part of the VHA mission. The VA recognizes the important role of research in the basic biomedical and clinical sciences

propelling the advancement of health care. VHA cites three reasons for the usefulness of R&D programs. The first of these is the production of new knowledge, techniques, or products leading to improved prevention, diagnosis, treatment, and control of disease, as well as correction of, or compensation for, defects. These R&D products benefit veteran-patients and humanity in general. The second is the need to attract and retain a high caliber of professional staff that enriches the care provided to the VA's patients. The third reason is to furnish a stimulating intellectual environment necessary for the educational programs in VHA healthcare facilities.<sup>5</sup> These objectives can be attained only through quality research and development programs. The program, therefore, constantly strives to achieve excellence. The results of development and of directly applied research, including clinical studies, can have an immediate effect on patient care. Such applications, however, depend upon basic scientific research. Scientists performing basic studies also advise and assist other staff members in pursuing their research.

#### CONTINGENCY SUPPORT

The contingency support mission of the VHA refers to support for the Department of Defense contingencies but also encompasses programs to ensure that VA facilities are operational during natural and man-made disasters. It includes activities such as providing technical guidance, management, and coordination necessary to ensure health care for eligible veterans, military personnel, and the public when needed.<sup>6</sup> In case of a major disaster, VHA provides backup medical resources to the military health system and local communities.<sup>7</sup> VHA assists other federal agencies that have lead responsibility for responding to disasters, including terrorism.

VHA has extensive resources that can be utilized in federal homeland security efforts and responses to incidents involving nuclear, biological, chemical, and high explosive weapons. These assets include the facilities it operates and the personnel resources of its national health care system, graduate medical education programs, and expertise involving emergency backup and support activities. Its' areas of responsibility also include disaster simulation exercises and maintaining medical stockpiles. VHA's efforts in these areas enhance national emergency preparedness by improving medical response procedures, providing bed capacity, and ensuring the availability of pharmaceutical stockpiles enabling rapid response to local authorities.<sup>8</sup>

## FEDERAL DISASTER RESPONSE LEGISLATION AND DIRECTIVES

Comprehensive all-hazard emergency planning by federal departments, agencies, and the military, as well as a strong and responsive industrial and technology base, contribute to crucial national security emergency preparedness response. Prior to 1950, federal response to natural or manmade calamities was largely on a case by case basis. The passage of the Disaster Relief Act of 1950 marked the beginning of formal federal interventions in disaster management. Subsequent legislation in 1970 and 1974 expanded the federal role in this area. Today the overarching federal authority for the provision of disaster relief is the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988.<sup>9</sup>

Through the Stafford Act, Congress acknowledged the human suffering, loss of income, property loss and damage, and the disruption of normal functioning of governments and communities. As amended, 42 U.S.C. 5121, contains the following statement:

“It is the intent of Congress ... to provide an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from such disasters by –

- Revising and broadening the scope of existing disaster relief programs.
- Encouraging the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the States and by local governments.
- Achieving greater coordination and responsiveness of disaster preparedness and relief programs.
- Encouraging individuals, States, and local governments to protect themselves by obtaining insurance coverage to supplement or replace government assistance.
- Encouraging hazard mitigation measures to reduce losses from disasters, including development of land use and construction regulations.
- Providing Federal assistance programs for both public and private losses sustained in disasters.”

It is the policy of the Federal Government to provide an orderly and continuing means of supplemental assistance to state and local governments as they execute their responsibilities to alleviate the suffering and damage resulting from catastrophic or major disasters or emergencies.<sup>10</sup> The Stafford Act provides the President the authority to use federal resources for specific state and local efforts. This authority is activated upon declaration of a catastrophic disaster, major disaster, or an emergency. Upon declaring an emergency, the President may

direct any agency of the Federal Government to undertake missions and tasks to provide assistance to State and local agencies. This assistance supplements the efforts and resources of state and local governments and voluntary organizations, and fills the needs that are unfulfilled by federal disaster assistance programs not requiring a presidential declaration.<sup>11</sup>

The federal response is coordinated through a generic disaster contingency plan known as the Federal Response Plan (FRP). The FRP is an inter-departmental effort developed in 1992 under the leadership of the Federal Emergency Management Agency (FEMA). The FRP establishes a process and structure for the systematic, coordinated, and effective delivery of federal assistance to address the consequences of any disaster or emergency declared under the Stafford Act, as amended (42 U.S.C. 5121, et. seq.).

The plan is used to respond to incidents or situations requiring federal emergency disaster assistance and to facilitate the delivery of that assistance. The plan groups the types of assistance needed during a disaster or civil emergency into 12 functional areas called Emergency Support Functions (ESFs). These include: Transportation, Communications, Public Works and Engineering, Firefighting, Information and Planning, Mass Care, Resource Support, Health and Medical Services, Urban Search and Rescue, Hazardous Materials, Food, and Energy. The responsibility for each ESF is assigned to a primary agency as shown in Table 1.<sup>12</sup> Several support agencies may also be assigned to each ESF. The Department of Veterans Affairs, for instance, is assigned as a support agency for the health and medical services function.<sup>13</sup>

<b>Emergency Support Function</b>	<b>Primary Federal Agency</b>
Transportation	Department of Transportation
Communications	National Communication System
Public Works and Engineering.	Department of Defense
Firefighting	Department of Agriculture
Information and Planning	Federal Emergency Management
Mass Care	American Red Cross
Resource Support	General Services Administration
Health and Medical Services	Health and Human Services
Urban Search and Rescue	Federal Emergency Management
Hazardous Materials	Environment Protection Agency
Food	Department of Agriculture
Energy	Department of Energy

**Table 1: Emergency Support Functions and Lead Federal Agency**

The FRP is an overarching consequence management strategy that guides federal government support to state and local governments.<sup>14</sup> It outlines federal responsibilities and provides the framework for coordinating civil-military requirements between and among the other emergency support functions. The plan, under full or partial activation, describes the federal government's role in providing immediate action to save lives and mitigate great property damage. Twenty-six federal departments and agencies along with the American Red Cross provide support under the full implementation of this plan.

Following the April 1995 bombing of the federal building in Oklahoma City, the President issued Presidential Decision Directive 39 (PDD 39), which enumerated responsibilities for federal agencies in combating terrorism, including domestic incidents.<sup>15</sup> Congressional action resulted in the Defense against Weapons of Mass Destruction Act of 1996. It is commonly known now as the Nunn-Lugar-Domenici Act, named for the three United States Senators who sponsored it. The Nunn-Lugar-Domenici Act charges federal departments and agencies with utilizing systems that will protect the citizens of this country against terrorists. The Act provides resources to improve the ability of major metropolitan areas to respond to a terrorist incident involving weapons of mass destruction by allowing access to the technical expertise and resources resident in the Department of Defense and other Federal Departments and agencies.

In 1997, FEMA issued a Terrorism Incident Annex to the Federal Response Plan to implement PDD 39. The annex was revised in April 1999. The Terrorist Incident Annex describes terrorism-related considerations that supplement the FRP. It describes linkages between consequence management and crisis management before, during, and after an event. It also describes responsibilities of other agencies including DOD, Department of Energy (DOE), Department of Health and Human Services (DHHS), and the Environmental Protection Agency (EPA).<sup>16</sup> Other federal authorities and contingency plans, such as the National Oil and Hazardous Substances Pollution Contingency Plan and the Federal Radiological Emergency Response Plan, may be activated in lieu of, prior to, or in conjunction with the Federal Response Plan. In May 1998, the President issued Presidential Decision Directive 62 (PDD 62), The Protection Against Unconventional Threats to the Homeland and Americans Overseas, that further articulated responsibilities for specific agencies.<sup>17</sup> These directives call for robust, tailored, and rapidly deployable interagency teams to conduct well-coordinated and highly integrated operations.<sup>18</sup>

In an actual or potential terrorist incident, FEMA uses the structures and resources of the Federal Response Plan (FRP) to manage the Federal consequence management response.

Most importantly, it provides a known and flexible framework under which local, state and federal officials can coordinate their response to a disaster or emergency and make the most effective use of available resources. FEMA along with the Federal Bureau of Investigation (FBI) and other key Federal agencies have worked closely to develop the United States Government Interagency Domestic Terrorism Concept of Operations Plan (CONPLAN).<sup>19</sup> The CONPLAN describes the actions that Federal agencies will take, on order, to establish the appropriate readiness posture for the level of threat and the WMD scenario, as well as the joint operations in the field involving both crisis and consequence management response activities.

Because of the terrorist attacks against the World Trade Center and the Pentagon on September 11 and the subsequent appearance of letters containing anthrax, terrorism has ascended to the top of the national agenda. The Attorney General has indicated that the country needs to be prepared for additional terrorist incidents.

## **RESPONDING TO A NATIONAL EMERGENCY**

The Federal Emergency Management Agency was established in 1979 to provide a single point of accountability for all federal emergency preparedness, mitigation, and response activities. Under the direction of the president, the mission of FEMA is to plan for and coordinate the protection of the civilian population and resources of the nation.<sup>20</sup> Among FEMA programs are disaster relief, earthquake and hurricane preparedness, flood insurance, fire administration, radiological emergency preparedness and civil defense. FEMA manages the program at the national level by providing funding to state and local governments for personnel and emergency needs such as warning systems, communications equipment, and emergency operations centers. When an emergency is declared, two types of interventions are addressed: consequence management and crisis management. Consequence management refers to measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism. Crisis management refers to measures to identify, acquire, and plan for the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism.<sup>21</sup> FEMA coordinates consequence management activities under the authority of the Stafford Act. In situations involving domestic terrorism, PDD 39 assigns the Federal Bureau of Investigation (FBI) lead responsibility for crisis management.<sup>22</sup> The FBI will resolve any hostile situations, investigate, and prepare a criminal case for prosecution under federal law. The relationship between consequence and crisis management is shown in Figure 1.



**Figure 1: Relationship Between Consequence and Crisis Management<sup>23</sup>**

The federal consequence management response process begins when the President declares an incident a disaster. The President will designate a federal official to coordinate the federal response. Federal agencies provide support through their emergency response teams or other assets as shown in Table 2.

<p><b>Department of Defense</b></p> <ul style="list-style-type: none"> <li>• Joint Task Force for Civil Support</li> <li>• Chemical/Biological Rapid Response Team</li> <li>• US Army Technical Escort Unit</li> <li>• US Army Special Medical Augmentation Team – NBC</li> <li>• US Army Special Medical Augmentation Team – Aero-Medical Isolation</li> <li>• US Marine Corps Chemical-Biological Incident Response Team</li> <li>• US Army Radiological Advisory Medical Team</li> </ul> <p><b>Environmental Protection Agency</b></p> <ul style="list-style-type: none"> <li>• On-Scene Coordinators</li> <li>• Environmental Response Team</li> <li>• Radiological Emergency Response Team</li> </ul>	<p><b>Department of Health and Human Services</b></p> <ul style="list-style-type: none"> <li>• Management Support Teams</li> <li>• National Medical Response Teams</li> <li>• Disaster Medical Assistance Teams</li> <li>• Disaster Mortuary Operational Response Teams</li> <li>• National Pharmaceutical Stockpile</li> </ul> <p><b>Department of Transportation</b></p> <ul style="list-style-type: none"> <li>• US Coast Guard National Strike Teams</li> <li>• US Coast Guard On-Scene Coordinators</li> </ul> <p><b>Nuclear Regulatory Commission</b></p> <ul style="list-style-type: none"> <li>• Regional Incident Response Teams</li> </ul>	<p><b>Department of Energy</b></p> <ul style="list-style-type: none"> <li>• Radiological Assistance Program Teams</li> <li>• Federal Radiological Monitoring and Assessment Center</li> <li>• Aerial Measuring System</li> <li>• Radiation Emergency Assistance Center/Training Site</li> </ul> <p><b>Department of Veterans Affairs</b></p> <ul style="list-style-type: none"> <li>• Medical Emergency Radiological Response Team</li> <li>• Disaster Emergency Medical Personnel System</li> <li>• Emergency Medical Response Team</li> </ul> <p><b>Federal Emergency Management Agency</b></p> <ul style="list-style-type: none"> <li>• Emergency Response Team</li> </ul>
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**Table 2: Federal Chemical, Biological, Radiological, and Nuclear Consequence Management Response Teams<sup>24</sup>**

FEMA oversees the emergency response teams deployed to the incident site. A disaster field office is set up and begins operations coordinating response activities with state and local authorities. In the case of destructive events, the president may issue major disaster or emergency declarations that allow direct intervention by FEMA and other federal agencies for evacuation, shelter, emergency services, and recovery activities.<sup>25</sup>

All 50 states receive federal assistance in the form of training or equipment grants to help prepare for a terrorist incident.<sup>26</sup> A number of reviews however, have identified concerns regarding the level of preparedness of state and local governments in responding to terrorist acts.<sup>27-30</sup> Inadequate state and local planning activities, lack of hospital participation in training on terrorism and emergency response planning, availability of medical personnel and resources, and inadequate public health infrastructure are the most frequently cited shortcomings. Federal reviews have called for increased funding to address these issues.<sup>31</sup> The Gilmore Commission concluded that training and planning for biological or chemical incidents is a problem in many health care facilities.<sup>32</sup> The Institute of Medicine (IOM) recently examined the medical capabilities of civilian hospitals.<sup>33</sup> The IOM provided eight recommendations to improve preparedness.

- Develop a system to advise medical facilities of "actual, suspected, and potential terrorist activity"
- Continue testing of personal protective equipment against chemical attacks
- Develop faster, simpler, cheaper, and more accurate detection technologies
- Improve local, state, and federal surveillance and epidemiology infrastructure
- Conduct operations research on decontamination and triage of large numbers of people
- Maintain stockpiles of antidotes, improve distribution methods and develop new vaccines and therapies
- Promote educational materials on chemical and biological agents for the public and mental health professionals
- Develop new computer software applications to augment event reconstruction, assessment, prediction, and decision making.

## **AN OVERVIEW OF BIOLOGICAL, CHEMICAL, NUCLEAR, AND HIGH EXPLOSIVE THREATS - WHAT ARE WE FACING?**

Biological agents, chemical agents, nuclear material, and high explosives pose different sets of problems for emergency planning and preparedness. For example, the release of a

biological agent may not be known for several days, and both terrorists and victims may be many miles from the point of release when the incident is identified. Some biological agents produce symptoms that mimic influenza or other less virulent illnesses further complicating the recognition of a terrorist attack. If communicable, the biological agent can spread throughout the population. Conversely, most chemicals manifest a rapid onset of symptoms to individuals exposed to the agent. Nuclear contamination and the risk of radiation sickness pose unique problems while high explosives are the most prevalent weapons used by perpetrators of these crimes. Mass casualty incidents, by definition, overwhelm the resources of individual healthcare facilities and may overwhelm the resources of a community's entire healthcare system.<sup>34</sup>

Preparedness planning for biological, chemical, nuclear, and high explosive incidents needs to be carefully considered. While it is not possible to prepare specifically for all threats, the ability of first responders and emergency department personnel to recognize the type and scope of an incident will determine the success of mitigation efforts.

## BIOLOGICAL INCIDENTS

Biological agents produce a longer period of illness than chemical agents and therefore impose an enormous impact on healthcare infrastructure.<sup>35</sup> The recognition of and preparation for a biological attack are similar to that of any disease outbreak, but the surveillance, response, and other demands on resources would likely be of an unparalleled intensity.<sup>36</sup> In a biological incident, the possibility of numerous acute casualties is high. A number of biological agents can be adapted and used as terrorist weapons including anthrax, tularemia, cholera, encephalitis, plague, and botulism.<sup>37</sup> Biological agents pose very serious threats given that they are available, rapidly dispersable, and lethal. Portals of entry into the body include the respiratory tract, gastrointestinal tract, and skin/mucus membranes. Decontamination of patients contaminated with biological agents requires personal protective equipment for staff members, contained areas to carry out the decontamination, and a means to dispose of contaminated wastes.<sup>38</sup> There are four common types of biological agents: bacteria, rickettsia, viruses, and toxins.

Bacteria are single-celled organisms that multiply by cell division and can cause disease in humans, plants, or animals. Although true cells, rickettsia are smaller than bacteria and live inside individual host cells. Examples of bacteria include anthrax (*Bacillus anthracis*), cholera (*Vibrio cholerae*), plague (*Yersinia pestis*), tularemia (*Francisella tularensis*); an example of rickettsia is Q fever (*Coxiella burnetii*).<sup>39</sup>

Viruses are the simplest type of microorganisms. They lack a system for their own metabolism and therefore depend upon living cells to multiply. This means that a virus will not live long outside of a host.<sup>40</sup> Types of viruses that could serve as biological agents include smallpox, Venezuelan equine encephalitis (VEE), and the viral hemorrhagic fevers such as the Ebola and Marburg viruses, and Lassa fever.<sup>41</sup>

Toxins are toxic substances of natural origin produced by an animal, plant, or microbe. They differ from chemical agents in that they are not manmade and typically they are much more complex materials. Toxins, in several cases, are easily extracted for use as a terrorist weapon, and, by weight, usually are more toxic than many chemical agents. The three common toxins thought of as potential biological agents are botulism (botulinum), SEB (staphylococcal enterotoxin B), and mycotoxins.<sup>42</sup>

## CHEMICAL INCIDENTS

There are a variety of chemical agents available for potential use by terrorists. These could be dispersed as a gas, vapor, or liquid and by an explosive or mechanical means.<sup>43</sup> They may be colorless, odorless, and tasteless. They can cause death rapidly if the victim inhales them or if they are splashed on bare skin.<sup>44</sup> The main classes of chemical agents used are<sup>45</sup> --

- Nerve agents, which disrupt nerve impulse transmissions.
- Blister agents, also called vesicants, which cause severe burns to eyes, skin, and tissues of the respiratory tract.
- Blood agents, which interfere with the ability of blood to transport oxygen.

Nerve agents are similar in nature to organophosphate pesticides, however they typically have a higher degree of toxicity. Nerve agents resemble water or light oil in pure form and possess no odor. All are toxic at small concentrations. The agents include sarin (GB), Soman (GD), tabun (GA), and V agent (VX). These materials are liquids that typically are sprayed as an aerosol for dissemination. The victims' symptoms will be an early outward warning sign of the use of nerve agents. Affected individuals will salivate, lacrimate, urinate, and defecate without much control.<sup>46</sup> Other symptoms may include pinpointed pupils, dimmed and blurred vision, pain aggravated by sunlight; excessive sweating and fine muscle tremors; involuntary muscular twitching and contractions; runny nose and nasal congestion, chest pressure and congestion, coughing and difficulty in breathing; excessive salivation, abdominal pain, nausea and vomiting, involuntary defecation and urination; and giddiness, anxiety, difficulty in thinking and sleeping

(nightmares). Nerve agents kill insect life, birds, and other animals as well as humans. Numerous dead animals at the scene of an incident may be a detection clue.<sup>47</sup>

Blister agents or vesicants are also referred to as mustard agents due to their characteristic smell.<sup>48</sup> Blister agents are heavy, oily liquids, dispersed by aerosol or vaporization. They readily penetrate layers of clothing and are quickly absorbed into the skin. Mustard (H, HD) and lewisite (L) are common blister agents. They are very toxic, although less so than nerve agents. A few drops on the skin can cause severe injury, and as little as three grams absorbed through the skin can be fatal. Clinical symptoms may not appear for hours or days. In a pure state, they are nearly colorless and odorless, but slight impurities give them a dark color and an odor suggesting mustard, garlic, or onions. Outward signs of blister agents include complaints of eye and respiratory irritation along with reports of a garlic-like odor. Similar symptoms will occur among many individuals exposed.<sup>49</sup>

Blood agents interfere with the ability of the blood to transport oxygen, and result in asphyxiation. Common blood agents include hydrogen cyanide (AC) and cyanogen chloride (CK). Cyanide and cyanide compounds are common industrial chemicals with which emergency responders sometimes deal.<sup>50</sup> CK can cause tearing of the eyes and irritate the lungs. All blood agents are toxic at high concentrations and lead to rapid death. Affected persons require removal to fresh air and respiratory therapy. Clinical symptoms of patients affected by blood agents include respiratory distress, vomiting and diarrhea, and vertigo and headaches.<sup>51</sup> Under pressure, blood agents are liquids. In pure form, they are gasses. Precursor chemicals are typically cyanide salts and acids. All have the aroma of bitter almonds or peach blossoms. They are common industrial chemicals and are readily available.<sup>52</sup>

## NUCLEAR INCIDENTS

There are two distinct threats in the area of nuclear terrorism. One is the use, threatened use, or threatened detonation, of a nuclear bomb. A nuclear detonation, in many cases, will produce blast and thermal injuries that will far outnumber radiation injuries.<sup>53</sup> While it is unlikely that any terrorist organization could build a nuclear device, it is plausible that terrorists could obtain such a weapon from a nation sympathetic to their cause.

The other threat is the detonation, or threatened detonation, of a conventional explosive incorporating nuclear material (radiological dispersal devices or RDD). The purpose of an attack where nuclear materials are incorporated into a conventional explosive (RDD) would be to spread radioactive materials around the bombsite. This would disrupt normal, day-to-day

activities, and would raise the level of concern regarding long-term health issues. It would prove to be difficult to perform complete environmental decontamination. Another possible scenario involving nuclear materials would be the detonation of a large device, such as a truck bomb near a nuclear power plant or a radiological cargo in transport. Such an attack could have widespread effects.<sup>54</sup>

There are three main types of nuclear radiation emitted from radioactive materials: alpha, beta, and gamma radiation.<sup>55</sup> Alpha particles are the heaviest and most highly charged of the nuclear particles. However, alpha particles cannot travel more than a few inches in air and are completely stopped by an ordinary sheet of paper. The outermost layer of dead skin that covers the body can stop even the most energetic alpha particle. However, if ingested through eating, drinking, or breathing contaminated materials, they can become an internal hazard. Beta particles are smaller and travel much faster than alpha particles. Typical beta particles can travel several millimeters through tissue, but they generally do not penetrate far enough to reach the vital inner organs. Exposure to beta particles from outside the body is normally thought of as a slight hazard. However, if the skin is exposed to large amounts of beta radiation for long periods of time, skin burns may result. If removed from the skin shortly after exposure, beta-emitting materials will not cause serious burns. Like alpha particles, beta particles are considered an internal hazard if taken into the body by eating, drinking, or breathing contaminated materials. Beta-emitting contamination also can enter the body through unprotected open wounds. Gamma rays are a type of electromagnetic radiation transmitted through space in the form of waves. Gamma rays are pure energy and therefore are the most penetrating type of radiation. They can travel great distances and can penetrate most materials. This creates a problem for humans, because gamma rays can attack all tissues and organs. Gamma radiation has very distinctive, short-term symptoms. Acute radiation sickness occurs when an individual is exposed to a large amount of radiation within a short period of time. Symptoms of acute radiation sickness include skin irritation, nausea, vomiting, high fever, hair loss, and dermal burns.<sup>56</sup>

## EXPLOSIVE INCIDENTS

An explosive incident is any event in which an explosives device is used as a terrorist weapon. An explosive is defined as a substance fitting into one of two categories: any substance or article, including a device, designed to function by explosion or any substance or article, including a device, which, by chemical reaction within itself, can function in a similar

manner even if not designed to function by explosion. It is estimated that 70 percent of all terrorist attacks worldwide involve explosives. The Federal Bureau of Investigation has noted three facts regarding bombing incidents. First, despite knowledge of an explosive device, they have only a 20% chance of finding it. Second, hundreds of "hoax" bomb incidents are reported each year. Finally, residential properties are the most common targets for bombers. It is apparent that bombs are the current weapon of choice amongst terrorist groups.<sup>57</sup>

In dealing with consequence management incidents, emergency departments face challenges that seriously imperil not only the public but also the very persons whose job it is to protect and help the public. The risks faced in today's world pose threats for which the average emergency responder may not be prepared. It is critical that emergency responders understand the implications of these modern threats and know proper response procedures and the limits of safe and prudent response. This knowledge will help prevent further casualties.

#### **THE VETERANS HEALTH ADMINISTRATION ROLE IN CONSEQUENCE MANAGEMENT**

The VHA is frequently called on to assist in domestic disaster relief operations. Support typically includes health care personnel, medical supplies, pharmaceuticals, and use of facilities and equipment. As the federal agency responsible for managing the delivery of veterans' health care programs, VHA operates over 1,100 care delivery sites including 172 hospitals, 800 ambulatory care clinics, 132 nursing homes, and 40 residential care programs. These facilities are located in all 50 states as well as the District of Columbia, the Virgin Islands, Puerto Rico, Guam, and the Philippines. Throughout its system of health care facilities, the VHA operates more than 42,000 beds. The VHA also has contractual agreements with numerous hospitals and medical groups to provide emergency and specialty care.<sup>58</sup>

The VHA has an annual operating budget of over \$20 billion. It employs approximately 180,000 staff including 12,000 physicians, 52,000 nursing personnel, 3,200 pharmacist, and 40,000 other allied health professionals. Additionally, over 85,000 health care professionals receive clinical training at VA facilities each year.<sup>59</sup>

One of VHA's statutory missions is to provide support to the Department of Defense and the Public Health Service during national emergencies. The Emergency Management Strategic Health Care Group (EMSHG) was established to coordinate VHA's emergency management mission. The EMSHG plans, coordinates, administers, and executes six emergency management functions: VA contingencies, DOD contingencies, National Disaster Medical

System, Federal Response Plan, natural and technological hazards, and continuity of government.<sup>60</sup>

#### VA CONTINGENCIES

Foremost among VA missions is to care for veterans. VHA emergency management personnel train staff to deal with consequence management issues to ensure that VHA facilities are not vulnerable to attack. They also ensure that staff are competently trained to respond appropriately. The intent is to minimize the disruption of veterans care by developing, managing, and reviewing plans for disasters and evacuations and coordinating mutual aid agreements for patient transfers among VA health care facilities. Training is provided to clinical as well as non-clinical personnel to enable them to handle emergent situations. These plans are carried out prior to or during emergencies as needed.<sup>61</sup>

#### DOD CONTINGENCIES

The VHA is committed to provide backup medical resources to the Department of Defense (DoD) following an outbreak of war or other emergency involving military personnel. Sixty-six VA Medical Centers have been designated as primary receiving centers for treating DOD casualties. Another 65 facilities have been designated as secondary support centers with an additional 58 facilities designated as installation support centers. These centers are responsible for providing support for the primary centers. Up to 5,500 staffed operating beds will be available for DoD patients within 72 hours of notification.<sup>62</sup>

#### NATIONAL DISASTER MEDICAL SYSTEM

The VHA helps to coordinate hospital capacity with nonfederal hospitals participating in the National Disaster Medical System (NDMS). NDMS is a joint effort between the federal and private sectors to provide backup to civilian health care facilities in case of disasters producing mass casualties. The program is a partnership between four federal agencies: Department of Health and Human Services (DHHS), VA, DOD, and FEMA. The NDMS is responsible for bringing in medical response personnel, evacuating the patients and transporting the victims to health care facilities outside the disaster area.<sup>63</sup> The NDMS has more than 7,000 private sector medical and support personnel organized into 80 disaster assistance teams. The teams are deployed to disaster sites to provide for the immediate medical needs of the sick and injured. They may also provide mortuary and veterinary care as needed.<sup>64</sup>

The VHA role in NDMS is to assist with the provision of definitive care by managing Federal Coordinating Centers located across the country. The EMSHG has 40 Area Emergency Managers located in VA facilities across the nation. These individuals train VA and community hospital staff, review emergency plans, and design and coordinate exercises and other mitigation and preparedness activities. The Area Emergency Managers also coordinate memoranda of understanding with community hospitals that volunteer to participate in the NDMS. In addition, VHA trains medical personnel in NDMS and VHA hospitals to respond to incidents involving weapons of mass destruction. This includes training of casualty reception teams and the development of patient reception plans.<sup>65</sup>

#### FEDERAL RESPONSE PLAN

Under FEMA's leadership, VHA and other agencies are responsible for carrying out the Federal Response Plan. As a support agency, VHA is one of several federal agencies sharing responsibility for providing public works and engineering services, mass care and sheltering, resource support, and health and medical services. VHA is also involved with other agencies in pre-positioning medical resources at high-visibility public events requiring enhanced security, such as national political conventions. VHA also maintains a database of VHA medical personnel including physicians, nurses, and pharmacists who can be quickly deployed to assist at a disaster site.

#### NATURAL AND TECHNICAL HAZARDS

Depending on the type of emergency involved, VHA is responsible for supporting the lead federal agency in responding to accidents at nuclear power plants or terrorists acts to spread radioactivity in the environment. VHA has its own medical emergency radiological response team of physicians and other health specialists. When requested by the lead agency, VHA's response team will provide technical advice, radiological monitoring, decontamination expertise, and medical care as a supplement to local efforts.<sup>66</sup>

#### CONTINUITY OF GOVERNMENT

The VHA maintains a site for the relocation of command and control activities to ensure its continued functioning during major national emergencies. The site includes necessary communication facilities and support functions for continuous operations.<sup>67</sup>

## **VHA ROLE IN PLANNING AND PREPAREDNESS FOR WMD INCIDENTS**

The VHA became involved in contingency planning for incidents involving weapons of mass destruction following the announcement of PDD 39. The Health and Medical Services Annex to the FRP specifies four responsibilities for VHA:<sup>68</sup>

- Alert VA NDMS Federal Coordinating Centers (FCCs) to activate NDMS area operations/patient reception plans, initiate bed availability reporting, and coordinate patient reception, management, and the provision of inpatient care through NDMS hospitals in areas where VA medical centers serve as local NDMS FCCs.
- Assist in providing medical support to State and local governments within the disaster area. Such services may include triage, medical treatment, and utilization of VA medical centers.
- Provide available medical supplies for distribution to mass care centers and medical care locations being operated for disaster victims.
- Provide assistance in managing human remains, including victim identification and disposition.

VHA assets that are deployable for response activities include Medical Emergency Radiological Response Teams (MERRTs) and Emergency Medical Response Teams (EMRTs). The MERRT is a self-sufficient 25-member contingent consisting of physicians, radiologists, health physicists, and staff deployed as needed to supplement medical care at a hospital, provide technical advice, assist with decontamination, and provide radiological monitoring. The EMRT is an 80+ member multidisciplinary team available to provide medical, logistic, engineering, and administrative assistance primarily to other VA medical care facilities.<sup>69</sup> At the national level, the VA maintains a Disaster Emergency Medical Personnel System (DEMPS) which is a registry of special skill clinical personnel available for deployment to an incident site. The DEMPS contains professional qualifications and job skills including specialized expertise in weapons of mass destruction for full-time VHA employees who provide the information on a voluntary basis.<sup>70</sup>

In addition, PDD39 provided funding to purchase antidotes, antibiotics, and other pharmaceuticals in support of four National Medical Response Teams sponsored by the US Public Health Service. The VHA procures, stores, and maintains these pharmaceutical caches in strategic locations throughout the country. These medical stockpiles are critical to the federal assistance provided to state and local governments should they be overwhelmed by the

consequences of a terrorist attack. The stockpiles can also be loaned to local governments or pre-deployed for special events, such as the Olympic Games. During a Presidential declared disaster, EMSHG staff coordinate VA assets such as medical and support personnel, supplies, equipment, and pharmaceuticals that may be deployed to support response and recovery activities.<sup>71</sup>

The VHA also maintains stockpiles of pharmaceuticals for the Centers for Disease Control and Prevention (CDC). Under contract for the CDC, VHA purchases drugs and other medical items and manages the storage, rotation, security, and transportation of these items. Packages of needed items can be assembled and delivered to any location in the nation within 12 hours of a federal decision to deploy them. VHA also manages a larger quantity of vendor managed supplies that can be assembled and deployed within 24 to 36 hours of notification.

Acts of terrorism involving weapons of mass destruction are virtually certain to occur within the United States. Local jurisdictions face significant challenges in preparing to deal with these incidents and will inevitably be overwhelmed when an event does occur. The VHA has the capacity to provide significant assistance to local, state, and national response efforts.

#### **POTENTIAL ROLES FOR VHA**

" . . . and he that will not apply new remedies must expect new evils; for time is the greatest innovator. . . ."

—Sir Francis Bacon

Hospitals are a vital part of America's healthcare infrastructure and play an essential role in disaster readiness and response. The VHA applies a four-phase comprehensive emergency management approach that emphasizes mitigation, preparedness, response, and recovery activities. As the largest healthcare system in the United States and as a system totally under the control of the federal government, the VHA serves as an emergency management asset in general, and as a resource to prepare for and respond to incidents involving weapons of mass destruction in particular.<sup>72</sup> The VHA is in a unique position to respond to incidents involving weapons of mass destruction and provide essential proactive planning for consequence management to improve the healthcare system response time.<sup>73</sup> VHA facilities are located in every state and have access to the resources needed to support state and local needs in the event of a large scale disaster.

## EDUCATION OF PROVIDERS

The VHA's present training capabilities could be used to better prepare healthcare providers for disaster management response.<sup>74</sup> VHA's role in health care professional training, particularly physician post graduate medical education, affords an opportunity to provide standardized courses on managing the effects of chemical, biological, and nuclear weapons. The VA has long-standing relationships with approximately 85% of the nation's medical schools. About one-third of all residents and one-half of all medical students receive training at a VA healthcare facility annually. Clinical rotations for non-physician health care providers involve over 100,000 trainees each year from universities and colleges throughout the nation. VHA settings could readily be used to deliver an organized program of instruction ensuring mastery of essential learning objectives related to consequence management.

## FEDERAL COORDINATING CENTERS AND AREA EMERGENCY MANAGERS

The VHA role within NDMS is to assist with the provision of definitive medical care. This is accomplished through Federal Coordinating Centers (FCC) located across the country. The Area Emergency Managers, located in population centers throughout the U.S., are available to assess local and regional preparedness and provide ongoing support to local facilities. Some VA Medical Centers serve as FCC's and VHA Area Emergency Managers (AEMs) assist by coordinating memoranda of understanding with community hospitals that volunteer to participate in the NDMS program. These hospitals agree to provide staffed beds in the event that a local community becomes overwhelmed and patients have to be relocated to other facilities for care. In addition, AEMs assist with training of casualty reception teams at FCCs and in the development of local NDMS patient reception plans.<sup>75</sup> Expansion of these activities to all VA medical centers would enhance efforts to recruit additional NDMS hospitals and provide training to community hospital personnel.

## CASUALTY RECEIVING CENTERS

The VHA network is geographically dispersed in essentially all of the nation's major metropolitan areas ensuring the availability of facilities, personnel, equipment, and supplies. Due to their geographical distribution, VA healthcare facilities could be designated as community or regional casualty receiving centers in incidents requiring consequence management. Although under normal operating conditions, a VA healthcare facility may only provide care for non-veteran patients for humanitarian reasons; in a mass casualty incident,

care may be provided to anyone according to the urgency and gravity of the situation.<sup>76</sup> VHA facilities could be supplied with resources and special decontamination equipment to deal with contaminated casualties. These medical centers are also better equipped to deal with the surge of patients likely to be seen in an incident involving WMD.

#### **DATA MANAGEMENT INFRASTRUCTURE**

The VHA information management capabilities also provide a significant asset. The VHA national surveillance system for emerging pathogens automatically collects information on 14 specific pathogens from all VA medical centers. It could readily be tasked to include additional microorganisms and other laboratory and diagnostic information. VHA's satellite broadcast system, telecommunication network, and computerized medical record system enable the dissemination of information by electronic means throughout the world.<sup>77</sup>

#### **INTERAGENCY PROCESSES**

The key to consequence management is rapid and appropriate intervention. For domestic emergencies, planners typically address command and control, casualty evacuation, regulating procedures, facilities capabilities, the transition from routine conditions to contingency operations, and efficacy of readiness planning.<sup>78</sup> However, due to the overwhelming impact of many disasters, unforeseen contingencies or omissions during execution can lead to response delays and potential loss of life and property. Along with the above items, a detailed assessment of interagency coordination, integration, training, and utilization is essential. Advanced agreement on response procedures will mitigate the loss of life and property.

Problems in responding to incidents commonly can be linked to command and control. Across the interagency community, discordant policies, procedures, and agendas cloud responsibilities when these multiple actors are compelled to work jointly. Numerous federal agencies along with state and local authorities are directly involved in relief efforts. Each typically establishes an emergency operations center staffed by its own personnel to deal with common problems. Solutions often require collective efforts that necessitate numerous coordination meetings to share information, resolve issues, clarify roles, and evaluate procedures. Confused and controversial responses to incidents point to a continuing problem that must be addressed.<sup>79</sup>

The challenge to assemble a combined federal response force capable of addressing a range of contingencies on short notice is basically a question of prior planning, organization,

and crisis decision making to get the right assets rapidly to the right place. Once assembled, a single focal point for dealing with command and control responsibilities must be delineated. This will allow planning, operations, and logistics functions to be coordinated and administered more effectively. It is critical to establish central control and unity of effort to deconflict interagency rolls, responsibilities, and plans, and develop a clearly defined response.<sup>80</sup>

Disaster management is not simply a matter of technical competence. It cannot be separated from policy planning or strategic thinking.<sup>81</sup> At the same time, it is heavily dependent on a range of operational and organizational skills. Time pressures imposed during a crisis not only increase the tempo of decision-making but also change its character. Disaster management requires adjustments in the relationships among affected government agencies as well as the direct and sustained involvement of senior officials. Without proper preparation, such adjustments may not occur and high-level intervention may be wasted or counterproductive. Adequate preparation for crisis cannot be assumed.

The potential for terrorist incidents, the lethality of available weapons, and higher population densities will mean that the consequences of disasters will have a heightened impact on our nation. An increase in the number of disaster declarations will result in an increase in the political profile of disaster management. The expectations of the citizens of the United States will require a constantly expanding effort to provide disaster relief and emergency assistance. Victims of incidents involving weapons of mass destruction will expect a swift and comprehensive federal response. Ensuring the earliest initiation of disaster relief services and coordinating the smooth delivery of needed skills, equipment, and supplies is the surest way to mitigate the loss of life and destruction of property during consequence management incidents. The VHA system of medical centers can provide resources to meet these needs.

## **RECOMMENDATIONS**

Interagency collaboration is vital in disaster management. Efforts to ensure coordination, access, and unity of effort must be thorough and continuous. To ensure interagency collaboration and the optimum availability of services, the VHA should strengthen existing agency affiliations and where needed seek approval to implement the following recommendations.

- Establish and maintain close working relationships with state and local authorities. This will promote greater alignment of responsibilities and requirements in consequence management. In addition, providing training programs in consequence management

through VHA settings will ensure a uniform national compliance with response procedures. These training programs should be conducted under stressful scenarios to realistically prepare communities for these events.

- Develop appropriate organizational structures that provide sufficient civilian and military oversight and provide a mechanism to deconflict competing demands for limited assets. These structures should focus on function, priority, and the availability of alternatives.
- Develop the capability to “surge” medical support for consequence management when needed. Efforts should be made to recruit additional NDMS hospitals and provide training to community hospital personnel
- Improve procedures in procurement and maintenance of medical supplies, equipment, and pharmaceuticals. VHA facilities could also be supplied with resources and special decontamination equipment to deal with contaminated casualties.
- Utilize VHA’s satellite broadcast system, telecommunication network, and computerized medical record system to disseminate information by electronic means to expedite information flow during consequence management.

The devastating effects of a WMD will require an extensive response from all levels of government. With a widespread presence throughout the nation, the Department of Veterans Affairs is positioned to respond to such an event. The DVA system is poised to play a significant role in preparing the nation to lessen the impact of a WMD attack. By making available its’ health care facilities, its’ expertise in patient care, and through education programs for health care providers, VHA can ensure the American public of timely and appropriate consequence management response.

WORD COUNT = 7,658

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