

The Emergency Management Strategic Healthcare Group Technical Advisory Committee: **Expert Guidance for Complex Issues**

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The emerging threat of terrorist use of weapons of mass destruction (WMD) brings new challenges to health care and VHA. An Emergency Management Strategic Healthcare Group Technical Advisory Committee (EMSHG TAC) has been formed to help VHA address several novel and unfamiliar challenges.

Imagine that it's a Saturday night and you are the physician or nurse on duty in the emergency department, clinic, or admissions area of a VAMC anywhere in the US. Imagine, too, that you receive, with little or no previous warning, 10 to 20 or even 100 or more walk-ins who are panic-stricken and demonstrate various degrees of coughing, wheezing, shortness of breath, and other signs of having been exposed to "something." Within minutes—or even seconds—you need to act and query yourself and the staff about critical issues.

To what agents have the patients been exposed? Are they contagious to staff and others? Will they contaminate the hospital? Should we, the staff, wear "special" protective gear and, if so, where is the equipment kept and how do we use it? Do these patients require decontamination and, if so, does this require special equipment, supplies, and skills? How do we triage and treat them? Should we administer specific medications? And if most or all of these patients are non-veterans, can we—should we—treat them?



The Threat of Weapons of Mass Destruction

If you think what has been described sounds dramatic and even unbelievable, think again. A similar scenario occurred in 1995 in Tokyo, Japan, when terrorists released Sarin, a potentially deadly nerve agent, in the subway system. Thousands converged on an unprepared and quickly overwhelmed healthcare system, resulting in chaos and contamination.

The event was a “wake up” to those impacted—and to the world—as to just how unprepared *we* are for responding to consequences of terrorism and the emerging threat of WMD. WMD is the term used to describe nuclear, biological, chemical, and sometimes explosive agents that can be used by terrorists or others whose intent is to inflict harm to persons and property (See Table 1).

VA's role in WMD Preparedness

VHA has as its “fourth mission” emergency management, contingency planning, and a primary role to back up DOD during war and to provide care to US citizens impacted by disaster and other catastrophic events. Contingency planning for VA facilities is assumed and is a priority.

The VHA executive agent of the fourth mission is EMSHG. Recent legislation and mandates cite the federal government and, in some cases, VA in particular as having various roles and responsibilities related to pharmaceuticals needed in a WMD incident and training of personnel in civilian US hospitals enrolled in the National Disaster Medical System (NDMS).

Although WMD preparedness, specifically of VAMCs and other VA elements, is not precisely “legislated,” VHA leadership believes that addressing internal preparedness “up front” is critical and necessary. A TAC to the EMSHG was formed to tackle VAMC and VHA preparedness for potential incidents of WMD. Although WMD is the current “hot topic” and initial focus of the EMSHG TAC, the Committee will address other issues of signifi-

Nuclear ¹	Chemical ³
Radioactive materials	Pulmonary
Nuclear devices	Phosgene
	Cyanide
Biological²	Hydrocyanic acid (AC)
Bacteria	Cyanide
Anthrax	Vesicants
Brucellosis	Mustard
Glanders/Melioidosis	Lewisite
Plague	Phosgene oxime
Tularemia	Nerve agents
Q fever	Tabun
Viruses	Sarin
Smallpox	Soman
Venezuelan equine encephalitis	VX
Viral hemorrhagic fevers	Incapacitating Agents
Toxins	BZ
Botulism	Agent 15
Staphylococcal enterotoxin B	Riot-control agents
Ricin	CS
T-2 mycotoxins	CN (Mace)

¹Domestic Preparedness Program Hospital Provider Course. Edgewood, MD: US Army, Edgewood Research, Development and Engineering Center; 1999.

²Medical Management of Biological Casualties, 4th ed. Fort Detrick, MD: Operational Medical Division; US Army Medical Research Institute of Infectious Diseases (USAMRIID); 2000. www.usamriid.army.mil/education/bluebook.html.

³Medical Management of Chemical Casualties, 3rd ed. Aberdeen Proving Grounds, MD: US Army Medical Research Institute of Chemical Defense (USAMRICD); 1999. <http://ccc.apgea.army.mil/Documents/RedHandbook/001TitlePage.htm>.

cance to emergency management and health care in the future.

TAC Formation and Focus

The EMSHG TAC, chaired by Kristi L. Koenig, MD, FACEP (EMSHG Chief Consultant and Director of VHA's Office of Emergency Management), kicked off its first meeting at VA headquarters in Washington, DC in July 2000. TAC members, each with a role, interest, or impact on WMD and health care, include recognized experts from within VA and our federal partners. Internal members are stakeholders from clinical, research, education, safety, and management elements of VA headquarters and field entities. External members are nationally acclaimed leaders at agencies and departments with key roles and expertise in WMD (See Table 2).

The initial task of EMSHG TAC is to “develop a process to determine VHA national capabilities and stan-

dards as related to preparing VA healthcare facilities for response to the threat of incidents involving WMD.” In plotting the next course of action, TAC members are engaging in intense dialogue and scholarly interchange. Early on, Dr. Koenig reminded the TAC to broaden its perspective when addressing WMD, urging the Committee to apply a Comprehensive Emergency Management (CEM) approach.

CEM concepts imply that “disasters” (incidents) are not stand-alone events requiring total reinvention of resources and interventions. Instead, most incidents rely on common principles and practices with only limited variations. Natural disasters or WMD incidents all have the potential of threatening the integrity of a healthcare facility and its operations. All may require plan activation and resource acquisition. Variations occur only in *types* of supplies, equipment, and staff activities needed to address such emergencies.

Another important reason to “think CEM” is that CEM ensures a cyclical approach through the 4 phases of mitigation, preparedness, response, and recovery (See Table 3). By employing CEM concepts, the TAC will consider essential activities for *all* phases of a WMD incident.

Early Progress of EMSHG TAC

Throughout TAC deliberations, a number of critical assumptions and “issues for action” have surfaced that collectively are becoming the impetus for how to proceed. These assumptions and issues are not of unique interest to VA but are of agency, national, and even global significance (See Table 4).

The newness of WMD (and associated terrorism) and its impact on health care at every level allows an assumption by most that there is no agency or individual that can claim exclusive subject-matter expertise. Collaborative planning and inter-agency sharing of ideas can be the only possible method to attain useful results—results that will ultimately save lives.

To tackle the myriad of issues and utilize the broad expertise of our federal partners, the TAC formed several Task Forces (See Table 5).

EMSHG TAC Strategy

Since July 2000, the TAC has met quarterly. The work of the Task Forces, however, has been focused and frequent. The collective wisdom of TAC membership, combined with the extensive expertise of non-TAC members who participate on each Task Force, serves to provide substantive beginnings and future solutions.

When addressing WMD and healthcare facilities, the path to conclusions and consensus is complex and often controversial. The charge of the Task Force on Personal Protective Equipment and Decontamination exemplifies the importance of proceeding with caution, considering all risks and benefits of the end products (See *Task Force Challenges*).

VHA policy recommendations, program proposals, and protocols will be TAC products that will be realized during FY 2001. The results

are intended to render VA more able to mitigate, prepare for, respond to, and recover from WMD incidents. The mark of success will be improved safety and well being of veterans, visitors, and staff through an environment enhanced by interagency partnerships with experts who place the ultimate value on human life.

Conclusion

The work and products of the EMSHG TAC will potentially impact all VHA facilities. The current TAC focus affects us all. We can no longer risk resistance or passivity to this topic. Those in a small, rural, or remote VAMC may believe that their community is an unlikely “can-

Table 2. External Representatives, EMSHG TAC

US Army Medical Research Institute of Infectious Disease (USAMRIID)
US Army Medical Research Institute of Chemical Defense (USAMRICD)
US Public Health Service (USPHS) Office of Emergency Preparedness (OEP) and Noble Hospital Training Center
Federal Emergency Management Agency (FEMA)
US Army Reserve (USAR)
Health Services Resource Administration (HSRA)
Agency for Toxic Substances Disease Registry (ATSDR)
Federal Bureau of Investigation (FBI)
National Domestic Preparedness Office (NDPO)
Centers for Disease Control and Prevention (CDC)

Table 3. CEM Phases

CEM has been a cornerstone of the Federal Emergency Management Agency's (FEMA) program policy since the agency's creation in 1980. CEM integrates the various emergency programs and activities into a “life cycle.” The 4 phases are visualized as a circle, with recovery leading back to mitigation and back into a continuous circle.

Phase	Program Elements
Mitigation	Hazards Identification and Risk Assessment Hazards Management Public Education and Information
Preparedness	Resource Management Planning Training Exercises, Evaluation, and Corrective Actions Finance & Administration
Response	Direction, Control, and Coordination Communications and Warning Operations and Procedures Logistics and Facilities
Recovery	Short- and Long-term Priorities and Processes Vital Resources Resumption/Restoration Procedures

Drabek T, Hoetmer G. *Emergency Management: Principles and Practice for Local Government*. Washington, DC: International City Management Association; 1991.

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Task Force Challenges . . . PPE, Equipment and Decontamination

Recommending essential levels of Personal Protective Equipment (PPE) is no simple task (See table). DOD has been the recognized authority on protecting people who may be exposed to nuclear, biological, or chemical (NBC) agents (another term for WMD). Protection in an NBC environment is so vital to DOD that all service members engage in some degree of training on agent identification and on the proper wear and maintenance of Mission Oriented Protective Posture (MOPP) gear.

With the emerging threat of WMD, personal protection is no longer “just a military problem.” Many say that we cannot simply

translate military concepts into daily civilian and healthcare facility (HCF) operations. As the Domestic Preparedness Program (DPP) evolved in the mid-1990s, DOD was mandated to train personnel in US cities in WMD. A number of civilian officials charged that the DPP was “too military” and not compatible with civilian concerns or roles. This controversy continues to surface as the PPE, Equipment and Decontamination Task Force searches for appropriate recommendations on types and levels of PPE for VA HCFs.

Military versus civilian protective equipment is but one controversy. For years, the civilian sector has played a role in helping com-

munities cope with various hazards. Local fire departments and emergency management agencies have plans, equipment, and trained personnel for response to hazardous materials (hazmat) incidents. In these cases, PPE is unlike military MOPP gear; rather, it is highly sophisticated equipment that demands the wearer engage in extensive training. Regulatory bodies such as OSHA, NIOSH, and EPA issue strict guidelines for all who don PPE. Regulatory violations result in stiff penalties.

The military and community-at-large are not the only entities concerned about WMD, hazardous materials, and other harmful agents.

PPE Levels of Protection



Level “A” Fully encapsulates the body so that no vapor penetrates the suit. Respiratory protection is Self-Contained Breathing Apparatus (SCBA) or Supply Air. Other features include inner/outer chemical gloves and boots, and Personal Alert System (PAS) device. Typically worn by responders into Immediately Dangerous to Life or Health (IDLH) incidents or unknown atmospheres for the purpose of rescue, assessing, or mitigating the hazardous materials event.

Level “B” Full-body chemical suit that may introduce vapors. Respiratory protection and other protection features are normally the same as used in Level A. Typically worn by responders who have identified the material or agent, have determined expected exposure levels, and may conduct rescue, further incident assessment, and initiate recovery, even in IDLH environments.



Level “C” Full-body chemical suit. Respiratory protection is air purifying. Normally inner/outer gloves along with chemical resistive boots. Typically worn by responders or others who have assessed exposures either by reviewing plans or by monitoring of chemical agents. Cartridges must be specific for the type agents expected and not exceed exposure limitations.

Level “D” No respiratory protection required; minimal skin protection. Note: In a healthcare facility, it is recommended that any time persons may be in contact with chemicals, that chemical-resistive clothing including gloves, boots, and face and eye protection be worn.



Depending on facility type and mission, HCFs may already house dangerous agents in laboratories, radiology departments, and chiller and boiler plants. Some VAMCs are located close to industries or arsenals and have formal agreements citing that they (VA) will assist in a community incident. In addition, most facilities are located close to thoroughfares; accidents involving transport of hazardous materials is an issue.

All factors considered, VHA HCFs are already involved in planning for small-scale hazmat incidents and are subject to the same regulations (OSHA, NIOSH, EPA) applied to the community. Some VAMCs have on-site fire departments. All VAMCs have safety or industrial hygiene staff with expertise and experience in handling hazmat incidents, but this is not enough to manage large numbers of casualties exposed to potentially unknown and deadly agents.

The PPE, Equipment and Decontamination Task Force will recommend how much protection is "enough." Mass purchase of expensive equipment for all VHA facilities would be costly and perhaps unnecessary. Some Task Force members believe that we must provide the maximum level of protection and be prepared to defend personnel against all known and unknown agents. This option would require extensive staff training similar to that of fire department hazmat teams. Those who support this option recommend "Level A."

Others recommend "Level C," relying on DOD-conducted research that supports this equipment as sufficient in protecting staff against the "most likely" WMD agents. This option also would involve extensive staff training but does not demand as stringent a regimen as would Level A. All options include adherence to OSHA and other regulations.⁴ One of the current controversies among WMD experts is how to apply OSHA regulations to HCFs.

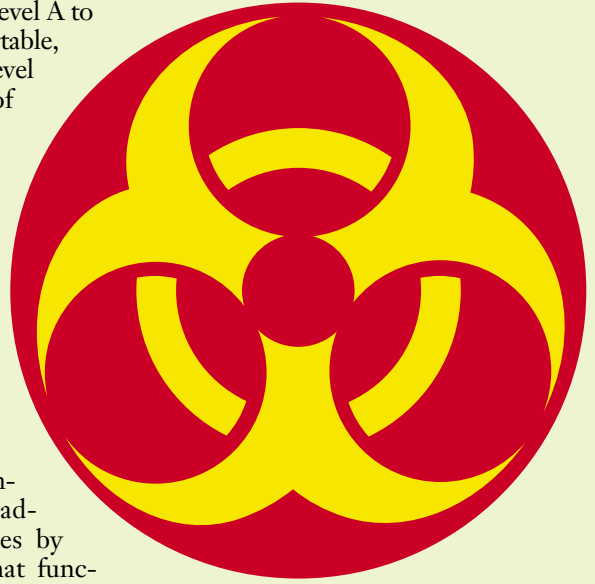
Difficulties with PPE selection extend beyond dollar amount, regulatory scrutiny, and even protection

against harmful agents. Level A to Level C PPE is uncomfortable, hot, and requires a high level of fitness on the part of the wearer. Visual fields and auditory clarity are impaired, potentially leading to difficulties in delivering patient care. Can we expect HCF staff (whose daily emphasis is care of veteran patients) to, in an instant, don PPE and adapt to the grueling and uncomfortable task of treating large numbers of casualties under adverse conditions? Studies by DOD have validated that functioning in PPE is taxing and time-limited. Because of the infrequency of WMD incidents to date, few opportunities have presented that allow in-depth study of effects on the wearer of long-term functioning in PPE.

Beyond recommending a PPE level, the PPE, Equipment and Decontamination Task Force also must recommend a standard approach for decontaminating victims. Debate abounds on this topic and some of the same dilemmas are faced by civilian and military experts. Is soap and water adequate or should a dilute bleach solution or another substance such as foam be used? Should victims completely disrobe or can effective decontamination be accomplished with partial disrobing? What if victims refuse to disrobe? How do we know when victims are "clean?" What is the best method to expeditiously and effectively decontaminate hundreds of victims? Scientific research is limited and the Task Force must rely on the few existing studies coupled with expert opinion.

Planning for decontamination also poses practical challenges.

⁴Historically, OSHA and related regulations were designed primarily to address incidents *outside* HCFs and those impacting first responders (fire, police, and emergency medical services personnel) rather than incidents impacting doctors and nurses in hospital emergency departments and beyond.



Should an HCF invest thousands of dollars in a fixed, permanent attached decontamination structure or purchase the more economical portable shower equipment? Engineering services must weigh in on how to direct air flow (so the "main" HCF is not at risk for contamination), manage contaminated water run-off, and structure access that is convenient to WMD victims yet separate from non-contaminated patients, staff, and visitors. Can a decontamination structure or portable set-up be designed that will protect casualties from sub-freezing weather (and hypothermia) and other elements?

In continuing work on its charter, the PPE, Equipment and Decontamination Task Force will rely on other TAC Task Forces and the full Committee. The Task Force on Research may assist on how to assess and measure the many unanswered questions. The Task Force on Basic Training can contribute to details on how to deliver suitable training to "recipients" of PPE and decontamination equipment.

Sophocles said, "Quick decisions are unsafe decisions." The PPE, Equipment and Decontamination Task Force cannot rush its recommendations. Consequences of a quick decision are too great.

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Table 4. Assumptions and Issues for Action

<ul style="list-style-type: none"> No national standard exists for preparedness, training, or treatment of victims of a WMD incident.
<ul style="list-style-type: none"> Recent legislation defines WMD preparedness roles and responsibilities, requiring multiple agency cooperation. (How do we maximize resources and collective knowledge while avoiding redundancy of effort?)
<ul style="list-style-type: none"> VA healthcare facilities' issues are representative of other federal and non-federal healthcare facilities.
<ul style="list-style-type: none"> DOD, because of its wartime mission, has been the hallmark for WMD preparedness. (How do we apply its concepts and practices to non-DOD programs?)
<ul style="list-style-type: none"> Healthcare facilities must comply with specific regulatory agency (e.g., Occupational Safety and Health Administration [OSHA] and National Institute for Safety and Health [NIOSH]) requirements when planning for WMD events.
<ul style="list-style-type: none"> A "minimum" level of Personal Protective Equipment (PPE) and standard protocols for decontamination, isolation, quarantine and other treatment-related practices must be addressed, and associated costs and requirements determined.
<ul style="list-style-type: none"> The acceptance of the axiom "response is local" translates that VA facilities will ensure an approach that integrates with and reflects local community plans.
<ul style="list-style-type: none"> A WMD incident will require immediate access to specific pharmaceuticals and supplies, in quantities that exceed most healthcare facilities' and local systems' resource capabilities.
<ul style="list-style-type: none"> Surveillance, research, and other empirical approaches are necessary to monitor and validate preparedness and treatment measures.
<ul style="list-style-type: none"> To ensure equal benefits afforded to all, a program designed for VHA nationwide implementation must consider variables such as resource capabilities and clinical focus, and support "discrepancies" of "small vs. large," "rural vs. urban," and variations in focus (e.g., primary vs. tertiary care facilities).
<ul style="list-style-type: none"> Organizational and leadership support of eventual TAC recommendations is imperative for program success.

Table 5. EMSHG TAC Task Forces and Chairpersons

<p>Organizational Support—Robert Roswell, MD, VISN 8 Director</p>
<p>Basic Training—Larry Flesh, MD, Medical Emergency Radiological Response Team Leader and VISN 2 Network Medical Director</p>
<p>PPE, Equipment, and Decontamination—Mr. John Hancock, VA Director, Office of Occupational Safety and Health</p>
<p>Pharmaceutical Stockpiles—John Ogden, RPh (Chief Consultant, VHA Pharmacy SHG) and Mark Brown, PhD (VHA Environmental Agents Service)</p>
<p>Quarantine—BG Donna Barbisch, USAR</p>
<p>Surveillance—Gary Roselle, MD, VHA Program Director, Infectious Disease</p>
<p>VA's Role in the Community—Tom Weaver, FACHE, VAMC Director, Bay Pines, FL</p>
<p>Research—Erik Auf der Heide, MD, FACEP, ATSDR</p>

didate" for a WMD incident. But be reminded that Oklahoma City was not on the "list" of high-risk areas for a terrorist attack prior to the bombing of the Murrah Building. Consider, too, that a relatively remote facility may be the *closest* hospital for residents of a community (and the logical site to seek care following a WMD incident).

On the other hand, some may believe that a VAMC in a large, urban community has the advantage of being located close to community hospitals, fire departments, and others who will "take the lead" following a WMD incident. However, in an incident that produces large numbers of frightened victims, one can expect a convergence on *all* available healthcare facilities, especially the closest facility, which indeed may be a VAMC.

The threat of WMD is real. A much-repeated prediction that a WMD incident on US soil is ". . . not a matter of *if*, but *when*" demands immediate action. VA, through its EMSHG TAC, has elected to act. It is a VA "tradition" to progressively pursue challenges that threaten safety and quality in health care. VA chooses not to wait until *when*. ■

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