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# U.S. COAST GUARD HEALTH SERVICES RESPONDERS IN MARITIME HOMELAND SECURITY

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*Captain Arthur J. French, MD, USPHS, Joe DiRenzo III, and Chris Doane*

*Superior operational service is our core purpose, and we have long been recognized as the world's best Coast Guard. America expects that we will bring the same level of professionalism and maritime leadership to the war on terrorism that we have traditionally brought to all our other missions.*

ADMIRAL THOMAS H. COLLINS, USCG

**U**nlike most other federal agencies, the Coast Guard is a true first-response organization, with statutory authority and responsibilities that allow re-

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sponses following a disaster without waiting for a Stafford Act declaration of state request for assistance. This ability and expectation have been lauded in the public press critiques of the government's response to Hurricane Katrina. As an agency within the Department of Homeland Security, the lead federal department for responses to terrorism and natural disasters, the Coast Guard must maintain capabilities to respond to terrorism and all-hazard incidents in the maritime and coastal regions. Katrina demonstrated that medical first responders are integral players during catastrophic incidents in addition to search and rescue (SAR) responders. In terms of response planning and execution, Coast Guard health service personnel are an untapped resource.

The Department of Homeland Security (DHS) has been leading an effort incorporating all levels of government and the private sector to build a comprehensive and coordinated campaign to minimize the risk of terrorism to the United States. Much of the

department's and Coast Guard's efforts have focused on threat and vulnerability—that is, preventing terrorist attacks. We must also ensure that an appropriate investment in mass casualty response capabilities is made to minimize the consequences of a terrorist attack, transportation security incident, or natural disaster. This article will examine maritime consequence management and a proposal for using the Coast Guard's health services personnel as an integral resource for its responsibilities under the National Response Plan.

The Coast Guard has also focused on prevention in its efforts to secure the U.S. maritime domain. For over fifty years the Coast Guard has been charged with overarching responsibility for the safety and security of American ports and waterways. The Maritime Transportation Security Act of 2002 underlined the service's role as the lead federal agency for maritime security. Since 9/11 it has produced outstanding results. The nation's maritime transportation system is far more secure than it was on 11 September 2001, and the improvement continues.

For over two centuries, the Coast Guard has been charged with lead responsibilities for maritime consequence management; in fact, most people think of the Coast Guard in connection with maritime searches and daring, dramatic rescues. Today this role in maritime SAR has been codified in a National Search and Rescue Plan. Similarly, the Coast Guard has long been responsible for marine environmental protection and response; that role too has been formalized, in the National Contingency Plan developed in accordance with the Oil Pollution Act of 1990. This plan makes the Coast Guard the lead federal agency for responding to oil spills and hazardous material releases, including intentional chemical or biological releases, in the coastal zone—that is, all tidally influenced waters and adjacent waterfronts.

The service's responsibilities as a lead agency involve not just federal agencies but state and local governments as well. This fact has given the Coast Guard a collective "persona" unique among federal agencies—that of a true first-response organization, whose assets arrive on scene alongside, if not ahead of, those of local agencies and operate in full partnership with the local response community. For many states and municipalities, the Coast Guard is the primary resource for security, search, and rescue response on the water. The Katrina response demonstrated that the Coast Guard may also be the primary or, in some cases, the only first responder in coastal communities devastated by a disaster.

While the Coast Guard is the lead federal agency for coordinating responses in the maritime domain, the service lacks the capacity to meet all of these demands; further, its jurisdiction and responsibilities in various aspects of the maritime domain are shared with other government agencies. Therefore, it has built cooperative partnerships, at all levels and in both the public and private

sectors, designed to pool resources. The keys to success in this respect have been the Incident Command System (ICS) and the concept of “unified command.” The latter is quickly described—under its rubric, entities having significant jurisdictions over, or stakes in, an incident or operation provide representatives with authority to act in a decision-making council that, in turn, ensures unity of effort. This process has proven effective over the last decade and has been mandated for all federal agencies by Homeland Security Presidential Directive 5, as set forth in the National Response Plan and the National Incident Management System.

For the Coast Guard, the Incident Command System goes back to the 1989 *Exxon Valdez* oil spill and the Oil Pollution Act of 1990, as a result of which the Coast Guard adopted the ICS from the National Fire Service as a fairly robust infrastructure for responding to maritime spills and releases. Until the 11 September 2001 attacks, the system was primarily limited to environmental hazards. Because few casualties were involved, there was no operational requirement for medical first responders; concern was focused on environmental issues and responder safety. As oil-spill-prevention programs took effect the number of spills decreased, and the Coast Guard, as a good steward of the taxpayer’s dollar, allowed the response infrastructure to shrink—reducing funding for equipment, reassigning personnel, etc.

With the terrorist attacks of 9/11, the Coast Guard’s senior leadership, starting with the Commandant, then Admiral James M. Loy, understood the transformation needed and established maritime homeland security as the service’s number-one mission priority alongside SAR and rebalanced mission emphases in terms of this national mandate. Since then all Coast Guard programs have been required to improve current and future readiness for the “new normalcy,” as described in the *Coast Guard Maritime Strategy for Homeland Security*.<sup>1</sup>

The *Maritime Strategy*, which prescribes principles, strategies, and program elements, establishes prevention, detection, and deterrence as the primary foci of the Coast Guard’s security efforts. Such critical issues as maritime domain awareness and implementation of the omnibus Maritime Transportation Safety Act have dominated the allocation of the service’s financial and human resources. With respect to the latter, the service has called upon its personnel to perform at levels well above normal in preventing maritime terrorist attacks, and indeed they do, but as a result they have little time left for consequence-management preparedness. While everyone accepts the old adage that “an ounce of prevention is worth a pound of cure,” prevention against terrorism cannot be 100 percent effective, the *Maritime Strategy* acknowledges: “The maritime terrorist threat presents a daunting challenge, and adequate measures against it can never be completely guaranteed.” As Hurricane Katrina demonstrated, we will also always be faced with responses to major natural disasters.

The service's lack of emphasis on consequence management does not align with the *Maritime Strategy*, which states, "The Coast Guard equally values emergency preparedness and the response needed to minimize damage and recover from any future terrorist attacks that may occur, despite its best efforts at prevention and deterrence. . . . To meet this new threat increased levels of preparedness and response capabilities are required, including additional personnel specially trained and equipped to mitigate the impacts of a terrorist incident." Nonetheless, and despite the increased risk of a terrorist chemical, biological, radiological, nuclear, or high-yield-explosive (CBRNE) attack, other than strengthening the CBR response capabilities of its National Strike Force, the Coast Guard has done little to rebuild its former oil and hazardous-material response infrastructure. Nor has it adequately addressed the unique first-responder requirements of mass casualties in an intentional or unintentional incident, particularly as might result from an attack on a cruise ship, high-capacity passenger vessel, or crowded waterfront venue.

This shortfall is further exacerbated by the declaration in the *Maritime Strategy* that "the Coast Guard will particularly ensure the readiness of its forces to work safely in areas where CBRNE weapons have been used, as well as its ability to communicate with first responders from other military, civil, and law-enforcement agencies in applying common disaster-relief and terrorist incident protocols." In addition, the president has directed that we will build "an emergency management system that is better able to manage not just terrorism but all hazards; a medical system that is not just better able to cope with bioterrorism but with all diseases and all manner of mass-casualty incidents."<sup>2</sup> An attack on a chemical tank ship or a terrorist craft loaded with a chemical, biological, radiological, or high-explosive weapon to be exploded in a populated seaport would severely test our maritime response capabilities.

The challenge requires that the Coast Guard adapt its internal response infrastructure and its medical expertise to the prospect of maritime mass casualties. Medical backgrounds will be needed if response teams are to bring comprehensive perspectives to planning, coordinating with other entities, and offering necessary staff expertise. The service has taken the positive step of establishing two Incident Management Assist Teams, deployable groups of specially trained and highly experienced personnel in the Incident Command System and major incident management. They have assisted Coast Guard incident commanders on multiple occasions, including the response to Katrina, providing a nucleus of incident management expertise with outstanding success. Unfortunately, the duty is a collateral one; the teams' members are permanently assigned to a variety of Coast Guard commands. These units are already hard pressed to meet their day-to-day mission load, and their commanders are increasingly reluctant to allow

their qualified personnel to join the teams. Attempts to create permanent billets to staff the assist teams have fallen short in budgetary competition. While effective in incident management, these teams do not have health services personnel assigned to provide a bridge to the medical community and a medical perspective to the incident management planning.

### MARITIME POPULATIONS AT RISK

History shows that some terrorist groups seek to achieve their goals by maximizing human casualties so as to gain the most publicity possible. The growth in the passenger capacity and numbers of cruise ships and ferries operating in or adjacent to U.S. waters has thus increased the probability of an intentional or unintentional maritime mass-casualty incident. Cruise ships alone carry more than 6.5 million American citizens annually. Cruise ships and ferries are “soft” targets for terrorist attacks; clearly passengers of these vessels are a population at risk.<sup>3</sup>

An attack on such a ship could generate hundreds of critical casualties requiring airway, oxygenation, ventilation, and intravenous support. Previous incidents show that the sinking of a vessel would result in a large number of hypothermic casualties.<sup>4</sup> In the case of a chemical or biological attack, psychological casualties—symptomatic but stable—would outnumber actual physical casualties by ten or fifteen to one.<sup>5</sup> The response would be little less for an attack that did not produce large numbers of injured; all of the hundreds of passengers (some cruise ships and ferries carry in well excess of a thousand passengers) would have to be screened and prioritized for evacuation.

The likely consequences of a maritime mass-casualty incident, then, will require a deliberate multidiscipline, multistakeholder, multiresponder approach from emergency-response planners in the homeland security and search-and-rescue communities. This includes planning an adequate health services support (HSS) architecture. The core priorities include saving lives, reducing suffering, and mitigating the impact on an affected population; in all of these the medical community will bear a heavy burden. How well we prepare for maritime mass-casualty incidents will determine whether it can carry them.<sup>6</sup>

While the response to Hurricane Katrina was not a true maritime incident, and other agencies had lead responsibility for casualty care, the lack of involvement by Coast Guard health services personnel in planning for and executing a hurricane response was reflected in initial weak coordination between Coast Guard rescuers and medical response personnel. The Coast Guard’s search and rescue personnel did an incredible job responding to pluck Katrina’s victims from peril and transport them to safer locations. This response represented perhaps the largest mass rescue operation in the service’s history. However, while victims were transported to locations of relative safety, these movements were

not effectively coordinated during the early days of the response with emergency medical support personnel to optimize post rescue care. This less than optimum coordination reflects the lack of a medical perspective in the service's command response planning.

### MARITIME FIRST RESPONDERS

The term "first responder" has several definitions, depending upon context. Federal Emergency Management Agency (FEMA) first-responder grants go to law enforcement, fire/rescue, and emergency medical services agencies. The medical and public health grant programs of the U.S. Department of Health and Human Services consider emergency medical agencies and hospitals as first responders as well, to the extent that they are "first receivers" of victims. The relevant joint capstone document discussing the five phases of casualty care management defines the role of first responders:

The first response may include self-aid and buddy aid, combat lifesavers, medics, hospital corpsmen, physician assistants (PAs), physicians, or other medical personnel. The first responder should have a working knowledge of the next level of care available and the patient movement system. Within this phase, the focus of health care providers is to save life and limb and stabilize the patient sufficiently to evacuate to the next level of care. A stabilized patient is one whose airway is secured, hemorrhage is controlled, shock is treated and fractures are immobilized.<sup>7</sup>

The 2005 federal budget included \$3.6 billion to fund first responders—a 780 percent increase since 9/11. The Bush administration has proposed doubling first-responder-preparedness grants to high-threat urban areas. In fiscal 2004, DHS awarded more than forty-six million dollars to metropolitan medical response teams, established for domestic WMD incidents. However, federal grants for civilian first responders do not necessarily translate into improved maritime first-response capabilities unless gaps in maritime capabilities are deliberately identified and dollars are spent to address these gaps specifically. Though the Coast Guard remains, in the maritime realm, the primary first responder among federal, state, and local agencies, it does not receive federal first-responder grants and has realized minimal growth in its budget in this area. Until personnel are assigned to careful planning for maritime contingencies, gaps and shortfalls will remain undocumented and therefore continue to be ignored.

In accordance with the National SAR Plan, National Contingency Plan, and National Response Plan, which apply respectively to various circumstances, Coast Guard geographical commanders (that is, commanders of sectors and districts) will be the federal incident commanders for mass-casualty responses offshore, near the shore, or on the waterfront. For incidents occurring beyond three nautical miles (i.e., beyond state waters), the Coast Guard has sole jurisdiction

and responsibility for consequence management. But command staffs, while skilled and experienced in coordinating large-scale, unified incident responses, do not have the health and medical expertise required to recognize, plan for, or comprehensively address the medical issues that would result from a maritime mass-casualty incident. The U.S. maritime search-and-rescue system is designed primarily for incidents of limited size with relatively few victims, which constitute the vast majority of cases. For them the Coast Guard relies upon small-boat and air stations strategically located along the coast and in estuaries. Generally, each Coast Guard boat or air station has one ready crew on board; these crews, supported by personnel in dispersed district and sector command centers, are expert in locating and rescuing victims in small numbers. Most crew members have basic first aid training; some have qualifications as emergency medical technicians. These Coast Guard capabilities are augmented by local community squads and state-owned assets. These state and local responders have training and qualifications like those of Coast Guard responders; these units are few in number and capacity, and they are limited to inshore/near-shore operations.

Mass-rescue/casualty situations, which are not routinely practiced, could quickly overwhelm such resources. Exercises are being scheduled, but meanwhile, planning for comprehensive, multiagency responses lags. This shortfall is due in part to a lack of planning capacity within the Coast Guard; there are simply not enough people to conduct daily operations and plan for future contingencies as well. In addition, the perspectives of personnel and commands developing plans are limited by their individual experience. For example, "boat drivers" and other operators tend to focus on locating, rescuing, and transporting victims, tending to overlook the medical details involved with treating the victims. Planning teams must incorporate personnel from a wide variety of backgrounds, including medical, to ensure the synergy required to develop a comprehensive plan that addresses all aspects of a mass-rescue/casualty response and leverages all necessary government/private-sector capabilities.

Studies of conventional mass-casualty incidents have shown that 10 to 15 percent of casualties will die should they not receive timely prehospital intervention. Many maritime incidents will involve prolonged evacuation and transport times, meaning that advanced life support will have to be deployed to the scene. Secondary triage by advanced-level medical responders at offshore casualty-collection points will be critical; these responders require a higher level of clinical expertise than that of emergency medical technicians. The Coast Guard cutters, Navy ships, and merchant vessels that would act as offshore casualty-collection points lack such medical teams. Perhaps municipal medical responders or federal and Defense Department disaster augmentation teams could rapidly deploy

to and operate on the scene at a maritime incident; their availability and capability to do so have not been adequately explored.

All this does not align well with the expectations of local or state government, or of the public. The general presumption is that the Coast Guard is as prepared to respond to a maritime mass-casualty incident as the local community is to respond on land. Communities within fifty miles of the country's largest 120 cities are covered by federally funded Metropolitan Medical Response Teams capable of treating a thousand casualties; no such support is currently in place for the maritime region. Coast Guard area commanders have identified this gap as a priority strategic issue.<sup>8</sup>

The Coast Guard's internal health services support personnel need to be actively involved in the process of understanding and addressing these substantial gaps in preparedness. The Katrina response demonstrated the lack of active health services responders' engagement with operational responders. With the exception of Safety and Environmental Health Officers and forensic dentists, the medical response was limited to augmenting aviation medicine support to Coast Guard aircrews at fixed operating bases. No physicians were deployed to augment rescue and operational units and assist with coordination with medical response organizations or the numerous medical triage and transportation issues. Nor were Coast Guard health services personnel deployed to assist DoD or DHS medical teams in caring for the displaced evacuees. While the Air Force provided its own medical evacuation crews during the evacuation of patients staged at the New Orleans Airport, Coast Guard C-130s required augmentation from other services for MEDEVAC crews. The Defense Department has learned through painful experience to include health services in mission planning, but no such culture change has occurred in the Coast Guard. In addition, Coast Guard staffs have hesitated to "lean forward" and ensure that operational commanders fully appreciate the medical and health demands they will face in a mass-casualty incident and to promote their service's health support capabilities.

The HSS program has traditionally not had an operational response role, instead supporting health protection and health fitness for Coast Guard forces. The Director of Health and Safety manages the service's program at the headquarters level. The chain of command for local Coast Guard clinics and sickbays runs through Integrated Support commands via regional Maintenance and Logistics commands. The result is an administrative and operational separation between Coast Guard operational commanders and health services support activities that impedes coordination of medical operational-response planning.

While Coast Guard health services safety and environmental health officers have bridged this operational-support gap and are well integrated into marine

safety and operations response plans, the inclusion of local health services in direct planning for and support to mass-casualty responses has been inconsistent and ill defined. With the exception of a 1990s medical response “away team” concept in the Coast Guard’s Seventeenth District in Alaska and a partnering attempt in the Thirteenth District (in Marine Safety Office Puget Sound, between Coast Guard health services representatives, the Defense Department, and the Department of Homeland Security’s Regional National Disaster Medical System Coordinator), the discrepancy between Coast Guard health and medical maritime homeland-security requirements and operational readiness has not been addressed. This “delta” must be closed now, before an attack or accident forces medical and health shortcomings to be solved in the midst of a mass-casualty crisis.

The Coast Guard must proactively engage its HSS component in maritime homeland security mission planning, preparedness, and operations. Operational commanders need to “mine” their health services support personnel for information on the medical threats to the populations at risk, the response capabilities required to mitigate these threats, and the availability of medical resources to meet these needs. They also need to cause their personnel to interact and develop cooperative relationships with their health services peers at other medical facilities. The *Coast Guard Medical Manual* already assigns senior medical officers responsibilities for disaster planning and coordination with local authorities, but it needs to be defined further by doctrine and supplemented with policy guidance, particularly with respect to maritime disasters.<sup>9</sup> Planning should adapt a “network-centric” concept, one that relies on regional medical capabilities and mutual aid to support maritime incident management.<sup>10</sup> Regional medical mutual-assistance maritime-response plans that associate Coast Guard health services with specific geographical areas have not been established in most places. Creating these networks will require close coordination and dedicated communication.

Coast Guard responsibilities for direct support of maritime homeland security preparedness and response need to go beyond planning and coordination support to include operational support. While medical personnel from other agencies may become available for rapid deployment to a maritime incident, Coast Guard health services support personnel represent a valuable resource. Coast Guard Auxiliary healthcare providers also serve as “force multipliers” and backfill for deployed active-duty healthcare providers during surge operations. Doctrine needs to create, and align the service’s first responders with, the health and medical roles for terrorism and mass-casualty operations prescribed by the Department of Homeland Security.<sup>11</sup> The *Coast Guard Incident Management Handbook* defines numerous medical, health, and safety roles for responses to maritime mass-casualty scenarios (hazardous-materials accidents, collisions of

vessels, terrorist acts, use of weapons of mass destruction, etc.);<sup>12</sup> it does not identify the assets that would fill these roles.

Health services support doctrine must be congruent with the Incident Command System.<sup>13</sup> It must ensure that Coast Guard first responders—emergency medical technicians, physicians, dentists, and pharmacists—are available to deploy and integrate into the service’s response structure on little or no notice. Coast Guard operations, logistics, and marine safety programs have established training and exercise requirements for their respective communities, and the health services support community must do the same. Medical response coordination, including on-scene treatment and triage, patient evacuation coordination, and mutual aid coordination, for major contingency responses is incredibly complex. It requires the expertise of HSS personnel in the planning process as well as in the actual event.

### *Health Services Support Response Functions*

Several planning scenarios involve mass casualties from natural or technological disasters and terrorism, for which on-scene emergency medical care, triage, and en route medical care will be essential. Incident Command System positions will have to be staffed for medical command, medical communications, triage, treatment, transportation coordination, and medical supplies.<sup>14</sup> These functions will be under the control of the ICS operations section, alongside or in place of the medical unit within the logistics section established to care for responders themselves.

Coast Guard operational commanders who have anticipated the need for deployable medical incident-response teams depend upon local civilian health and medical organizations for such leadership positions. While such community emergency services may have valuable experience, there are disadvantages in using non-Coast Guard personnel, who would not be closely familiar with the service’s command and control information systems. Civilian responders, who have other primary obligations, are not likely to be readily available to participate in deliberate planning or in training and exercises. In addition, many coastal regions do not have sufficient public safety infrastructure to support a maritime mass-casualty incident to begin with, let alone detach personnel to the Coast Guard.

### *Establish Health and Safety Maritime Response Teams*

In addition to participating in the contingency planning process, the Coast Guard needs to organize and train its health services support personnel to be medical first responders and surge assets. Forming regional medical and dental providers into Health Services Maritime Response Teams (HSMRTs) analogous to the Metropolitan Medical Response System, thus consolidating the collective

regional resources from maintenance and logistics, district, and integrated support commands, would make trained and qualified Coast Guard personnel available for deployment for major contingencies on a sustained basis.

The teams would be composed of Coast Guard medical officers, dental officers, pharmacists, safety and environmental health officers, and enlisted health services technicians. A concept-of-operations document would lay out types, structure, and missions; required qualifications for members; and sources of material support. HSMRTs would be flexible, expandable or collapsible in size as required for specific missions. Staffing would be notional, without prior assignments to a specific team, with the exception of mass-casualty-incident teams, discussed below. Teams would train with existing Incident Management Assist Teams and National Strike Force Strike Teams to enhance interoperability.

The concept document would set up an optimal structure and standard operating procedures for preparing and organizing mission-specific teams for various missions, in contrast to the current *de novo* “select and direct” approach, predicated primarily upon personal interest and availability. Nonetheless, as experience as shown, reluctance by commands to supply members can be overcome only by strong commitment to the health services support program, a true cultural shift.

Teams would be designated by type according to missions, along the lines of U.S. Army Special Medical Augmentation Response Teams (SMARTs) and Air Force Small Portable Expeditionary Aeromedical Rapid Response (SPEAR) teams. Teams would be deployed individually or in combinations as required for a mission-specific assignment. Several types have been proposed.

- Mass-Casualty Incident Medical Team—supplying personnel to establish the medical branch within the operations section of the ICS organization during mass-casualty/mass rescue incidents. (These functions include on-scene triage, treatment, and medical evacuation coordination. These teams need to be preassigned to each sector, because of the likely need for a rapid on-scene, no-notice response.)
- Contingency Operations Medical Unit—within the Logistics Section of the Incident Command System organization, providing medical support, including rehabilitation and mental health services, to responders. (Such operations occur every three years or so in the Coast Guard; medical support needs to be part of a complete package.)
- Incident Management Team—providing a robust health and safety staff to incident commanders at the district/sector headquarters levels. These teams would advise incident commanders and unified commands on medical and health aspects of major contingencies, representing an organized,

comprehensive approach to mass-casualty/health emergency incidents that was lacking in the 2001 anthrax attack response.<sup>15</sup>

- Preventive Medicine Unit—offering preventive medicine and environmental health capabilities, task organized and deployed to assess, prevent, and control potential health threats, including bioterrorism and mass vaccination centers.
- Humanitarian Disaster Support Team—assisting in migrant/refugee processing and support, natural disaster relief, and noncombatant evacuation. (These teams would also be available for augmentation of fixed capabilities during disasters.)
- Tactical Support Team—supporting law enforcement and tactical operations, such as Marine Safety and Security Teams, Tactical Law Enforcement Teams, and Port Security Units. Health services personnel assigned would have specialized training and qualification in tactical medicine.
- Chemical/Biological/Radiological/Nuclear Support Team—providing technical expertise to the incident commander and operating forces in support of potential or actual hazardous-material incidents, including supervision of decontamination procedures. (The team, equipped to operate in the “warm zone,” would support National Strike Force Marine Safety and Security Teams.)

Standing up Health Services Maritime Response Teams requires adequate logistical support, funding for equipment and training, and triage and treatment sets staged in each sector, ready for immediate deployment. There has been reluctance to divert Coast Guard funds from direct patient care to prepare for contingency responses; without a servicewide mandate, financial disincentives will persist. Such contingency sets as exist have been established from local funds and inventories based on local medical officer preferences, creating nonstandard triage procedures and equipment. A Coast Guard-wide standardized HSMRT medical set, including decontamination equipment, would optimize procurement and inventory maintenance. Standardizing medical sets and protocols also facilitates logistical support and proficiency training between units. Every effort should be made to ensure interoperability and compatibility with systems used by other federal, state, and local agencies.

#### **SITUATIONAL AWARENESS AND INTEROPERABILITY**

Comprehensive preparedness will require integrating electronic information systems, including performance support, geographical information, and

communications interoperability. Off-the-shelf technology is available and should be exploited.

“Situational awareness” within any battle space means, in a health services context, knowing where casualties and medical resources (triage/casualty collection points, hospitals, and air medical and ground transport staging sites) are. Health services response elements need to be in the incident commander’s “common operational picture.” Health services leadership elements need geographical information software and hardware that can collect, analyze, and share spatial data, and the health services–specific requirements need to be integrated into the Hawkeye Core C2 Suite and Common Situation Display System now being deployed to sector command centers.

Handheld digital assistants that incorporate wristband barcode or radio-frequency identification-device readers to track victims and facilitate triage are now commercially available.<sup>16</sup> Innovative performance support system software also exists, such as the Automated Decision Aid System for Hazardous Incidents (ADASHI), a Defense Department–funded, portable, computer-based, integrated decision-support system for hazardous material for civilian or military first responders to CBRNE incidents. It integrates the specific technical functions required to manage such an incident—initial hazard assessment, hazard source analysis, mitigation alternatives, physical protection requirements, decontamination methods, medical treatment, and triage criteria.<sup>17</sup> Programs like ADASHI can also augment traditional “tabletop” training, by tracking decisions automatically and projecting consequences of those decisions.

Interagency communications have been problematic in almost every major disaster.<sup>18</sup> This lack of communications interoperability was blamed for preventable deaths of New York City firefighters in the World Trade Center collapse.<sup>19</sup> During a mass-casualty incident, reliable communications among on-scene units, triage and transport officers at casualty collection points, responding emergency medical services, and receiving hospitals will be critical. The Coast Guard’s new emergency communication system (Rescue 21) will improve interoperability but will not meet multiagency health system communications requirements during a major incident. Deployable medical and health communications systems are needed that meet interoperability standards being established by the Department of Homeland Security’s Project SafeCom.<sup>20</sup>

## HEALTH SERVICES RESPONSE TEAM PREPAREDNESS AND EXERCISES

DHS agencies, including the Coast Guard, routinely lead or participate in national intermodal terrorism exercises designed to enhance their ability to respond to transportation security incidents. Health Services Maritime Response

Teams members should regularly participate in exercises at the local and regional levels to improve response capabilities, practice mutual aid, and assess operational improvements and deficiencies.<sup>21</sup>

The Coast Guard's existing lessons-learned processes will help it evaluate progress, validate the effort, and direct future resources.<sup>22</sup> HSMRTs should attend formal team training, such as that provided by the DHS-FEMA Emergency Management Institute's Hospital Emergency Response Training for Mass Casualty Incidents in Anniston, Alabama, conducted at its Noble Training Center. HSMRTs should exercise with their sector operational units and command and control cadre, utilizing patient care scenarios developed by federally funded centers.<sup>23</sup> In addition, to enhance interoperability, team members should seek out every opportunity to train with members of other federal, state, and local medical response teams. This would have the added benefit of developing the personal trust that is so critical during an incident response.

Integrating operational HSMRTs into sector operations and exercises ensures that health services providers remain directly tied to Coast Guard warfare and national security, and that they serve in "military essential" positions (positions that require uniformed military personnel). Maintaining military medicine deployment capabilities guards against potential losses of billets from internal or external reviews, as is happening in the Navy.<sup>24</sup> HSMRT exercises and deployments would also serve as a structure to meet the readiness requirements defined by the U.S. Public Health Service Office of Force Readiness and Deployment.<sup>25</sup>

The creation of these HSMRTs will take time. As an interim step, Coast Guard health services support personnel should be identified, trained, and qualified to serve as medical and health experts on existing incident management assist teams. This will introduce the health services community to the operational arena and begin building the awareness and momentum necessary to overcome the serious medical and health deficiencies in the service's mass-casualty response capability.

The Coast Guard has awesome responsibilities for the safety and security of the U.S. maritime community. Since 9/11 the Coast Guard has made tremendous strides forward in establishing maritime security measures to prevent a terrorist attack. While the service's search-and-rescue and mass rescue capabilities, as demonstrated during Hurricane Katrina, are significant and steadily improving, the same cannot be said for the service's efforts to strengthen its mass casualty response capabilities. If the service is to succeed across the full spectrum of maritime consequence management, its planning and preparedness process must use a cross-program approach to incorporate all essential expertise and

necessary perspectives. We must not let the highly visible successes of the Katrina response overshadow the transparent, but significant, first-responder deficiencies that were not taxed during this incident. The Coast Guard has not made adequate use of its health services support community, including the Coast Guard Auxiliary, for planning or interagency communication and coordination, or as a response asset. The Coast Guard must capitalize on its present expertise by fostering an internal cultural change, introducing an operational aspect to the health services' traditional support role.

Alignment of the health and safety program resources and mission priorities with the Department of Homeland Security strategy and Coast Guard *Maritime Strategy* will not be without difficulties.<sup>26</sup> Establishment of all-hazards-capable Health Services Maritime Response Teams would be a tangible step toward that alignment, one that would visibly demonstrate the "value added" of the health services support program to the missions of the Coast Guard. Transforming traditional health services providers into operational first responders will require innovation, "forward leaning," and cultural transformation. Our maritime population is at risk, the responsibility is ours, and the time to act is now.

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#### NOTES

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