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THESIS

**INTEGRATION OF TRAINING CIVILIAN AND
MILITARY DISASTER RESPONDERS**

by

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September 2011

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**INTEGRATION OF TRAINING CIVILIAN AND MILITARY DISASTER
RESPONDERS**

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ABSTRACT

In the years since the September 11 attacks of 2001 and following the Gulf Coast hurricanes and the earthquake in Haiti, research has shown that first responders and medical institutions remain insufficiently prepared to address the increased demands for emergency response during and following major disasters. The threat from terrorism and natural disasters is very real; thus, the medical “system” will face continual challenges. A brutal recent reminder of this was the international outbreak of the H1N1 virus that caused a worldwide pandemic in 2009, resulting in an increased demand for medical services.

In the wake of these disasters Homeland Security Presidential Directives (HSPD) were issued. Among these are HSPD 21, Public Health and Medical Preparedness, which requires the establishment of a realistic strategy at all levels of government and across all sectors in the medical response community to meet the demands of contemporary preparedness. Areas of concern include the education and training for future response. To meet these needs, joint training of responders may enhance the efficiency of currently established training methodologies for national disaster teams, civilian hospital personnel, and National Guard and Reserve military emergency medical personnel training in domestic emergency medical deployment and response.

The research questions to be answered is how can the national policy enterprises design an effective model for the pre-event joint command and control training of disaster responders for both military and civilian operations?

The conclusions reached in this research can be used to shape future national and local training policies and curriculum presented to response agency leaders from civil and military agencies.

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LIST OF ACRONYMS AND ABBREVIATIONS

AOR	Area of Responsibility
BG	Brigadier General
CBP	Customs and Border Protection
CBRNE	Chemical, Biological, Radioactive, Nuclear, Explosive
CCMERFCBRNE	Consequence Management Response Forces
CEO	Chief Executive Officer
CNGB	Chief, National Guard Bureau
COCOM	Combatant Commander
COL	Colonel
COP	Common Operating Picture
CST	Civil Support Team
DHS	Department of Homeland Security
DLA	Defense Logistics Agency
DMAT	Disaster Medical Assistance Team
DoD	Department of Defense
DSCA	Defense Support of Civil Authorities
EMAC	Emergency Management Assistance Compact
EMR	Electronic Medical Record
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
GAO	Government Accounting Office
HS	Homeland Security
HICS	Hospital Incident Command System
ICS	Incident Command System
JDOMS	Joint Director of Military Support
JFO	Joint Field Office
JIACG	Joint Interagency Coordinating Group
JTCE	Joint Training Centers of Excellence
JTFCS	Joint Task Force, Civil Support
MRC	Medical Reserve Corps

NDAA	National Defense Authorization Act
NEDTC	New England Disaster Training Center
NG	National Guard
NGB	National Guard Bureau
NGO	Non-Governmental Organization
NLE	National Level Exercise
NIMS	National Incident Management System
NORTHCOM	United States Northern Command
NPS	Naval Post Graduate School
NRF	National Response Framework
NRP	National Response Plan
SAD	State Active Duty
SECDEF	Secretary of Defense
US&R	Urban Search and Rescue
USCG	United States Coast Guard
USG	United States Government

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I. INTRODUCTION

Despite the passing of 10 years since the 9/11 attacks, the military community, hospitals, and the civilian first responder system have a recurring theme in after action reviews of the responses to disasters there remains a lack of a coordinated national effort. While this continuing lack of coordination can be attributed to a wide range of causes, this research effort explores national policy and civilian medical and military doctrine developed to address the lack of joint training. The goal of integrating these pre-event training regimens is to enhance capacities and capabilities to meet the demands of future responses.

In recent years, the government responses to major disasters, particularly at the national level, have shown a lack of a coordinated command and control effort during the emergency. As discussed in the *2010 Quadrennial Homeland Security Review* (QHSR) (DHS, 2010) report, by their very nature, disasters occur locally, but resident capabilities can easily be overwhelmed or reach a point of culmination in events of significant magnitude. In such situations, a unified effort is required to ensure rapid, integrated response to save lives, protect property, and mitigate further damages.

During large-scale disasters, military personnel are often called upon to backfill or augment civilian responders and medical professionals who mounted the initial response; however, integrating military responders into a civilian-led response is often unsuccessful. The presence of diverse and un-integrated support networks among military and civilian healthcare responders hampers response. As is often the case, each response organization functions under disparate regulations or standards for civilian preparedness that can differ from those of military responders. The presence of barriers, such as the lack of common vocabulary between civilian and military medical responders, prevents effective responses.

National level policy directives after September 11, 2001, outlined a new direction for preparedness. For example, *Homeland Security Presidential Directive 21: Public Health and Medical Preparedness* recognizes that the response functions of public

health and medical preparedness are intended to integrate all levels of government (White House, 2007). Areas of concern raised by emergency response agency leaders include pre-event education and training of both military and civilian responders (M. Zanker, personal communication, June 18, 2011).

During major events, civilian medical professionals and administrators of health care facilities are often faced with decisions about how to care for patients (including when and how to evacuate patients if medical facilities become unable to support adequate care), what treatment to provide, or what services may be required. Military and civilians responder teams can and must be working together during these events to save lives.

The Government Accountability Office (2006) has studied how these health care systems responded during Hurricanes Katrina and Rita and explored the challenges involved in evacuating vulnerable populations, including those in hospitals and nursing homes. In the initial response to Hurricane Katrina, high numbers of acutely ill and injured people required evacuation from the city of New Orleans. The flooding had destroyed the medical delivery system in the city and the National Disaster Medical System (NDMS) had been deployed to support this evacuation.

A reoccurring theme in after-action reviews of the responses to disasters is that there remains a lack of a coordinated national effort. While this failure of coordination can be attributed to a wide range of causes, this research effort explores national policy and civilian and military doctrine developed since the September 11, 2001, attacks.

A. PROBLEM STATEMENT

There is an awareness that military and civilians responder teams can and must be working together. The National Alliance for Integration of Civilian Military Domestic Disaster Medical Response concluded that Hurricane Katrina exposed systemic civilian-military coordination problems (Cannon, Fuka, Paturas, & Smith, 2007). First responders, military personnel, and medical institutions remain insufficiently prepared to coordinate their disaster response operations following a terrorist attack or disaster due to the lack of

joint pre-event training and practice. This issue was recognized as a problem for the state of Connecticut and the realization that this may be a national problem.

Participation in an environment designed to train personnel, reinforce these skills, and integrate clinical, logistical, and leadership skills in a collaborative atmosphere can strengthen individual and group skills in support of real time disasters. While there has been a slow evolution of the organizational culture toward joint training for civilian and military responders, such training is still relatively rare. Further study is required into the obstacles that hamper joint training of both civilian and military disaster response personnel.

B. RESEARCH QUESTIONS

In the years since the attacks of September 11, 2001, the military community, hospitals, and the civilian medical first responder system have failed to integrate fully their pre-event training regimens to enhance future responses. The research questions to be answered are:

1. Will interagency training integration provide the basis for enhancing national disaster planning efforts?
2. How can we design an effective model for the pre-event joint coordination-training program for medical disaster responders from both the military and civilian medical sectors?
3. How can we change the cultural mindset of military and civilian leaders to include pre-event joint coordination training of disaster responders into their drill and exercise planning?

C. BACKGROUND

Throughout the history of the country, outbreaks of infectious disease and disasters have caused death and destruction. A recurring theme is a lack of a coordinated national effort to confront these challenges. The nation's military was established in the Constitution to provide for the defense of the nation from all enemies' foreign and domestic. In the past 50 years, the military has taken on a new roles requiring enhanced support for civilian authorities during times of crisis. The following topic areas are relevant to this research:

1. Uncoordinated disaster responses, which lead to a delayed response.
2. Command and control
3. National strategic planning needed to assure consistent service delivery
4. Defense support to civilian authorities provides additional resources
5. Obstacles to integration include outdated federal and state laws
6. Joint training environment for consistent education of all responders
7. Exercise and evaluation

D. LITERATURE REVIEW

This research effort explored current national policy and civilian and military doctrine related to medical response and recovery to disasters developed since the September 11, 2001, attacks. This literature review groups findings into relevant subject areas including: uncoordinated disaster response, national health and medical strategic planning, defense support to civilian authorities, obstacles to integration that include outdated laws and training environments providing for consistent education of all responders

1. Uncoordinated Disaster Responders

In response to these disasters, military units, first responders, and medical institutions have worked diligently to plan for provision of services. A lack of coordination, however, has hampered these responses.

a. Response Failure to Katrina

Former White House advisor Francis Townsend wrote in a federal report, entitled *The Federal Response to Hurricane Katrina, Lesson Learned*, that there were several failures in the response of several federal agencies. According to Townsend (2006, p. 4), the nation must do a much better job of preparation and planning, to improve the response. The report further blamed a lack of communications between emergency responders and the public, which during the crisis added to the loss of life and destruction of property (Townsend, 2006). The current system for homeland security does not

provide the necessary framework to manage the challenges posed by twenty-first century catastrophic threats. The preexisting framework of local, state, and federal resources cannot anticipate and overcome all challenges in a crisis.

The Townsend report stated further that, active duty military and National Guard “operations were not coordinated and served two different bosses, one the President and the other the Governor” (Townsend, 2006 p.2). In after action reviews of the response, one of the recognized failure were Command and Control (C2).

The National Response Plan’s Catastrophic Incident Plan was not implemented, which led coordination issues between Department of Defense (DoD) resources and the Federal Emergency Management Agency (FEMA) and the state of Louisiana. This slowed the response of active duty personnel and equipment. The Townsend report also found that once National Guard, Coast Guard, and DoD response operations were begun, they provided good support to state and local officials. This report also praised the efforts of active duty forces, including the Coast Guard, as one of the only federal departments that possessed real operational capabilities to translate Presidential decisions into prompt, effective action on the ground (Townsend, 2006, p. 5).

This was point was further emphasized in a 2006 military news article entitled “The Army Response to Hurricane Katrina” (Berthelot, 2006).

By the time Katrina made landfall on August 29, 2005, America’s military was mobilizing for emergency response. Almost 10,000 National Guard troops were on the ground in Louisiana and Mississippi. The commander of the First Army, Lieutenant General (LTG) Russell Honore, who had experience with flood and hurricane relief, realized that the storm would make landfall along the border of two states, each falling under the area of responsibility of different chains of command of both the Army and the Federal Emergency Management Agency (FEMA). Concerned that command and control would become an issue, he requested that the Northern Command (NORTHCOM) establish a joint area of responsibility. NORTHCOM activated its battle staff when the hurricane made landfall and selected LTG Honore to head Joint Task Force Katrina with First Army in the lead and Fifth Army in support.

Several federal agencies have reviewed the issue of DoD support during disasters. The GAO (2006) report GAO 06-643 analyzed DoD civil support guidance and

plans and met with DoD and FEMA officials regarding the support that civilian authorities may request during a catastrophic incident. This GAO report concluded that DoD capabilities must be better identified and integrated into the nation's response plans.

A Congressional report entitled *A Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina* (U.S House of Representatives, 2006) explored the role of military assets and personnel as one facet of this response. The report found that the military played an invaluable role but coordination was lacking (U.S House of Representatives, 2006). There has been a slow evolution of the organizational culture of both civilian and military responders. These cultural barriers can be overcome by creating a joint environment where responders and medical professional can train side by side to form a cohesive team during actual response.

A report commissioned by U.S. Northern Command compiled by the Yale New Haven Hospital Center for Emergency Preparedness entitled *Strategies and Programs to Integrate Civilian-Military Domestic Disaster Medical Response for Homeland Defense* concluded that both the military and the civilian sectors have significant resources, which may be mobilized in the event of an emergency or disaster (2007). Unfortunately, their respective organizational structures and lack of integration with each other have the unintended consequence of an ineffective mass casualty response, adding to the loss of life.

An example of this is CT-1 Disaster Medical Assistance Team (DMAT) personnel following their federal deployment after Hurricane Ike reported lack of coordination. Former team Medical Officer (R. Kamin, personal communication, April 13, 2011) reported that members of the DMAT team had been integrated into preexisting response operations run by members of a military unit. Kamin also reported that it was difficult for DMAT personnel to provide direct patient care while learning the command and control and logistics of the United States Army medical unit operating at the disaster site.

A report release by the Institute of Medicine entitled, *The Future of the Public's Health in the 21st Century* (2002), presented a comprehensive framework for integration of government public health agencies, working with multiple partners from the public, military, and private sector. The report highlights that an effective public health system that can assure the nation's health requires the collaborative efforts of a complex network of people and organizations in the public and private sectors (Institute of Medicine, 2002). This includes an integration of operational policies and practices on the part of public health, military, and response agencies at the national, state, and local levels.

2. Command and Control

All incidents start locally and end locally and ultimately the governor of the affected area is in charge of the response. It is rare, other than in large-scale events, that the President directs forces to provide federal support to the states, without a request for assistance from the governor. In every disaster response, the governor retracts control of his or her National Guard personnel under the direction of the State Adjutant General.

In the area of the hospital and health care systems, the management structures resemble those of military units. It is a top-down management hierarchy with Chief Executive Officer (CEO) providing the Command and Control (C2) for the organization. Each section of both the health care delivery and disaster response system are a complex adaptive system. One sub-specialty relies on the next to assure a continuity of care for each patient.

a. Marine Corp Command and Control

Military units are accustomed to operating under strict operational policies with strong Command and Control of personnel. An example of the military command and control doctrine is published in the U.S. Marine Corps Command and Control manual for officers (United States Secretary of the Navy, 1996). This manual describes how Marines can reach effective decision-making and implement how to take actions faster during any conflict (United States Secretary of the Navy, 1996). This manual

represents a commitment by the Marine Corps to create a cultural shift in the way its leaders deal with the challenges of command and control in the digital age (United States Secretary of the Navy, 1996). It is designed for application across the full range of military actions from humanitarian assistance on one extreme to general war on the other. The skills depicted are to apply equally to all members of the Marine Corp from small-unit leaders to senior commanders. It sets the culture for conduct amongst all members of the Marine Corp whether engaged in war fighting or peacetime activities. An example of strictly adhered to chain of command is depicted in organizational chart for the 14th CST:

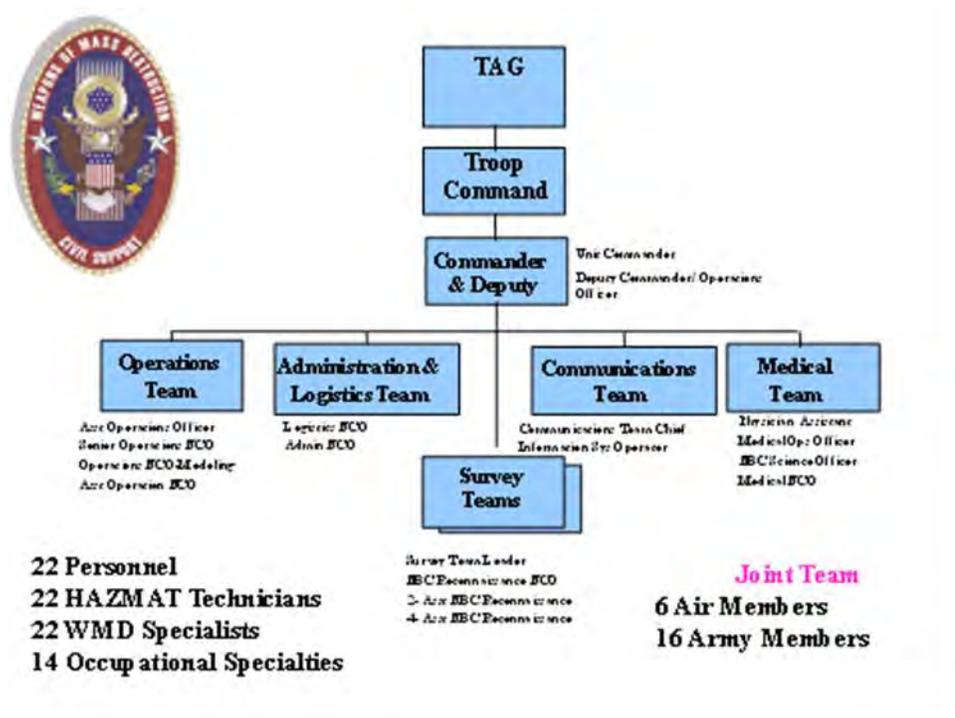


Figure 1. Overview of CT National Guard (From Schulthess, 2011)

b. Adaptive System

The delivery of disaster response and austere medical care are affected by the leadership culture of the agency or organization from which the personnel hail. The way in which personnel are oriented to their organizational environment by agency leaders is a complex adaptive system. During a disaster, the chaotic state has no

discernible order (Bellavita, 2006). There are no patterns. When lives are at stake, there is no time to wait for systems to organize themselves. Stability may have to be imposed through knowledge, by authoritarian response, or by charismatic leadership. In contrasting the military and civilian disaster responders, the command and control of personnel is a key fact in mission success and the safety of responders.

c. Civilian Command and Control

Civilian first responders routinely use the incident command system (ICS) as their C2 structure for response. ICS is a standardized, on-scene, all-hazards incident management approach. It was a result of the incident management problems encountered by wild land firefighters battling several large fast moving fires in the early 1970s. The Federal Emergency Management Agency (FEMA) further defines ICS as a system which:

1. Allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
2. Enables a coordinated response among various jurisdictions and functional agencies, both public and private.
3. Establishes common processes for planning and managing resources. (FEMA, 2011)

ICS is flexible and can be used for incidents of any type, scope, and complexity. ICS allows its users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents.

ICS Organization

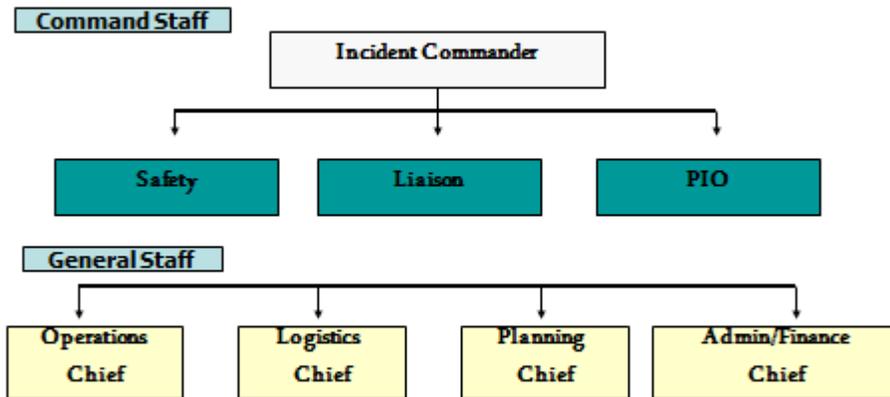


Figure 2. ICS Command Organizational Chart (From FEMA, 2011)

d. Hospital Command and Control

Hospital personnel use a modified version of ICS called the Hospital Incident Command System (HICS). HICS is a methodology for using ICS in a hospital/healthcare environment. The California EMS Authority (2006) developed this system. It was designed to assist hospitals in improving their emergency management planning and response. The system is tailored to the environment in which these medical providers operate including hospitals and other health care setting. The overarching goal of this program is to improve health care facilities emergency management planning and response capabilities for both planned and unplanned events. HICS and ICS both are designed to work within the National Incident Management System (NIMS). NIMS guides government, nongovernmental organizations, and the private sector partners on a systematic approach to guide departments and agencies at all levels to work collaboratively during disaster responses.

3. Data Sharing

a. Patient Care Records

One example of an obstruction to response that transcends both military and civilian operations involves how the documentation of patient's care is generated and kept. This documentation ranges from simplified paper and pen records to Web-based Electronic Medical Records (EMR). The collection of patient care data is also conducted in a variety of fashions across each discipline, including an electronic format based on organizational driven proprietary software platforms as well as in standard paper formats that comply with federal record keeping laws, such as the *Health Insurance Portability and Accountability Act* (HIPAA). Enacted in 1996, the law outlines how the civilian medical system handles personal health information. The burden of documentation for military care in a combat situation is much less than in the civilian medical system.

b. Role of Medical Intelligence

In addition to C2, the concept of sharing of intelligence among individuals of different agencies and disciplines is a critical component of response. The collection processing and sharing of situational awareness data has a direct impact on mission success. Each organization both military and civilian has an information technology area, which dictates in what formats and media that agency data is collected and shared. The public health and health care system is both a consumer of and contributor to this intelligence system in support of situational awareness.

The National Center for Medical Intelligence (NCMI) is a renaming of a pre-existing agency within the Department of Defense. On March 20, 2009, James R. Clapper, Under Secretary of Defense for Intelligence, instituted DoD Instruction Memo Number 6420.01. The memo defined these efforts:

There will be a unified defense community for medical intelligence activities; those activities will be executed in a coordinated and coherent manner to effectively respond to U.S. intelligence priorities in support of

national security objectives, and in accordance with all applicable laws, Presidential directives, DoD issuances, and Director of National Intelligence (DNI) guidelines. (DoD, 2009)

This new agency is based at Fort Detrick, Maryland and was formerly the Armed Forces Medical Intelligence Center (AFMIC). Its new mission is to “track and assess the full range of global health issues for the DOD, specifically monitoring and analyzing health events that could negatively impact the health of U.S. military and civilian populations” (DoD, 2009).

4. Role of NORTHCOM

Federal troops may be called in to assist states when local and state resources are overwhelmed, as was concluded in the retrospective review of the response to Hurricane Katrina (Townsend, 2006, p. 5). The affected state failed to keep up with size and scope of the event. Based on the nature of the federal troops, they usually have very little pre-event interaction with civilian leadership and local infrastructure, which hampers response.

After September 11, 2001, the integration of military personnel was so important to the nation that, in April of 2002, President Bush signed an authorization establishing the U.S. Northern Command (USNORTHCOM). USNORTHCOM was established to provide command and control of DoD homeland defense efforts and to coordinate defense support of civil authorities. USNORTHCOM was to organize and position DoD assets to meet the emerging threats facing the nation. One of its primary missions is to provide military support to civilian authorities.

Despite this mandate to NORTHCOM, coordination problems still exist when both military and civilian responders operate at the same incident. The need continues to exist for a strategic national plan for response.

DSCA was also outlined in a presentation on April 5, 2011 to the Senate Armed Services Committee during their review of the fiscal year (FY) 2012 budget request for future years Defense Programs. In testimony that was presented by U.S. Navy Admiral James Winefeld, the commander of U.S. Northern Command Admiral Winefeld opened

his remarks by saying that he was very encouraged by the strong partnership that USNORTHCOM has with the National Guard; they are essential to operational success across the full spectrum of missions (Winefeld, 2011). The National Guard units are currently developing additional capabilities to take on a much larger role in support of consequence management in the aftermath of a chemical, biological, radiological, or nuclear attack. He went on to say that, North America faces a changing world that presents us with many challenges (Winefeld, 2011). These include violent extremists, proliferation of weapons of mass destruction, and rogue nations.

As part of its strategic planning effort, USNORTHCOM published its *Pandemic Flu Response Plan* (Reale, 2011). It looked at the complexity of the pandemic environment that USNORTHCOM might have to respond in. The plan examined how USNORTHCOM was structured and positioned to respond to an infectious disease outbreak in its area of responsibility (AOR). USNORTHCOM headquarters is organized in the traditional military hierarchal staff structure consisting of directorates based on staff functions. This mindset is based on the various mission sets of DoD, which includes “force readiness” (Lieutenant Colonel (LTC) J. Reale, personal communication, April 1, 2011).

These mission statements of DoD address the ability to project force and capabilities in order to deter and defeat any enemy force. The mission of USNORTHCOM is to conduct homeland defense and civil support operations within the assigned area of responsibility (AOR) to defend, protect, and secure the United States and its interests. It is a unique mission for a military organization because it takes a defensive posture and requires a supporting role to civilian agencies.

This places USNORTHCOM personnel and leadership in new and uncharted waters. Reale concluded that it is the first time in many of the military commander’s careers that they must deal with civilian agencies, politicians, and political appointees (LTC J. Reale, personal communication, April 1, 2011). They have now must have additional direct interactions with state emergency managers and emergency management agencies, FEMA, DHS, and many other federal, state, and local agencies and politicians (LTC J. Reale, personal communication, April 1, 2011).

a. Dual Status Command Training

To avoid future confusion, the National Guard Bureau and NORTHCOM have adopted a new concept called contingency dual status command. NORTHCOM has been certifying National Guard Commanders to fill a dual command role when federal troops are deployed to a state while providing support to a response. In the event of a large-scale event, the certified National Guard Commander is given temporary federal statutes under U.S. Code Title 10 to command federal and state troops in a dual fashion with their respective federalized counterparts acting as their deputies. This has been shown to be effective during the preparations for the large domestic events such as the G8 Summits and National Political Conventions.

In addition, the National Guard has created a joint force headquarters in each state to insure that domestic operations are coordinated between the Air and Army Guard units. As part of this coordination effort, the National Guard Bureau (NGB) processes all requests for National Guard forces requested through the Emergency Management Assistance Compact (EMAC) process for intra-state response.

Engaging the partnerships of agency leaders while engaged in interagency and organizational response is essential to preparedness. These preparedness activities must be conducted well in advance of an incident response (Colonel S. Gilbert, personal communication, April 14, 2011). This will be accomplished by a combination of planning, resources, training, exercising, and organizing to build, sustain, and improve operational capabilities. C2 is layered across all supporting capabilities and agencies at federal, state, and local levels allow for planning together in the periods between incident responses. Each person brings a distinct learning style to individual and group interactions. In the research on group interactions, Stewart Tubbs writes that strategies for effective communication and collaboration in a group allow teams to attain great potential (2007, p. 102). By sharing interpersonal intelligence, each team member can help bring the group together by teaching cooperation to achieve group objectives.

5. National Strategic Planning

a. National HLS Strategy 2007 and 2011

The 2007 National Strategy for Homeland Security recognizes the need for military involvement in homeland defense and security:

Our Nation's armed forces are crucial partners in homeland security. Our active, reserve, and National Guard forces are integrated into communities throughout our country, and they bring to bear the largest and most diverse workforce and capabilities in government to protect the United States from direct attacks and conduct missions to deter, prevent, and defeat threats against our Nation. (HSC, 2007, pp. 50–51)

b. HSPD-21

In the wake of these disasters, the nation attempted to establish a realistic strategy at all levels of government. One of these national level policies, which outlined a new direction for preparedness, is *Homeland Security Presidential Directive 21: Public Health and Medical Preparedness* (White House, 2007). It recognizes that the functions of public health and medical preparedness and response are designed to integrate all disciplines. Areas of concern raised by emergency response agency leaders include education and training of both military and civilian response leaders.

c. Presidential Policy Directive-8

On March 30, 2011, President Obama issued *Presidential Policy Directive/PPD-8: National Preparedness*. This new policy directive was designed to strengthening the security and resilience of the United States. It reinforces that national preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens (White House, 2011, p. 1).

6. Defense Support to Civilian Authorities

Defense Support to Civil Authorities (DSCA) is defined as the provision of support by all branches of the military to civil authorities as directed by the Secretary of

Defense (SECDEF). The constitutional issue of states' rights influences the use of this military support as they apply to the handling of disasters. This question is beyond the scope of this research effort.

DSCA support is available to all 50 states, the District of Columbia, the Commonwealth of Puerto Rico, and U.S. territories and possessions. This military assistance can be given during civil or public health emergencies arising during peace or wartime. These incidents include terrorist threats or attacks, major disasters, and other emergencies. The DSCA mission is now a part of military doctrine as a core competency for military personnel across all branches.

An example of success resulting from the new DSCA mission is the integration of National Guard Joint Task Force Civil Support Teams (CST). In the state of Connecticut, the 14th CST is an integral part of the state's homeland security prevention and response strategic plan.

a. History of the Role of the United States Military

The mission of the Department of Defense is to provide for the common defense of the nation, its citizens and its allies and to protect and advance U.S. interests around the world. To accomplish this mission, the Department maintains trained forces ready to respond to threats to U.S. security arising anywhere on the globe. These same military forces that help shape the international environment can also respond quickly to threats to U.S. security when crises arise.

Throughout the 370-year history of the National Guard, both nationally and on a state level, personnel have provided support to civilian authorities. Examples of this support in Connecticut include a response in 1984 where military personnel assist local responders during extreme flooding on the Connecticut River and during a large-scale labor action against over 200 nursing homes in Connecticut (Colonel S. Gilbert, personal communication, April 14, 2011). Members of the 118th Medical Battalion were trained and standing by to provide staffing at many facilities to assure patient care and safety was not interrupted by the strike.

b. 1950 Civil defense Act

Starting in the 1950s, the government recognized the need for military support of civilian authorities in times of crisis. Passed in 1951, the Federal Civil Defense Act was intended by Congress to provide “a system of civil defense for the protection of life and property in the United States from attack and from natural disaster” (Buchalter, 2007). Since that time, this concept has undergone several revisions.

c. Title 10 and 32

The Department of Defense (DoD) executes its authority and responsibilities as outlined in the Federal Code. Title 10 covers the roles for the active duty military, as well as the reserve components. The roles and responsibilities of the active duty National Guard are outlined in Title 32 of the Federal Code. Both are broadly based and supported by volumes of directives and policies at DoD and NGB. These are also influenced by the constitutional issue of states’ rights as they apply to the handling of disasters. This question is beyond the scope of this research effort.

d. Stafford Act

The in 1994 the *Robert T. Stafford Disaster Relief and Emergency Assistance* law was enacted. This allowed active duty military personnel and equipment to support domestic consequence management operations. This act was updated again in 2004 to allow for the use of National Guard forces in support of homeland defense activities.

e. Defense Logistics

Military units possess large numbers of well-trained and well-equipped personnel for their war fighting missions. These capabilities have versatility for supporting domestic disaster operations. They are supported by large logistics and planning components. This includes traveling with both food and potable water for all missions. The Defense Logistics Agency (DLA) provides this logistical support. The

mission of the DLA is to provide nearly 100 percent of the consumable items America's military forces need to operate from food, fuel, and energy, to uniforms, medical supplies, and construction and barrier equipment (DLA, 2010).

7. National Response Framework

Military support to civilian authorities is an integral part of the National Response Framework (NRF) published by the Department of Homeland Security (DHS). The National Response Framework is a guide that details how the country conducts all-hazards response (FEMA, 2008). It is a scalable system to deal with small incidents scalable up to the large-scale catastrophes.

The NRF identifies the key response roles and structures to organize a national response. It describes how cities, towns, states, and the federal government will interact with private sector and nongovernmental partners (FEMA, 2008). The goal of the NRF is to put in place structures and training to ensure a unified national response. The plan also includes Emergency Support Function Annexes. It delineates a unified command and coordination amongst all responding and supporting agencies, local, state, and federal within a Joint Field Office.

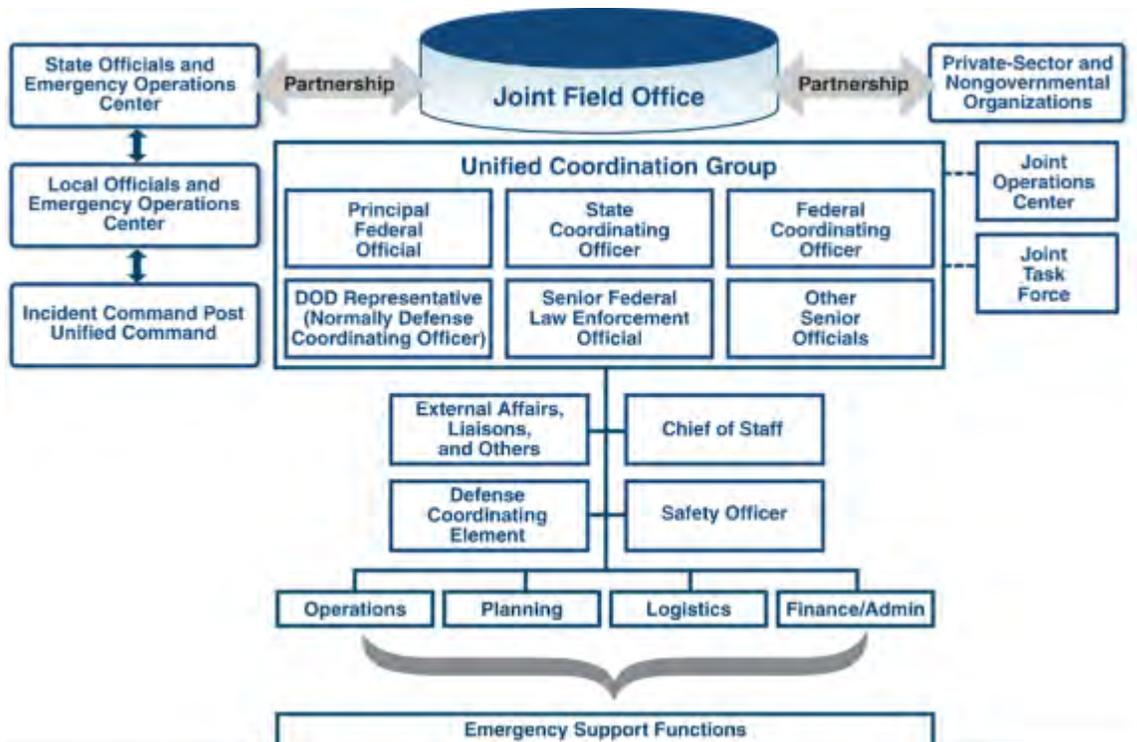


Figure 3. Joint Field Office Table of Organization (From FEMA, 2008)

8. Obstacles to Integration

Even with the organization of USNORTHCOM, the use of active duty military personnel in domestic responses faces obstacles. Coordination problems continue to exist that need to be overcome. These include legal, organizationally based cultural differences, chain of command structures, and varied working environments. A long-standing legal obstacle is the *Posse Comitatus Act*, a federal law that limits the use of active duty personnel in domestic incidents. This act has traditionally been viewed as a major barrier to the use of U.S. military forces in planning for responses in the homeland (Colonel R. Cody, personal communication, April 14, 2011).

The role of these DoD troops is governed under a federal law called the *Posse Comitatus Act* (which means the “power of the county”). Research conducted by the U.S. Army Judge Advocate General’s Office resulted in a position paper, entitled *The*

Myth of Posse Comitatus Act, which found that this act has traditionally been viewed as “a major barrier to the use of U.S. military forces in planning for homeland defense” (Triebilock, 2006). The original intent of the act, which was passed in 1878, was to remove the Army from domestic law enforcement duties. As the role of DoD assets have been called into service for domestic emergencies over the past thirty years the intent of this act has changed. Triebilock further concluded that, since 1980, Congress and the president have significantly eroded the prohibitions of the act in order to meet a variety of law enforcement challenges. This new role includes drug interdictions and, after 9/11, the staffing of Civil Support Teams trained and equipped as hazardous materials units.

a. Agency Culture

The institutional culture of an agency directly affects the agency and its personnel. This culture can have a direct impact on disaster response. For example, treating blast injury patients in a well-lit and heated emergency room is much different than treating the same patients in the middle of a disaster zone. The environment that personnel will eventually function in influences the way in which agency leaders initially train personnel in response. Because of this research, an important priority for the national preparedness planning effort in the next several years is for the public health, health care system, military, and homeland security to adopt joint multi-disciplinary prevent training programs.

9. Joint Training Environments

Participation in an environment designed to learn, practice, and integrate clinical, logistical and leadership skills in a collaborative atmosphere can strengthen individual and group skills in support of real-time disasters. A Naval Postgraduate School (NPS) thesis, entitled *Enhancing Unity of Effort in Homeland Defense Homeland Security and Civil Support* through interdisciplinary education (2010), explored the topic of joint training. The following conclusion was reached: “...by integrating a variety of strategies and reports, this research acknowledges that the collaborative capacity built via multi-

jurisdictional, interdisciplinary education as a method to enhance unity of effort and build a cadre of military and national security professionals” (Church, 2010).

Initial and refresher training in every facet of emergency response and medical care is crucial. Training is the process of teaching or learning a skill or job. Military personnel receive extensive pre-deployment basic preparedness training, which includes self-preservation, job-specific education, and command and control. In contrast, civilian medical professionals concentrate most of their initial and refresher training on specific care delivery actions, such as medication administration, and spend little to no time on command and control or self-preservation. A credo of the U.S. military is “train the way you fight and fight the way you train” (D. McMillan, personal communication, April 7, 2011). The lack of a cooperative pre-event training venue may hamper disaster response—responders and health professions who may be forced to learn each other’s operational procedures while engaged in the response and while focusing on responder preservation logistics such as food and water supplies.

a. Interdisciplinary Coordination

Interagency coordination between agencies of the government at all level is essential. The general public and elected leaders of our nation demand that the entire network of response agencies and disciplines maintains a constant state of readiness to respond. There must be a high degree of routine interaction between both the civilian and military response community. Understanding the procedures and processes of both military and civilian and response agencies is critical to success.

The response to major outbreaks or disasters requires multi-agency communications and coordination before, during, and after an event. An integral theme of the mission statements of nearly all response organization both military and civilian is to protect the lives and property of all of residents and visitors to the nation. As the national continues to enhance its preparedness efforts, interagency collaboration remains a primary focus for enhancing future response.

The nation is beginning to move in this direction with National Level Exercise (NLE) program. The objective of these exercises is to build an integrated federal, state, tribal, local, and private sector capability to manage a catastrophic event and rapidly and effectively respond to and recover from any major disaster that occurs.

Effectively preparing for emergency response takes collaboration. The best plans have little practical impact in a real-world response if emergency and risk coordinators do not work effectively together at all levels of a response. This starts on the ground at the scene of the emergency or outbreak by field teams and transition to collaborating among all levels of local, state, and federal response.

10. Exercise and Evaluation

a. Model Programs

i.) Department of Defense. The Department of Defense has made available to its leaders a wide variety of educational opportunities focus on war-fighting skills. In the new world order and with a changing military mission, these skills have limited transferability. In the wars in Iraq and Afghanistan, the war-fighting mission has now changed to nation building. Military personnel are constantly participating in both individual and collective training evolutions. Military personnel make use of both tabletop and full-scale exercises to enhance their technical and operational skills. The former Connecticut National Guard State Training Officer concluded that as we move forward into the future we must continue to train and exercise in a multi-disciplinary fashion. According to Colonel Steve Gilbert “We need to train with our counterparts to not lose the opportunity to learn each other’s SOP’s” (Colonel S. Gilbert, personal communication, April 14, 2011).

ii.) U.S. Coast Guard. New educational opportunities include programs such as Homeland Security Planning Course, under the direction the U.S. Department of Homeland security that includes personnel from the U.S. Coast Guard and local law enforcement. As the mission, posture has changed, so have the training for military officers these include Joint Staff Training focused on the DSCA mission.

iii.) Public Health Workforce Development. Limited availability of a properly trained healthcare workforce presents another obstacle when responding to disasters. Through presentations and discussions within the health system, leaders' concerns have been raised about the capacity of Connecticut's educational system to meet the state's health care workforce needs, both current and future (General J. Galvin, personal communication, April 6, 2011). A January 2010, State of Connecticut, Allied Health Workforce Policy Board, *Annual Legislative Report* concluded that students entering health care training programs are not adequately prepared for disaster response. Employers need to provide extensive on-site training to new employees. This training must include information on disaster response and preparedness for the institution in which they are working.

11. Kirkpatrick Model of Evaluation

In researching an evaluation process available to validate the effectiveness of these joint military and civilian training, a study published in the *Journal of Homeland Security and Emergency Management*, "A Model for Assessing Public Health Emergency Preparedness Competencies and Evaluating Training Based on the Local Preparedness Plan" (Brand et al 2006). This article used the Kirkpatrick model (developed by Donald Kirkpatrick in the late 1950s) for evaluating the effectiveness of training. A number of researchers have adapted this training model. The basic structure of Kirkpatrick's model has four-levels:

- Level 1 (Reaction)
 - completed participant feedback questionnaire
 - informal comments from participants
 - focus group sessions with participants
- Level 2 (Learning)
 - pre- and post-test scores
 - on-the-job assessments
 - supervisor reports

- Level 3 (Behavior)
 - completed self-assessment questionnaire
 - on-the-job observation
 - reports from customers, peers and participant's manager
- Level 4 (Results)
 - financial reports
 - quality inspections
 - interview with sales manager. (Brand et al., 2006)

a. Adult Learning Styles

In a joint training environment, the students' perception of the need to learn should motivate them to learn. Adult learners come into each educational experience looking for a desired outcome. Arizona Public Health Planner Steven Leib wrote that adults are autonomous and self-directed (2001). The students need to be free to direct themselves. Their teachers must actively involve adult participants in the learning process and serve as facilitators for them. This joint training must leverage these outcomes for the benefit of each student. The strengths and experiences of civilian and military responders must be shared with their counterparts. This training can enhance emergency communication while building effective disaster response leaders.

12. Successful Joint Training Venues Projects

Epidemics of emerging infectious diseases such as SARS, smallpox, and pandemic influenza, have resulted in an increased demand for hospital level medical services. For example, the 2003 Severe Acute Respiratory Syndrome (SARS) outbreak in Canada and China resulted in the closure of several hospitals. Many states have developed alternate care locations including mobile field hospitals to support these responses.

In grant guidance published in 2003 by the U.S. Department of Health and Human Services, Health Resources and Services Administration, National Bioterrorism Hospital Preparedness Program (NBHPP) required each state to develop hospital bed

surge capacity of 500 beds per million of populations. This grant guidance included a deliverable to accomplish this goal (HHS, 2003). The grant work plan had to describe increasing hospital bed capacity to accommodate an increase in admissions from an infectious disease epidemic or disaster over an extended period. It also required how states would provide isolation and quarantine for patients infected with contagious diseases.

The State of Connecticut Department of Public Health led the planning effort to investigate the following four options to address these new hospital surge capacity concerns:

1. Pre-designation of one of Connecticut's 32 acute care hospitals as an infectious disease/quarantine facility.
2. Designation of the acute care hospital that receives the first case.
3. Renovation and utilization of existing state property as an infectious disease quarantine facility.
4. Adaptation and implementation of a mobile field hospital concept.

The development of a mobile field hospital to provide surge and isolation capacity in Connecticut was selected as the most viable alternative. As the plan was evolving, it was recognized that this surge capacity required the support of a multitude of agencies at the local, regional, and state levels. The Connecticut legislature approved public bond funding to procure a full field deployable 100-bed mobile hospital facility and its medical equipment. Funding from the federal Department of Homeland Security and the Department of Health and Human Services was also secured to support this project.

This 100-bed mobile field hospital was designed to serve as a multi-functional facility providing bed surge capacity, isolation capacity, and an emergency/disaster medicine training facility for the healthcare delivery workforce, both civilian and military. The facility is designed to be deployed as a flexible configuration of 25-bed units that can be operated jointly or independently of one another to provide triage and treatment anywhere in the state in the event of a mass casualty or to support an acute care hospital after catastrophic structural or mechanical failure.

This project benefited from a pre-existing partnership with the State Health Department including staff from Acute Care Hospitals; the Connecticut Fire Academy, which assisted with developing training modules and curriculum; and the Connecticut National Guard, which was tasked with providing logistical support to field operations. This collaboration has delivered an impressive record of accomplishment of successful program development, implementation, and exercising since 2008.

Several key training objectives were identified including the need to develop clinical operating and facility management policies and protocols. The training and exercising of both clinical and, logistical personnel capable of facility deployment was also identified. This training requirement was designed to training personnel from a variety of disciplines including military, NDMS, Medical Reserve Corp (MRC), and Community Emergency Response Teams (CERT). All of the staff designated to deploy and support the MFH are required to complete education and training programs focused on discipline-specific core competencies. These include didactic and practical training in preparation to work in this field environment.

It was quickly realized that this multi-disciplinary facility required a unique training venue where a diverse group of response professional could train in real- world environment for future response missions. The mobile field hospital and the delivery of medical care in a disaster were used as the basis for building the New England Disaster Training Center (NEDTC). The mission of the NEDTC is to provide disaster site awareness training for National Disaster Medical System (NDMS) teams as well as emergency responders both military and civilian.

This model is designed to be a national center of excellence for capacity building in emergency response systems. The NEDTC is located at Camp Hartell, in Windsor Locks, Connecticut. This facility is a Connecticut Air National Guard Base support base. Partner agencies in the development of this concept include the Connecticut Department of Emergency Management and Homeland Security, Connecticut Fire Academy, Connecticut DMAT, and Urban Search and Rescue Team (US&R). Funding for this project was provided through a 2004 Defense Appropriation awarded to the Connecticut Air Guard (CTAG).

The NEDTC was built to provide medical and search and rescue war-fighting skills and the ability to apply this training real-world austere situations. Through a preexisting partnership with the CTAG and the NEDTC also provide static training opportunities for civilian personnel in aircraft operations, loading, and safety procedure for both fixed and rotary winged aircraft. The CTAG also provides several types of aircraft for static training including Chinooks (CH47), Blackhawk's helicopters (UH60), and C-21 fixed wing jets, which have a medical mission capability. The facility also has training props to train the following rescue specialties including confined space rescue, structural collapse simulations, rail car rescue operations, and vehicular convoy training.

The leadership of the NEDTC is comprised of both military and civilian personnel. Each of these leaders have a wide variety of educational and real-world experience, including a retired U.S. Air Force General Officer as well as retired officers and enlisted personnel with extensive deployment experience in both international and domestic support missions. The civilian staff includes physicians, emergency medical services instructors, and search and rescue professionals. The Connecticut National Guard's medical assets are used on a regular basis to supplement staffing based upon their availability. The staff also includes staff from two of the state's federally recognized Medical Reserve Corps (MRC).

The educational and training programs developed at the center combine clinical mentoring, programs, procedures, and printed resources along with hands-on equipment training and facility preparations. In addition, physicians, nurses, allied health professionals, including those in laboratory, radiology, respiratory care as well as ancillary support staff. The training will also concentrate a separate educational tract on logistical and operations.

Students are divided into discipline-specific groups for focused training that further defines their functions within the field environment during any disaster event. Through a partnership, the Connecticut Fire Academy and the Connecticut National Guard bases located in the state will serve as additional training and practical skills sites.

A partnership with the Hartford Hospital Simulation Center will provide validated training at all levels to enhance critical medical skills, making use of the latest computer enhanced medical simulation mannequins. These programs are run under the supervision of board certified medical professionals and career educators. Simulation has obvious benefits in all areas of health care including trauma, critical care, anesthesia, obstetrics, nursing, and emergency medicine. It is also being used in implementing and testing clinical protocols and in educational research. This teaching environment provides real-time patient care scenarios at all clinical levels. This can be applied in a variety of settings to enhance staff performance. This partnership between the NEDTC and the Simulation Center provide an additional level of complexity for students. It offers a state of the art training experience in both the clinical aspects of care delivery as well as operating in a controlled environment.

All of the NEDTC student's complete education and training programs focused on discipline-specific core competencies defined by the education standards being developed for disaster operations. The NEDTC provide students with extensive didactic and practical training in preparation to work in the austere field environment. These courses are focused on events and scenarios related to bioterrorism, infectious disease outbreaks, and mass casualty disaster response requiring the integration of multidisciplinary response teams.

Course content includes clinical policies and procedures, handling, and operations of medical equipment, Incident Command System, and communications both on scene and to other agencies including the military. Vehicle convoy procedures, deploying, and restaging response equipment including the MFH is also covered. These programs will include clinical mentoring, along with hands-on equipment training and facility preparations.

Functional exercises related to transporting, setting up, and restaging the facility will occur. The integration of operations with US&R medical components, as well as fire service trench rescue operations, will also be covered. Each training operation is designed to address a specific disaster scenario. Each training evolution will include post-tests and

practical exams to assess knowledge achievement, upon completion of educational programs. Tabletop, functional, and full-scale exercises are being conducted at the NEDTC.

Students are asked to complete an end of course evaluation to assess the effectiveness of the clinical and facility training. The capability of the students to deliver high quality rescue operations and patient care is assessed by evaluators from each discipline. These evaluators recruited from military, police, fire, EMS, and search and rescue professionals. Hospital administrators, clinicians, and quality improvement experts will also evaluate the medical care delivery. Results of these assessments are shared with the individual students, and they used to improve clinical and non-clinical educational and training programs. All drills and exercises will be followed with after action reports, both clinical and operational. These are used by NEDTC training staff as a tool to improvement and to modify the curriculum as needed.

Additional training programs focus towards integrating civilian and military responders into a coordinated emergency response at both the operational, command, and control levels. Key emergency management personnel from regions or states, including: hospital management, key hospital personnel, National Disaster Medical System (NDMS) personnel, Federal Emergency Management Agency (FEMA) representatives, local and state emergency planners, and National Guard Units, will be encouraged to participate in joint educational activities. The NEDTC provides the broadest possible environment for response training in a controlled environment. The NEDTC provides civilian and military participants the opportunity to learn, practice, and integrate clinical, logistical, and leadership skills in order to strengthen individual and group skills in support of real-time disasters.

In the area of physician level education a curriculum has been developed to expose providers to the rigors of working in austere environments. This eight-hour program will provide medical professionals with an overview of disaster response, self-preservation, and how to integrate with other responders such as military personnel, FEMA, and DMAT. The concepts of risk assessment prior to the decision to respond to a disaster site will be explored with students. They will be exposed to rough terrain,

climate, insects, reptiles, and animal dangers. Each student will be given instruction on operational stress management techniques. The physiology of sleep deprivation and fitness for duty will also be covered. Personal hygiene including foot care, hydration, and nutrition will be covered. The appropriate clothing and footwear will be discussed, including how to pack and carry equipment. The final portion will cover meal preparation and potable water testing. This training will help fulfill a recommendation from the National Association of Emergency Physicians that states, “Emergency Medical Services (EMS) authorities should have a lead role in disaster response and collaborate with other appropriate agencies in a unified command structure as determined by the specific disaster. These physicians should participate in the four phases of disaster management for a defined community mitigation, planning, response, recovery” (NAEMSP, 2010, p. 4).

E. METHODOLOGY

The research method employed for this project is a qualitative analysis of data gathered during formal interviews. According to Rubin and Rubin (1995) this qualitative interviewing is a process of finding out what others feel and think about their worlds. The result is to understand the major points of their message and how it compares to this situation. This research was conducted using in-person interviews with military and civilian response leaders from the New England states. The interviewee’s selected represent a broad range of national and international response experience based on their vocations, despite all being from the region. A research question tool using open-ended questions was developed for this study. This method was selected as having the greatest potential to uncover firsthand accounts of success and failure from unit/team commanders who have operated during real-world missions with and without the benefits of joint pre-event command and control training.

Interview candidate’s selection consisted of leadership personnel that engaged in both training and response to disasters. Because of the dynamic nature of these

operational relationships and the lack of an extensive pool of literature, research was primarily accomplished by interviewing selected leadership at interagency operational and policy levels.

This included medical professional, civilian response leaders, and military commanders from both the full time and National Guard ranks. These operational level commanders have extensive experience in joint disaster operations from the following agencies.

- Connecticut Department of Public Health
- Connecticut National Guard
- University of Connecticut, John Dempsey Medical Center
- U.S. Department of Homeland Security, Chief Medical Officer Office
- Yale New Haven Hospital

Background of interviewees may be found in Appendix A.

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II. SIGNIFICANCE

The environment that personnel will eventually function in influences the way in which personnel are indoctrinated to their organizational culture by agency leaders. Each response system begins with command and control. In general, both civilian and military personnel do not know how to request assistance from each other's chain of command. The conclusions reached by this research can be used to shape future national and local training policies and curriculum presented to response agency leaders from both civil and military agencies.

DoD assets and personnel represent the most substantial resource in the United States for consequence management following a catastrophic disaster or outbreak. It is imperative that the military become fully integrated into local and state response planning and exercising. This thesis provides policy proposals, for review by civilian health system leaders, National Guard command staff, and both the Departments of Homeland Security and Health and Human Services, to better integrate future preparedness activities. The product will be an improved pre-event education and training doctrine.

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III. DATA COLLECTION

The research process consisted of personal interviews. Each of the selected interviewees was asked the same set of questions in the same order. The questions were designed to obtain information about the interviewee's experience and knowledge. Each interview was audio taped with the participant's consent. The recorded data was then transcribed. Interview questions encouraged people to talk about a topic without hinting that they should have a particular answer (Leedey & Ormond, 2010, p. 149). The questions, which were asked, were open ended to allow the respondent to share his/her experiences with this researcher. A list of the interview questions may be found in Appendix B.

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IV. DATA ANALYSIS

The interview data was analyzed to identify ways to enhance command and control training and cooperative efforts between military and civilian response leaders. NPS Professor Gail Fann Thomas writes that analysis of the data requires the researcher to create a coding system for the data collected (2006, p. 7). These codes must be related to the topic being researched. As the data points are identified, a specific coding should be affixed to each data point discovered. All data analyzed for this project used a manual color-coded system. Once coded, the data was analyzed to identify themes and patterns. As Thomas suggests, the color codes create a *thematic map* (2011). This mapping provides a visual representation of patterns or similar themes to be drawn from the data. Major themes emerged in the areas of leadership, communications coordination, command, and control.

In reviewing the data, the main themes were evident in the feedback of each interviewee. These were color coded and classified as follows;

- Ethical Decision Making **Red**
- Communications Coordination **Blue**
- Conflict Management **Green**
- Leadership **Orange**

Table 1. Classification of Joint Training Strengths

	Ethical Decision Making	Communications Coordination	Conflict Management	Leadership
LG Blum	2	3	4	1
COL Cody	2	4	3	1
Dr. Galvin	2	3	4	1
COL Gilbert	2	3	4	1

	Ethical Decision Making	Communications Coordination	Conflict Management	Leadership
COL Gross	1	3	4	2
Dr. Kamin	1	2	4	3
LCD MacMillan	2	3	4	1
LTC Schulthess	3	2	4	1
Dr. Zanker	2	4	3	1

V. CONCLUSION

Because of this research, an important priority for the national preparedness planning effort in the next several years is for the public health, health care system, military, and homeland security to adopt joint multi-disciplinary prevent training programs. Our national system of disaster response operations is primarily based with civilian response organizations. It is critical that there be interagency communication and coordination at all levels of government: local, state, tribal, and federal. Each agency must have a mandate to assign interagency liaisons both vertically and horizontally amongst all levels of response. At the federal level, this includes with the Department of Homeland Security (DHS), DoD, CDC, and FEMA.

Interagency coordination between agencies of the government at all level is essential. There must be a high degree of routine interaction between both the civilian and military response community. The response to major outbreaks or disasters requires multi-agency communications and coordination, before during, and after an event. An integral theme of the mission statements of nearly all response organization both military and civilian is to protect the lives and property of all of residents and visitors to the nation. As the national continues to enhance its preparedness efforts interagency collaboration remains a primary focus for enhancing future response.

The nation is beginning to move in this direction with National Level Exercise (NLE) program. The objective of this exercise is to build an integrated federal, state, tribal, and local levels and private sector capability to manage a catastrophic event and to rapidly and effectively respond to and recover from any major disaster that occurs.

The functional exercise offers agencies and jurisdictions a way to test their plans and skills in a real-time, realistic environment and to gain the in-depth knowledge that only experience can provide. Participants will exercise response and recovery functions that are critical to responding to a catastrophic event. Lessons learned from the exercise will provide valuable insights to guide future planning for disasters and other emergencies.

NLE guidance published by FEMA is intended to use a comprehensive evaluation process. These exercises are designed to assess response and recovery capabilities at the local, regional, and national levels. The exercise is designed to validate the following capabilities:

- Communications
- Critical resource logistics and distribution
- Mass care (sheltering, feeding, and related services)
- Medical surge
- Citizen evacuation and shelter-in-place
- Emergency public information and warning
- Emergency operations center (EOC) management
- Long-term recovery. (FEMA, 2011)

A. RECOMMENDATIONS

The primary question explored by this thesis is how can we design an effective model for the pre-event joint command and control training of disaster responders both military and civilian. The recommendations are as follows:

1. Recommendation 1

The development of a national training and educational platform must move forward. This new policy doctrine would be intended to promulgate a multi-functional, cross-disciplinary curriculum. The center piece of which would be regionally based Joint Training Centers of Excellence (JTCE) for national disaster teams, civilian hospital personnel, National Guard and Reserve military emergency medical personnel training in domestic emergency medical deployment and response. The goal of the TCE must be to provide civilian and military participants the opportunity to learn, practice, and integrate clinical, logistical, and leadership skills in order to strengthen individual and group skills in support of real time disasters. The center must focus on deployment training of National Disaster Medical teams and Urban Search and Rescue (US&R) teams as well as military support units such as CST. Each must provide a venue for the integration of aero

medical assets and personnel. The goal of the TCE will be to provide the broadest possible environment for training. These facilities must serve as an effective emergency preparedness education and training tool integrating civilian, governmental, and military experience and expertise for local, regional, and national audiences.

2. Recommendation 2

This concept of responder integration is beginning to move forward as the CDC published its *2011 Public Health Emergency Preparedness Grant Guidance* in April of 2011. The overall objective of the new cooperative agreement is to set standards for public health preparedness planning, organize and structure efforts, and define benchmarks for success. (CDC 2011) The CDC has worked closely with a variety of preparedness partners on all levels to combine multiple policies and guidance documents. These new performance standards are being put into place to monitor program improvement while encouraging stakeholder engagement. The guidance for each of the 15 capabilities will consist of a definition, followed by critical functions, essential tasks, and resource elements necessary to meet said capability. The 15 capabilities include the following:

5. Medical supplies management and distribution
6. Volunteer management and recruitment
7. Medical surge
8. Emergency operations coordination
9. Responder safety and health
10. Medical countermeasure dispensing
11. Fatality management
12. Non-pharmaceutical interventions
13. Mass care
14. Public health surveillance and epidemiologic investigation
15. Public health laboratory testing
16. Emergency public information and warning
17. Information sharing
18. Community preparedness
19. Community recovery. (CDC,2011)

3. Recommendation 3

The *National Response Plan* was originally released in 2007 by the Department of Homeland Security as a multi-disciplinary, all-hazards plan intended to establish a single, comprehensive framework for managing domestic incidents. It was revised in 2008 as the *National Response Framework* (NRF) (FEMA, 2008). It defined key roles and structures for response. It organizes the way that this nation responds to emergencies and disasters. A key component of future national planning efforts must include pre event joint training. It must be focused on the coordination of military assistance in its role to supplementing state, local, and tribal response to disaster needs.

B. FURTHER RESEARCH

Further research needs to be conducted in the areas of interagency cooperation and coordination and pre-event joint training for disaster response. Some specific areas include: command and control.

C. CHALLENGES

The corner stone of any national disaster response planning effort is support from interagency partners and the community being responded to in times of crisis. This includes not only fiscal support but also support of policies and procedures. High value must be placed on the inclusion of all people within the community. Every attempt must be made to make disaster services ready and available to provide a high level of service.

Strong leaders in an organization must have a strong moral value system. A strong willed leader will not bow to external pressures. Leaders must follow highly ethical standards in their conduct each day. Leadership takes courage and a willingness to change the status quo. Leaders' biggest challenge is motivation of the staff to continue to work toward fulfilling their agency's mission. A team can only be effective when it works together for mutual benefit of all. Leaders must be willing to listen and accept

suggestions staff at all levels. An agency is only as good as its staff, and its staff is only as good as its leader. These leadership skills can be developed and enhanced by participation in joint pre-event response training.

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LIST OF REFERENCES

- Agency for Healthcare Research and Quality (2007). *Assessment of self-evaluation training for the medical reserve*. Retrieved July 15, 2010, from <http://www.ahrq.gov/about/evaluations/medreserve/medres2.htm>
- Armed Forces. (n.d. a). *U.S. Code Title 10*. Retrieved January 7, 2011, from http://www.law.cornell.edu/uscode/html/uscode10/usc_sup_01_10.html
- Armed Forces. (n.d. b). *U.S. Code Title 32*. Retrieved January 7, 2011, from http://www.law.cornell.edu/uscode/html/uscode32/usc_sup_01_10.html
- Bea, K. (2005). *Federal Stafford Act Disaster Assistance: Presidential declarations, eligible activities, and funding*. Washington, DC: Congressional Research Service.
- Bellavita, C. (2006). Changing homeland security: Shape patterns, not programs. *Homeland Security Affairs* 2(3). <http://www.hsaj.org/?article=2.3.5>
- Bergeson, J. (2009). *State of Connecticut strategic national stockpile operations plan* (2nd ed.). Hartford, CT: Connecticut Department of Public Health.
- Berthelot, R. (2006). *The Army response to Hurricane Katrina*. Retrieved January 9, 2011 from <http://www.army.mil/-news/2010/09/12/45029-the-army-response-to-hurricane-katrina/>
- Blum, S. H. (2004, May 24). Author's notes from keynote address, Military Strategy Forum, Washington, DC.
- Bowman, S.. (2006). *Homeland Security: Establishment and Implementation of the United States Northern Command* (CRS Code RS21322). Washington, DC: Library of Congress.
- Brand, M., Kerby, D., Elledge, B., Johnson, D., & Magas, O. (2006). A model for assessing public health emergency preparedness competencies and evaluating training based on the local preparedness plan. *Journal of Homeland Security and Emergency Management*, 3(2).
- Buchalter, A. R. (2007). *Military support to civil authorities: The role of the Department of Defense in Support of Homeland Defense* (Federal Research Division No. 1). Washington, DC: Library of Congress.

- Cannon, C. M., Fuka, D. M., Paturas, J. L., & Smith, S. P. (2007a). *Strategies and programs to integrate civilian-military domestic disaster medical response for homeland defense*. New Haven, CT: Yale New Haven Hospital Center for Emergency Preparedness.
- Cannon, C, Fuka D., Paturas J, Smith S. P. (2007b) Developing an integrated civilian-military model for healthcare emergency response planning. *Journal of Business Continuity and Emergency Preparedness*, 1(4).
- Center for Disease Control and Prevention. (2011). *Public health preparedness cooperative agreement grant guidance*. Retrieved June 15, 2011, from <http://www.cdc.gov/phpr/coopagreement.htm>
- Church, K. K. (2010). *Enhancing unity of efforts in homeland defense, homeland security, and civil support through interdisciplinary education*. Master's thesis, Naval Postgraduate School, Monterey, CA.
- Connecticut Allied Health Workforce Policy Board. (2010). *Annual legislative report: State of Connecticut Legislative report*. Hartford, CT: Connecticut Department of Public Health.
- Dagostino, D. M. (2010). *Homeland defense: DOD can enhance efforts to identify capabilities to support civil authorities during disasters* (GAO-10-386). Washington, DC: Government Accountability Office.
- Defense Logistics Agency. (2010). *Mission*. Retrieved July 3, 2010, from <http://www.dla.mil/ataglance.aspx>
- Department of Defense. (2009, March 20). *Instruction memo # 6420.04*. Washington, DC: author.
- Department of Homeland Security. (2008). *National response framework*. Washington, DC: author.
- EMS Authority California. (2006). *Hospital incident command system*. Retrieved August 11, 2010, from <http://www.emsa.ca.gov/HICS/files/faq.doc>
- Federal Emergency Management Agency. (2005). *Federal Emergency Management Agency fact sheet: NIMS Integration Center NIMS Incident Command System (ICS)*. Retrieved July 29, 2011, from <http://www.fema.gov/femaNews/releaseSearch.doc>
- Global Security. (2008). *Weapons of mass destruction civil support teams*. Retrieved July 3, 2010, from <http://www.globalsecurity.org/military/agency/army/wmd-cst.htm>

- NORTHCOM, *The History of U.S. Northern Command*. Retrieved September 12, 2010, from http://www.northcom.mil/About/history_education/history.html
- Institute of Medicine. (2002). *The future of the public's health in the 21st century*. Washington, DC: National Academies Press.
- Kamin, R. (2006). *CT-1 Disaster medical assistance team after action report*. Hartford, CT: Connecticut DMAT Team.
- Leib, S. (1991) *Principles of adult learning*. Retrieved May 10, 2011, from http://www.papscreen.org.au/downloads/health_prof/vpp/manual/section_7_adult_learning.pdf
- Leedy, P. D. & Ormond, J. E. (2010). *Practical research: Planning and design*. Upper Saddle River, NJ: Pearsons.
- Maccoby, M. (2000). Understanding the difference between management and leadership. *Research Technology Management*, 43(1), 57–59.
- Marcus, L., Dorn, B. C, and Henderson, J. M. (2006). Meta-leadership and national emergency preparedness strategies to build government connectivity. *Biosecurity and Bioterrorism: Bio defense Strategy, Practice, and Science*, 4(2).
- National Association of Emergency Physicians. (2010). *Disaster Preparedness and Response Committee 2010 annual report*. Retrieved July 14, 2011, from <http://www.acep.org/content.aspx?id=33630>
- Reale, J. (2011), *Role of USNORTHCOM*. Master's thesis, Naval Postgraduate School, Monterey, CA.
- Rubin, Herbert & Rubin, Irene. (1995). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage. Retrieved August 1, 2011, from <http://www.public.asu.edu/~ifmls/artinculturalcontextsfolder/qualintermeth.html>
- Thomas, G. F. (2010). *Research methods: Qualitative data analysis*. Monterey, CA: Graduate School of Business & Public Policy, Naval Postgraduate School.
- Triebilock, C. T. (2000). *The myth of Posse Comitatus Act, Norristown, PA: Judge Advocate General's Corps 153d Legal Support Organization, US Army Reserve*. Retrieved July 1, 2011, from <http://www.homelandsecurity.org/journal/articles/trebilcock.htm>
- Tubbs, S. (2007). *A systems approach to small group interactions* (9th ed). New York: McGraw Hill.

- United States Congressional Report. (2006). *A failure of initiative: Final report of the select bipartisan committee to investigate the preparation for and response to Hurricane Katrina*. (Congressional Report No. H.Rpt. 109-377). Washington, DC: U.S. Government Printing Office.
- United States Department of Defense. (2006). *About U.S. Northern Command*. Retrieved September 12, 2010, from http://www.northcom.mil/About/history_education/history.html
- United States Government Accountability Office. (2004). *Homeland security: Effective regional coordination can enhance emergency preparedness* (GAO-04-1009). Washington, DC: author.
- United States Government Accountability Office. (2006). *Hurricane Katrina: Better plans and exercises needed to guide the military's response to catastrophic natural disasters* (GAO-06-443R). Washington, DC: author.
- United States Government Accountability Office. (2009). *U.S. Northern Command has a strong exercise program, but involvement of interagency partners and states can be improved* (GAO-06-643). Washington, DC: author.
- United States Department of Health and Human Services. (2003). *Health Resources and Services Administration, National Bioterrorism Hospital Preparedness Program*. Retrieved April 11, 2010, from <http://www.hhs.gov/>
- United States Department of Homeland Security. (2010). *Quadrennial homeland security review report: A strategic framework for a secure homeland*. Washington, DC: author. Retrieved February 13, 2011, from http://www.dhs.gov/xlibrary/assets/qhsr_report.pdf
- United States Department of Homeland Security. (2011). *FEMA: National Level Exercise*. Washington, DC: author. Retrieved February 13, 2011, from http://www.fema.gov/media/fact_sheets/nle2011_fs.shtm
- United States Secretary of the Navy. (1996). *Command and control* (MCDP 6). Retrieved May 10, 2011, from http://www.dtic.mil/doctrine/jel/service_pubs/mcdp6.pdf
- Weston, A. (2001). *A 21st century ethical toolbox*. New York: Oxford Press.
- White House. (2006). *The federal response to Hurricane Katrina: Lessons learned*. Washington, DC: author.
- White House. (2007). *Homeland Security Presidential Directive 21, section 29*. Retrieved September 9, 2010, from <http://www.fas.org/irp/offdocs/nspd/hspd-21.htm>

- White House. (2011). *Presidential policy directive 8: National preparedness*. Washington, DC: author.
- Winefeld, J. (2011). *Testimony before Senate Armed Services Committee, April 5, 2011*. Retrieved June 13, 2011, from http://armed-services.senate.gov/e_witnesslist.cfm?id=5040
- Yale New Haven Hospital Center for Emergency Preparedness. (2010, April 30). *Strategies and programs to integrate civilian-military domestic disaster medical response for homeland defense*. Retrieved January 2, 2010, from <http://www.ynhhs.org/emergency/highlights.html>
- Yeskey, K. (2010). *The key role of NDMS in disaster response: Testimony before United States Senate, Committee on Homeland Security and Governmental Affairs Subcommittee on State, Local, and Private Sector Preparedness and Integration*. Retrieved July 8, 2011, from <http://www.hhs.gov/asl/testify/2010/07/t20100722a.html>

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APPENDIX A. INTERVIEWEE BACKGROUNDS

Lieutenant General H Steven Blum retired as the Chief, National Guard Bureau. He was the senior uniformed National Guard officer responsible for formulating, developing and coordinating all policies, programs and plans affecting more than half a million Army and Air National Guard personnel. He holds a BA Degree from University of Baltimore and an MS from Morgan State College. He is also a 1989 graduate of the U.S. Army War College. General Blum has commanded at every level to include a Special Forces Operational Detachment-A, a Light Infantry Battalion and an Infantry Brigade, and a Division Support Command. Prior to commanding the 29th Infantry Division (Light), General Blum served as Assistant Adjutant General for Army, Commanding General, Maryland Army National Guard, and Assistant Division Commander (Support), 29th Infantry Division (Light). General Blum served as the Commanding General for Multinational Division (North) SFOR-10 in Operation Joint Forge, Bosnia Herzegovina.

Brigadier General J. Robert Galvin, M.D. MD, MPH, MBA, Fellow FACAP Dr. Galvin a 28 Years U.S. Army Reserve veteran served as the Commanding Officer of a ten man forward medical company in Vietnam for twelve months in 1966-67. He is an Army War College graduate. He completed his medical training at Tufts University and his MBA at the University of Connecticut. He served as the Commissioner of the Connecticut Department of Public Health from 2003 until 2011. Throughout his military career he has commanded several units including the 819th Station Hospital, 173rd Medical Group and Deputy Commander of the 804th Medical Brigade and run a field hospital in the European Command during the cold war.

Colonel Steven Gilbert, is the former Joint Training Officer, Connecticut Army National Guard. Colonel Gilbert is a U.S. War College graduate who served one year in Afghanistan as an Infantry Battalion Commander. Throughout his military career he has commanded several units including the 169th Regional Training Institute (RTI). The RTI is responsible for a number of academic programs including delivery of Officer

Candidate School (OCS) training for the Northeast region. He is a Joint Qualified Officer and is qualified to serve as a Joint Task Force Commander during domestic emergencies. This background of training and leading soldiers gives Colonel Gilbert the background and experience in the pre event training area.

Dr. Richard Kamin, State of Connecticut Office of Emergency Medical Services Medical Director, Responder as physician with the CT-1 DMAT for Hurricane Ike, EMS program director University of CT Health Center, Hartford Hospital EMS Fellowship Director B.S. Biology from the University of Washington, Seattle WA MD from the University of Washington, Seattle WA Emergency Medicine Residency, University of CT EMS Fellowship, Hartford Hospital, University of CT.

Colonel Mark Schulthess, PA-C, is the Medical Officer for 14th CST, of the Connecticut National Guard. Colonel Schulthess joined the United States Army in 1968 and is a combat veteran having served as a K-9 handler in Vietnam 1969. After returning from the war he served as MP and was eventually accepted into the PA-C at George Washington University. He has served in a variety of direct patient care delivery positions in both his military and civilian medical career. As the medical officer for the 14th CST he was responsible for the safety of his personnel during their response to an anthrax case in Danbury, Connecticut in 2009.

Colonel Robert Cody, former Commander 118th Medical Battalion He began his career in the Connecticut National Guard in 1982 and attended Officer candidate School in 1984 and commanded an Infantry Unit. In 1991 Colonel Cody transferred to the Medical Service Corp and in October of 2001 was appointed as the C/O 118th Medical Battalion. He deployed with the 118th to the War in Iraq as the Commander and in 2008 assumed his current role as the Personnel Officer for the Connecticut National Guard.

Lieutenant Commander Donald MacMillan, PA-C in the U.S. Naval Reserves, is the Emergency Management Coordinator at Yale New Haven Hospital and holds a clinical instructor appointment to the Yale School of Medicine. He has deployed for two different tours in support of the war in Iraq in 2005 and 2008 as a member of the 4th Medical Battalion. He began his career as a civilian Paramedic with the New Haven

Ambulance in 1989 and graduated from the Yale Physician Assistant program in 1995. He led a medical support contingent from the Yale School of Medicine in support of international aid to the Haiti earthquake.

Ronald I Gross, M.D., COL, MC, USAR (ret) , Chief Division of Trauma and Emergency Surgery Services, Baystate Medical Center, Springfield, Massachusetts. Dr Gross served as the Deputy Commander of Clinical Services of the 912th FST from July through October of 2003, and is the former Chief of Surgery and Chief of Professional Services of the 405th Combat Support Hospital. He has deployed in support of Operation Iraqi Freedom with the 912th FST, where he provided medical support to front line troops. Dr Gross is heavily involved on the training of civilian medical responders to disasters, and one of the original faculty and authors of the Disaster Management and Emergency Preparedness Course of the American College of Surgeons Committee on Trauma (ACS COT). He currently is a member of the disaster preparedness committees of the Eastern Association for the Surgery on Trauma, the American Association for the Surgery on Trauma and the ACS COT.

Michael F. Zanker, MD FACEP currently serves as Senior Medical Officer in the Office of the Assistant Secretary for Health Affairs of the U.S. Department of Homeland Security.

Dr. Zanker received his MD from the Chicago Medical School in 1993. He completed his residency training in emergency medicine at the University of Connecticut followed by a fellowship in EMS at Hartford Hospital. He is currently on staff at Hartford Hospital and holds the position of Assistant Professor of Emergency Medicine at the University Of Connecticut School Of Medicine.

Prior to joining the Department of Homeland Security's Office of Health Affairs, Dr. Zanker served as the Connecticut Department of Public Health's state EMS medical director and medical advisor to the Department's Office of Public Health Preparedness.

He has held the positions of Medical Director for the Capitol Region (Hartford, CT) MMRS program as well as Unit Commander of CT-1 Disaster Medical Assistance Team (CT-1 DMAT). Dr. Zanker has had practical experience on numerous DMAT deployments, including Hurricane Katrina.

APPENDIX B. INTERVIEW QUESTIONS

1. Overview of pre-event training by discipline
2. Specific command and control training
3. Success or failure operating in a real world mission scenario
4. Experienced with joint military/civilian interactions
5. Obstacle is real or perceived to joint training
6. Respondent's thoughts on value of joint prevent training
7. Other observations

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