

# Assessment of the Training Needs of National Disaster Medical System Hospitals

## *Task C Data Analysis and Report*

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*Prepared for:*

*The Department of Veterans Affairs  
Emergency Management Strategic Healthcare Group (EMSHG)*



**Department of  
Defense**



**Department of Health  
and Human Services**



**Department of  
Homeland Security**



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## EXECUTIVE SUMMARY

### BACKGROUND

In May of 1998, the Presidential Decision Directive 62 (PDD 62) entitled “Protection against Unconventional Threats to the Homeland and Americans Overseas” committed the resources of the United States to the mission of establishing a single comprehensive approach to domestic incident management for major disasters and other emergencies. At that time, the Public Health Service, as part of the Department of Health and Human Services (HHS) was the lead Federal agency for establishing and maintaining the preparedness and capabilities of the National Disaster Medical System (NDMS). In 2003, NDMS was reorganized under the Department of Homeland Security (DHS). This system of medical response assets, aeromedical evacuation capabilities, and non-Federal hospitals was established to care for victims of any incident that exceeds the medical care capabilities of the affected State, region, or Federal medical care system.

### PURPOSE

One of the provisions of PDD 62 directed the Department of Veterans Affairs (VA) to support HHS in training NDMS hospital personnel to respond appropriately in the event of NDMS activation. As part of this effort, VA, in partnership with HHS and the Department of Defense (DoD) and DHS directed a project to identify the specialized knowledge and training needs of key personnel at NDMS hospitals and to develop a training program. This report provides the results of the assessment of training needs that will be used as the basis for development of this training program.

Upon completion of the training and education program, a follow-up evaluation will be conducted to determine its impact on achieving its stated educational goals. Systems Assessment & Research, Inc. (SAR Corp) was selected as the primary contractor for the project. SAR Corp, referred to as “the contractor” in this report, developed the methodology and questionnaire for assessing training needs. Science Applications International Corporation (SAIC), a subcontractor, is responsible for developing educational materials and providing the necessary training for the second phase of the project.



## **METHODOLOGY**

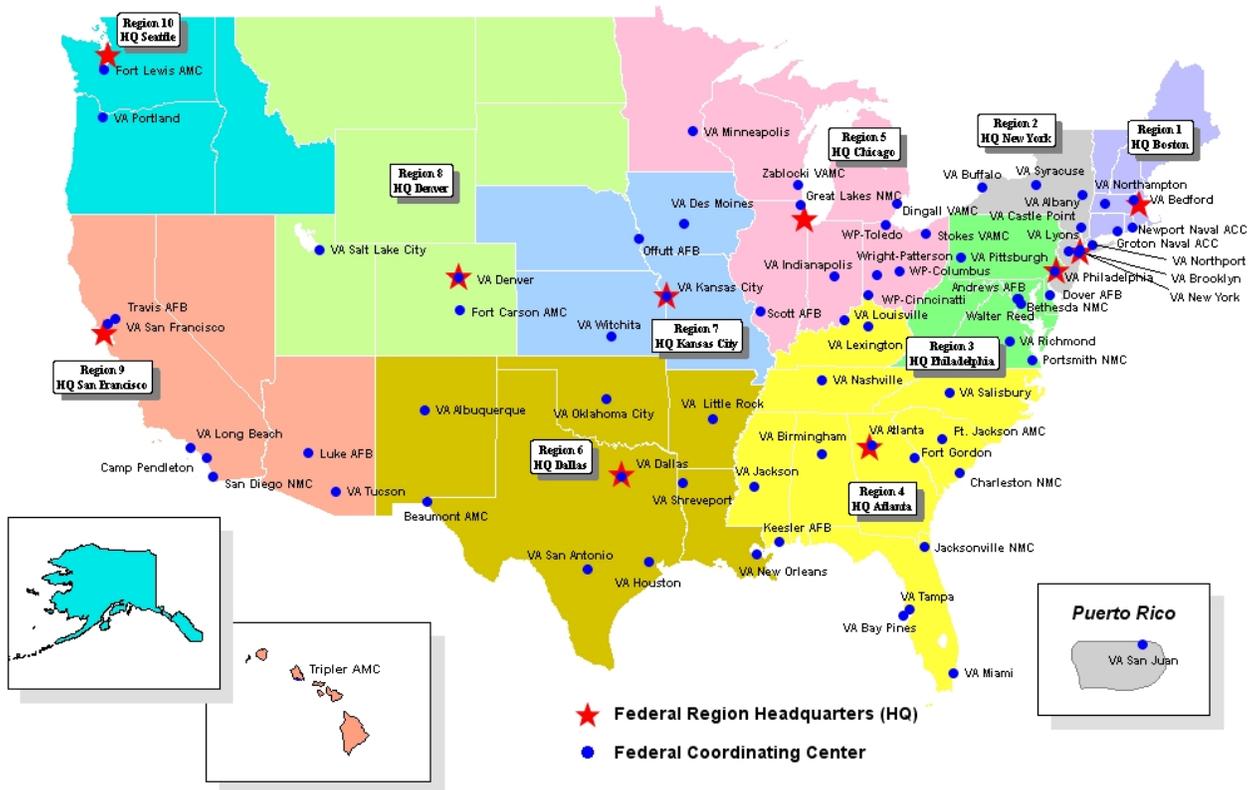
An interview survey was used to assess the training needs of staff at NDMS facilities. Survey questions focused on identifying the level of awareness, knowledge, training, and preparedness of key staff with regard to specific NDMS capabilities requirements.

The contractor designed the needs assessment survey with the assistance and review of a panel of subject matter experts. This included VA and DoD personnel from NDMS Federal Coordinating Centers (FCCs) and others who are experts in the areas of emergency preparedness and response, the effects of Chemical, Biological, Radiological, Nuclear, and Explosive weapons of mass destruction (CBRNE), disaster relief, and survey design. The questionnaire was designed not only to identify the level of preparedness of hospitals, but also to identify the education and training priorities to prepare participating hospitals for NDMS activation.

The contractor selected a sample of representative NDMS hospitals to participate in the survey, and analyzed the responses. VA and DoD personnel at each of the FCCs throughout the continental United States, Hawaii, and Puerto Rico, conducted the necessary interviews at each of the hospitals participating in the survey. The FCCs that participated in the survey are illustrated in Figure 1.



**Figure 1 Participating NDMS Federal Coordinating Centers by Federal Region**



- **Sample Selection** - A total of 1,726 non-Federal hospitals currently participating in the NDMS were identified from the most current listing of affiliated hospitals. A stratified, random sample of these hospitals was selected for the survey, representing hospitals from each of the 10 Federal Regions.
- **Survey Design** - The needs assessment was conducted as an interview survey from January 13, 2005 through February 4, 2005. Questions developed for the survey questionnaire were reviewed and assessed for their value and validity by subject matter experts from VA and DoD. Survey items were organized with questions targeting personnel with three different key functional roles within each hospital.
- **Data Collection** - VA and DoD selected FCC Coordinators to conduct the interviews for the survey since it is the FCCs' responsibility to coordinate NDMS exercise development and emergency plans with participating hospitals and other local authorities. For each of the selected hospitals



the interviewer identified an NDMS Point of Contact (POC), who in the majority of the hospitals (62.4 percent) was the facility's Emergency or Disaster Planner. The POC then identified a Hospital Administrator (executive level) and Clinical Services Director, who were willing to be interviewed. The FCC Coordinator interviewed all three individuals. Completed surveys were returned to the contractor for data processing and analysis. Three hundred and twenty-three (323) individuals were interviewed, representing 144 hospitals. This sample was comprised of 133 POCs, 95 Hospital Administrators, and 95 Clinical Services Directors.

- Data Analysis – The contractor analyzed responses to questions representing five major domains that the questionnaire supported. One domain was level of preparedness that included: a) perceptions of preparedness, b) established procedures and protocols, and c) training received. The other four domains were perceived training needs, training priorities, preference of training methods, and hospital demographics.

Training priorities reported in Chapter V are based on statistical analysis of the survey results. Included in the Appendix section of the report are the following: detailed methodology, survey questionnaire, interviewer materials, hospital demographics, a glossary of report terms and acronyms, and a section of supplementary tables and charts that amplify those in the body of the report with an additional level of detail.

## **SUMMARY OF TRAINING PRIORITIES**

This study provides an understanding of NDMS hospitals' preparedness and training needs related to NDMS activation that is needed to develop an effective training program. The pilot training program, which will be developed in the second phase of this project, responds to VA's requirement under PDD 62 for preparing NDMS hospitals.

The functional areas for training were identified and prioritized through analysis of responses from 323 interviews representing 144 NDMS hospitals. Results from questions within key functional areas were compared and prioritized based on training need. The following prioritized list of key functional training areas provides a summary of the prioritization tables in Section V. Summary.



## **Functional Area 1 - NDMS Operational Activities**

### **1. NDMS Specific Protocols and Procedures**

This would include training in protocols and procedures related to NDMS activation. POCs reported the number one need for staff training was to increase knowledge and awareness of operations under NDMS protocols.

### **2. Operations Involving Patient Movement**

All aspects of patient movement activities from patient reception to patient discharge should be included in this training area. Also included within this subject area are mortuary service issues, re-transfer of patients, and patient tracking.

### **3. Patient Family Support – NDMS Patient Discharge - Disaster Welfare Coordination with the American Red Cross®**

NDMS patient family support, NDMS patient discharge, and disaster welfare coordination with the American Red Cross® all ranked among the top ten training priorities. These are interrelated subjects that could be combined under a single training topic. Coordination with outside agencies and specifically with the American Red Cross was an area that the POC's identified that their staff were not well prepared.

## **Functional Area 2 - Clinical Management of Patients Exposed to Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Agents**

### **1. Treatment of Psychological Effects of CBRNE Agents**

The results from the POCs indicate that a high percentage of hospitals need training to manage the psychological effects of exposures to CBRNE agents. In addition, the potential for psychological factors to impact on medical treatment makes this an area that should be addressed in a training program.

### **2. Preserving the Chain of Custody**

Clinical Services Directors reported a lack of confidence in their departments' ability to preserve the chain of custody for records and lab specimens from CBRNE events. This is an area that can have serious implications in the preservation of evidence that may be needed in the investigation of terrorist activities.



### **Functional Area 3 - Administrative Issues Specific to NDMS Activation**

#### **1. Financial Aspects of Reimbursement for NDMS Patients**

The highest priority need in this area was a need to know about the influence of NDMS “disaster declarations on reimbursement.” Hospital Administrators provided clear indication of a need for training in this subject area.

#### **Training Methods**

The four top methods selected by POCs for training NDMS hospital personnel are listed below:

1. Functional exercises
2. In-house workshops
3. Classroom instruction/Conferences
4. Tabletop exercises

A combination of these methods would be appropriate for the second phase of this project, since no single method was preferred by a majority of POCs. There were no significant differences in the percentages, which ranged from 48.1 percent to 42.9 percent.

### **GENERAL FINDINGS**

#### **Organizational Structure for NDMS Participation**

- Eighty-seven (87.2) percent of POCs indicated that their hospital had an employee designated to interact with NDMS.
- Three of every four POCs (74.4%) were aware of their hospitals’ designation as an NDMS hospital and aware of their own responsibilities as a participant in NDMS.
- Urban/Suburban hospitals represented 82.6 percent of the hospitals that were surveyed, while rural hospitals made up 17.4 percent. These percentages are likely to apply to the total 1,726 NDMS hospitals.
- Roughly three of every four hospitals that were surveyed (70.1%) reported that it was not-for-profit or non-profit.
- A wide range in the number of licensed and staffed beds was observed for the surveyed hospitals. The smallest hospitals had 25 licensed beds while the largest had nearly 1,400 licensed beds.



- The sampled hospitals that were classified as general service hospitals comprised 86.8 percent of the total, while 13.2% of sampled hospitals were specialty hospitals.

### Level of Preparedness

- Less than half of POCs (41.4%) were confident that their hospital was prepared to carry out the responsibilities of the NDMS program.
- Less than half of the POCs (41.4%) felt their hospital staff knew their responsibilities in a local patient reception operation.
- The NDMS activities that were reported by the fewest POCs as having staff prepared were “Discharge Planning” (27.8%) and “NDMS patient family support” (28.6%).
- Hospital Administrators lacked confidence in their hospital’s ability to respond to NDMS related billing and reimbursement (ranked 1<sup>st</sup> of 9 in lack of confidence). This coincides with only 25.3 percent of the Administrators reporting they had written procedures addressing the topic.
- Hospital Administrators had little confidence in their hospital’s ability to manage mortuary services such as storage and transport of contaminated bodies (ranked 2<sup>nd</sup> of 9 in lack of confidence).
- A low percentage of the Hospital Administrators reported they had written procedures addressing discharge and follow-up of NDMS patients (37.9%), or re-transfer of patients who could not be managed on site (46.3%). These activities ranked 3<sup>rd</sup> and 4<sup>th</sup> respectively in Hospital Administrators’ lack of confidence in their staff to perform.
- Clinical Services Directors felt their department was least prepared with written procedures outlining its NDMS responsibilities (ranked 1<sup>st</sup> of 15 in lack of preparation).
- The chain of custody of reports and lab specimens related to CBRNE agents was an area where Clinical Services Directors felt their staff were ill prepared. Lack of preparation ranked from 2<sup>nd</sup> (of 15) for radiological agents to 5<sup>th</sup> for explosive agents.
- Approximately two-thirds (66.2%) of POCs felt that most or all of their hospital’s staff knew their roles in the Incident Command System (ICS) in the event of NDMS activation. ICS was not a high ranked training need (18<sup>th</sup> of 23).



- Less than half of the POCs (42.9%) reported that their hospital had participated in an NDMS training exercise. Of these, 63.1 percent participated in a functional exercise.

### Perceived Training Needs

- POCs reported that the area where hospital staff most needed training was protocols specific to NDMS. This ranked 1<sup>st</sup> out of 23 topics for training.

## **DISCUSSION**

A number of studies assessed the training needs and/or the preparedness of hospitals and public health agencies charged with responding to emergencies. A primary focus of many of these studies conducted following the September 11, 2001 terrorist attack was preparedness for terrorism and handling casualties of CBRNE agents. However, none of these was specific to activities involved in NDMS activation. Therefore, the results of this survey make a unique contribution to understanding existing levels of preparedness in the NDMS and the training needs of the participating hospitals.

Some of the findings of this survey are consistent with other research focused on preparedness for terrorism and exposure to handling casualties of CBRNE agents. However, the majority of these findings are uniquely associated with NDMS activations. These findings strongly suggest that the NDMS partnership agencies should develop and implement training courses specific to NDMS activation.

Some limitations as well as strengths related to the design are inherent in this study. Some of the strengths of the study include:

- Results based on a representative sample
- A high response rate
- Responses obtained from multiple personnel with differing functional roles
- Subject matter experts used for questionnaire content and construct validity.

There were some limitations to this study. These included the lack of pre-testing of the survey questionnaire and a limited sample size. Additionally, the low response rate for the Administrators and Clinical Services Directors could have been improved if more time were available for follow-up. Finally, both the interviewers and those being interviewed possessed subjective perceptions of



the survey. Consequently, the potential for biased responses should be considered when interpreting the results. However, interviewing more than one individual from each facility should minimize biases that may exist, and contribute to the anonymity of respondents.

## **CONCLUSION**

In conclusion, this survey identified the following training needs of the NDMS hospitals as most important:

1. NDMS specific protocols and procedures
2. Operations involving patient movement, including mortuary services
3. Treatment of psychological effects of CBRNE agents
4. Preserving the chain of custody
5. Financial aspects of reimbursement for NDMS patients
6. Patient family support – NDMS patient discharge - Disaster welfare coordination with the American Red Cross®



## I. INTRODUCTION

In May of 1998, the Presidential Decision Directive 62 (PDD 62) entitled “Protection against Unconventional Threats to the Homeland and Americans Overseas,” committed the resources of the United States to the mission of establishing a single comprehensive approach to domestic incident management for major disasters and other emergencies. At that time, the Public Health Service, as part of the Department of Health and Human Services (HHS) was the lead Federal agency for establishing and maintaining the preparedness and capabilities of the National Disaster Medical System (NDMS). In 2003, NDMS was reorganized under the Department of Homeland Security (DHS). This system of medical response assets, aeromedical evacuation capabilities, and non-Federal hospitals was established to care for victims of any incident that exceeds the medical care capability of the affected State, region, or Federal medical care system.

### PURPOSE

The Department of Veterans Affairs (VA) is directed under the provisions of PDD 62 to support HHS in training personnel in NDMS hospitals to respond appropriately in the event of NDMS activation. As part of this effort, VA, in partnership with HHS, the Department of Defense (DoD) and DHS, directed funding for a pilot project to identify the specialized knowledge and training needs of key personnel at NDMS hospitals and to develop a training program so that these hospitals can perform as an integrated part of an overall response activity. This report provides the results of the assessment of the training needs that will be used as the basis for development of a pilot training program.

### THE NATIONAL DISASTER MEDICAL SYSTEM

NDMS, begun in 1987, is a Federally coordinated initiative that augments the Nation’s emergency medical response capability. The four Federal partners in the NDMS are: HHS, DHS, DoD, and VA. The overall purpose of NDMS is to establish a single national medical response capability for:

- Assisting State and local authorities in responding to the medical and public health effects of major peacetime disasters including natural disasters such as hurricanes and earthquakes, technological disasters, major transportation accidents, and acts of terrorism including Chemical,



Biological, Radiological, Nuclear or Explosive weapons of mass destruction (CBRNE) events.

- Providing support to the military medical system in caring for casualties resulting from overseas armed conflicts.

NDMS has three major components: 1) Disaster Medical Assistance Teams with necessary supplies and equipment that can be dispatched to a disaster site within the United States, 2) an aeromedical evacuation system provided by the United States Air Force and 3) a voluntary hospital system that will provide definitive care to disaster victims who are assessed and evacuated out of the disaster area to designated NDMS metropolitan areas. The latter component of the NDMS is the focus of the training needs assessment described in this report.

In peacetime, NDMS will be activated only when State resources have been overwhelmed by a disaster, and a request has been made by the State for Federal assistance. DoD can activate the system to assist in treating casualties of an overseas armed conflict.

NDMS selected metropolitan areas primarily for their concentrations of hospitals and their proximity to airports. The links between NDMS and non-Federal hospitals are made by the NDMS Federal Coordinating Centers (FCCs). The FCCs recruit hospitals and maintain local non-Federal hospital participation in NDMS. Within their areas of geographic responsibility, the FCCs coordinate exercise development and emergency plans with participating hospitals and other local authorities in order to develop patient reception, transportation, and communication plans. During system activation, the FCCs are responsible for the coordination of the reception and distribution of patients evacuated to the area.

Accredited hospitals, usually over 100 beds in size and located in large U.S. metropolitan areas, are encouraged to enter into a voluntary agreement with NDMS. Hospitals agree to commit a number of their acute care beds, subject to availability, for NDMS patients. Because this is a voluntary program, hospitals may, upon activation of the system, provide more or fewer beds than the number committed in the agreement. Hospitals that admit NDMS patients are guaranteed reimbursement by the Federal government at the rate of 110% of approved Medicare expenditure levels.

## **BASIS FOR THE TRAINING NEEDS ASSESSMENT & PILOT TRAINING PROGRAM**

The operational responsibility of hospitals that participate in NDMS makes it important to ensure that adequate NDMS-related training and education is



provided to the appropriate staff at these facilities so that they may perform their functions in the event of NDMS activation. This includes knowledge and training on managing patients exposed to Chemical, Biological, Radiological, Nuclear, and Explosive agents (CBRNE). In response to this need, HHS provided funding for this project which is to be administered by VA.

The project is structured in two phases. The first phase is the training needs assessment, and the second phase is development and implementation of a pilot training program.

An interview survey was used to assess the training needs of staff at NDMS facilities. Questions focused on identifying the level of awareness, knowledge, training, and preparedness of key staff with regard to specific NDMS capabilities requirements. The purpose of the assessment is to provide a basis for developing a pilot training and education program that will be implemented in the second phase of the project. Upon completion of the training and education program, a follow-up evaluation will be conducted to determine its impact on achieving its stated educational goals. Systems Assessment & Research, Inc. (SAR Corp) was selected as the primary contractor for the project. SAR Corp, referred to as "the contractor" in this report, developed the methodology and questionnaire for assessing training needs. Science Applications International Corporation (SAIC) is responsible for providing the necessary training and developing educational materials used in the second phase of the project.

The contractor developed a needs assessment instrument with the assistance and review of a panel of subject matter experts who included VA and DoD personnel from NDMS Federal Coordinating Centers (FCCs) and others who are experts in the areas of emergency preparedness and response, CBRNE agents, disaster relief, and survey design. The questionnaire was designed not only to identify the level of preparedness of hospitals, but also to identify the education and training priorities to prepare participating hospitals for NDMS activation.

The contractor selected a sample of representative NDMS hospitals to participate in the survey and analyzed the responses. VA and DoD personnel at each of the FCCs throughout the continental United States, Hawaii, and Puerto Rico conducted the necessary interviews at each of the hospitals participating in the survey. This report presents the findings of the training needs assessment phase of the project with recommendations for future training activities.

The Needs Assessment Questionnaire was administered as an interview survey from January 13, 2005 through February 4, 2005. Conclusions and recommendations are made based on statistical analysis of the survey results. Included are appendices containing: the survey questionnaire, interviewer materials, hospital demographics, a glossary of report terms and acronyms, and



a section of tables and charts that augment those in the body of the report with greater detail.

## **PREVIOUS STUDIES**

A number of studies have been conducted to assess the training needs and/or the preparedness of hospitals and public health agencies charged with responding to emergencies.<sup>(1-21)\*</sup> A primary focus of many of these surveys, conducted in the wake of the September 11, 2001 terrorist attack, was preparedness for terrorism and exposure to agents of mass destruction. However, none of these were specific to activities involved in NDMS activation, and most focused on first responder activities.

A report by the Agency for Healthcare Research and Quality (AHRQ) in 2001<sup>(22)\*</sup> found no published evidence on the most effective educational methods for providing physicians, nurses, and other health care professionals with the knowledge and skills necessary to respond to bioterrorism or other public health events. Since then, some studies have been done that specifically relate to implementation of emergency preparedness training programs. These will be discussed later in relation to the findings of this study.

One of the more relevant studies reviewed in preparation for this effort was conducted between December 23, 2001 and January 14, 2002 to examine the preparedness of VA's nationwide healthcare system of hospitals, clinics, and nursing homes to respond in the event of a CBRNE incident.<sup>(23)\*</sup> VA's role of supporting VA and DoD contingency operations as well as the development of plans for the provision of emergency health services to veterans, military, and civilians affected by national security emergencies, places VA in a unique and vital position of responsibility.

The study showed VA participation in local emergency planning groups is high and that 97 of 155 responding facilities have adopted a Hospital Emergency Incident Command System or similar type of incident command system. However, information on training programs related to a CBRNE response showed a patchwork of programs that have been provided and little information on effectiveness. Since the study was completed, VA has participated in and conducted emergency preparedness training at many of its medical centers. These training programs ranged in scope from those conducted within VA<sup>(24)\*</sup> to full scale exercises involving State, county, and local agencies working with VA.<sup>(25,26)\*</sup>

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\* References can be found in Section VI. References, Page VI-1



## **LIMITATIONS OF THE STUDY**

Some potential limitations to the study include the sample size, the method of conducting the interviews, and lack of time to increase response rate with follow-up. Additionally, both the interviewers and those being interviewed possessed subjective perceptions of the survey – this could contribute to biased responses. However, the survey design calling for interviews of three individuals who have differing perspectives, from each facility, helps to minimize or identify any biases that may exist.



## **II. METHODOLOGY**

The training needs assessment survey was designed to collect information that would assist in assessing National Disaster Medical System (NDMS) hospitals' disaster preparedness and training needs nationwide. The survey serves as a crucial first step in developing an effective training program to support the nation's NDMS hospitals. The sampling frame was 1,726 non-federal hospitals that currently have a Memorandum of Understanding (MOU) with NDMS. Three hundred and twenty-three (323) interviews were conducted at 144 hospitals that participated in the survey. Key hospital personnel with different functional roles and perspectives were interviewed at each hospital. The functional roles that were targeted for interview were the NDMS Point of Contact (POC), who in most cases was the Emergency or Disaster Planner, an executive level Hospital Administrator, and a Clinical Services Director. This chapter summarizes the methodology employed by the survey team to conduct the needs assessment. Detailed methodology is provided in Appendix A.

The needs assessment questionnaire was developed with the assistance and review of a panel of subject matter experts in the areas of emergency preparedness and response, the effects of Chemical, Biological, Radiological, Nuclear, and Explosive weapons of mass destruction (CBRNE), disaster relief, and survey design. These were provided by the contractors, the Department of Veterans Affairs (VA), and the Department of Defense (DoD). To ensure that responses to the survey were reliable and captured a broad and meaningful perspective of hospitals' NDMS-related capabilities, three individuals from each facility were interviewed. These were chosen based on functional role so that respondents who were knowledgeable of key aspects of their hospital's disaster preparedness were interviewed. Hospitals that were to be surveyed were selected from a list of NDMS hospitals whose identities were masked. Lists were provided to the contractor by VA and DoD. From this group, a randomly selected representative sample was generated for data collection. This representative sample of hospitals was reported to the VA or DoD NDMS-affiliated Federal Coordinating Center (FCC) Coordinators who then conducted the interviews. The interviews were conducted from January 13, 2005 through February 4, 2005.

FCC Coordinators played a key role in eliciting the participation of the selected hospitals. Once each NDMS hospital's POC agreed to participate, Coordinators requested that the NDMS POC identify the individuals from each of the other two interviewee categories to conduct the interview. If a member of a particular respondent category was not available, interviewers were given the choice of selecting a respondent in the same category from an alternate NDMS



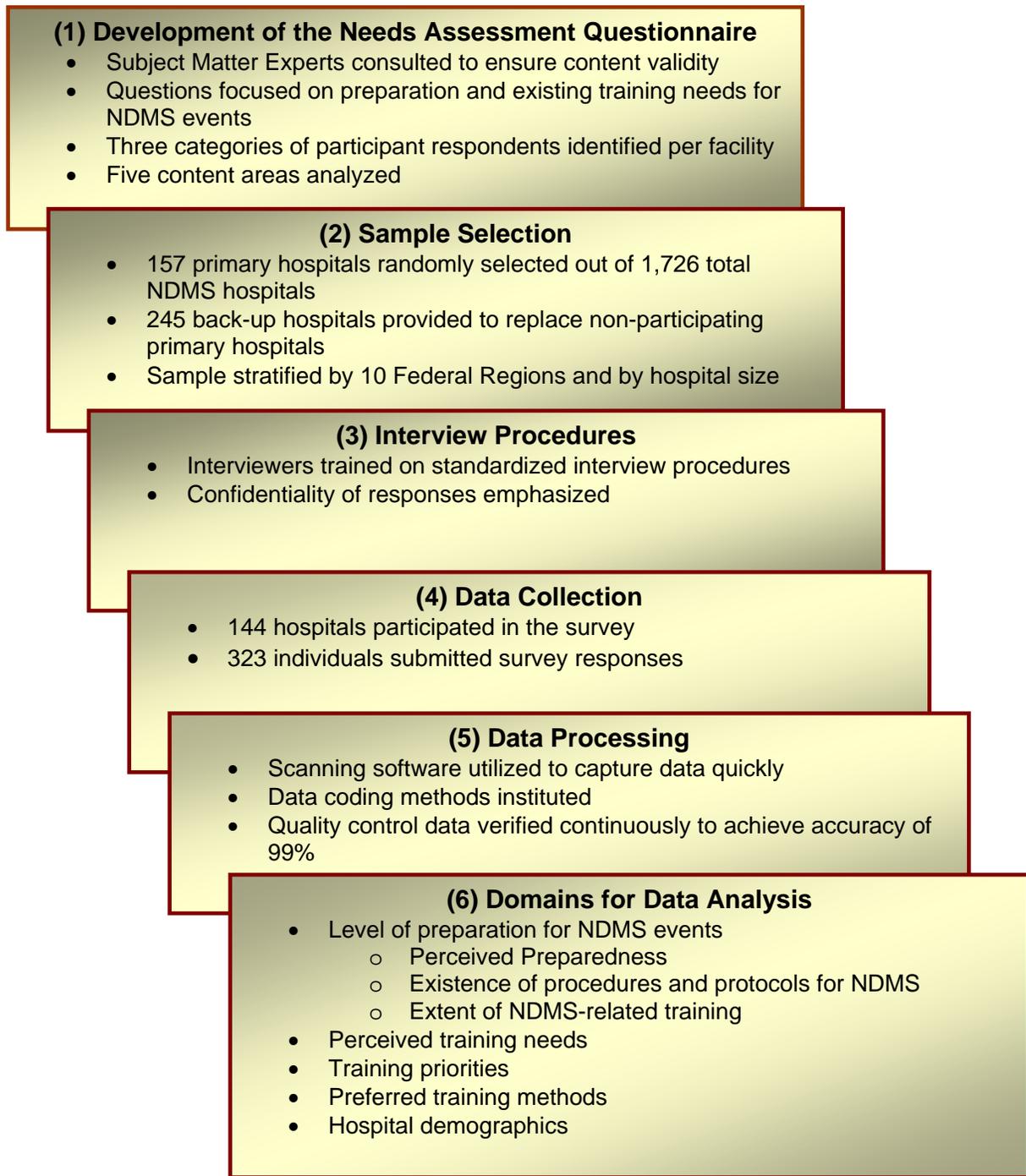
hospital in order to obtain the targeted number of respondents for the survey. All survey interviews were conducted in person or by telephone. Once Coordinators conducted the interviews, completed survey questionnaires were sent to the contractor for data entry and analysis.

Questionnaires were processed by the contractor to monitor the quality of the data that was provided by respondents. Analysis was divided into five (5) discrete domains which were supported by the needs assessment instrument.

Figure 2.1 provides a flow chart of the contractor's methodology. It outlines the process from development through analyses that was undertaken. The survey questionnaire is included in Appendix B.



**Figure 2**      **Flow Chart of Methodology**



### III. GENERAL FINDINGS

The results of interviews with Points of Contact/Emergency Planner (POCs), Hospital Administrators, and Clinical Services Directors are presented in this chapter. Many of the findings, while not directly related to the training needs of NDMS hospitals, are important to provide a general profile of the hospitals participating in the National Disaster Medical System (NDMS). Demographic components of the study are reported in Appendix D. This section provides detailed results specifically related to the hospitals' participation in NDMS, their level of preparedness, perceived training needed, training priorities, and preferred training methods. Additionally, priorities for needed training are further defined in **Section V. Summary**.

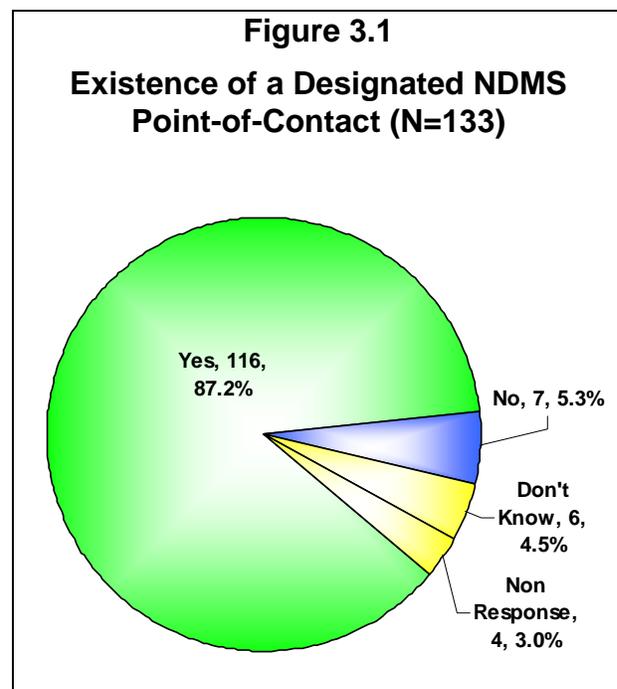
#### ORGANIZATIONAL STRUCTURE FOR NDMS PARTICIPATION

##### Level of Participation in NDMS

A designated NDMS POC who is a hospital employee is believed to be critical to maintaining the level of training and preparedness of a facility. The percentage of POCs who indicated that their hospital had an employee designated for interaction with NDMS is illustrated in Figure 3.1. It is worth noting that 9.8 percent of the POCs reported that either their hospital had no NDMS liaison or that they did not know if they had one.

This may reflect the fact that 37.6 percent of the POC respondents were not the hospital's emergency or disaster preparedness coordinator.

Three of every four POCs were aware of their hospital's designation as an NDMS hospital and aware of their role in NDMS (refer to Table 3.1). An additional 15.8 percent were aware that their hospital was designated an NDMS





hospital, but were unaware of their specific role in an NDMS activation. Less than 10 percent of POCs were unaware of NDMS-designated status.

**Table 3.1 POC’s Awareness of Role in an NDMS Activation (N=133)**

Response	Number of POCs	Percent
Aware of my hospital's designation as an NDMS hospital and aware of my role.	99	74.4
Not aware of my role, but aware of my hospital's designation as an NDMS hospital.	21	15.8
Not aware of either my role or my hospital's designation as an NDMS hospital.	13	9.8
Non response (missing value)	0	0.0
Total	133	100.0

### PERCEPTIONS OF LEVEL OF PREPAREDNESS

#### Point-of-Contact’s Perceptions

POCs were asked to rank their level of confidence in their hospital to carry out its responsibilities in the event of NDMS activation on a scale of 1 to 5, with 1 being “not confident at all” and 5 being “highly confident” (survey Question 25). Table 3.2 shows that less than half (41.4 percent) of POCs were confident in their hospital's preparedness.

When POCs were asked their opinion of their hospital staffs’ knowledge of the Incident Command System under NDMS (survey Question 19); about two-thirds (66.2 percent) responded that most or all of the staff were prepared to

**Table 3.2 Hospital Preparedness to Carry Out Responsibilities of the NDMS Program**

	Number of POCs	Percent
5 – <i>Highly Confident</i>	21	15.8
4	34	25.6
3	40	30.0
2	6	4.5
1 - <i>Not Confident At All</i>	7	5.3
Non Response (Missing value)	25	18.8
Total	133	100.0



adequately respond to an NDMS operation (Table 3.3). Twenty-eight (28) percent of the respondents reported that only some of their staff were prepared, and 5.3 percent were unaware of the Incident Command System. Since the incident command structure is a key to smooth operation during NDMS activation, this indicates a need for further training specific to the Incident Command System. The lack of capability in this area is likely to be more pronounced if an event occurred on a weekend.

**Table 3.3 Staff Knowledge of their Roles in the Incident Command System (N=133)**

<b>Response</b>	<b>Number of POCs</b>	<b>Percent</b>
Unaware of Incident Command System (ICS)	7	5.3
Some of staff prepared	37	27.8
Most of staff prepared	61	45.9
Fully prepared	27	20.3
Non Response (missing value)	1	0.7
<b>Total</b>	<b>133</b>	<b>100.0</b>

POCs were asked to report if their hospital was prepared to participate in specific emergency response activities that would likely be incorporated into an NDMS operation (survey Question 22). Although this series of questions was intended to identify capabilities of hospital staff, the percentages also reflect the POC’s assessment of staff knowledge.

The results of the POC responses are listed in Table 3.4 in order according to the percent reporting their hospital was not prepared. While most of the hospitals are prepared in many of the functional areas that were listed, a few areas stand out that need additional attention. One such area was indicated by the high percentage (56.4 percent) of POCs who reported that their hospitals’ staff were not prepared for NDMS patient discharge planning. Preparation for family support activities of NDMS patients was also perceived to be lacking by POCs. Both of these relate to the hospital’s ability to identify and contact family in a disaster environment where the patient’s home may no longer exist, and family may be scattered.

A critical area where POCs felt their hospitals were unprepared was in their hospital’s ability to participate in local NDMS patient reception operations. Less than half (41.4 percent) of the POCs felt their hospital staff was



knowledgeable about responsibilities in a local NDMS patient reception operation. This is likely to be directly related to the percentage that participated in the last NDMS training exercise (43 percent) which is reported in a subsequent section on training received.

POCs reported their hospital staff was ill-prepared to treat patients who may suffer psychological effects of an incident involving Chemical, Biological, Radiological, Nuclear, or Explosive (CBRNE) agents. The percentage reporting their hospital was not prepared varied depending on the type of agent. It ranged from a high of 42.9 percent unprepared for explosive agents to 39.8 percent unprepared for chemical agents. Hospitals appeared to be better prepared for the medical effects of exposure to CBRNE agents. The percentage of POCs that reported their hospital was unprepared for the medical effects ranged from 24.8 percent for radiological agents to 20.3 percent for chemical agents.

Another activity in which results show a lack of preparation is disaster welfare inquiry and coordination with the American Red Cross®. When combined with the POCs who reported they did not know if their hospitals' staff were prepared, the percentage was almost half (48.9 percent) of POC respondents.



**Table 3.4 POCs' Perception of Preparedness of Hospital Staff  
with Respect to Specific NDMS Activities\* (N=133)**

NDMS Activity	Prepared		Not Prepared		Don't Know		Non Response	
	Number of POCs	Percent						
1. Discharge planning for NDMS	37	27.8	75	56.4	20	15.0	1	0.8
2. NDMS patient family support	38	28.6	71	53.4	23	17.3	1	0.8
3. Responsibilities in a local NDMS patient reception operation	55	41.4	59	44.4	19	14.3	0	0.0
4. Treating the psychological effects/explosive	63	47.4	57	42.9	12	9.0	1	0.8
5. Treating the psychological effects/radiological	63	47.4	56	42.1	12	9.0	2	1.5
6. Treating the psychological effects/biological	64	48.1	55	41.4	13	9.8	1	0.8
7. Treating the psychological effects/chemical	67	50.4	53	39.8	12	9.0	1	0.8
8. Disaster welfare inquiry/coordination with the American Red Cross	66	49.6	50	37.6	15	11.3	2	1.5
9. Medical treatment/radiological	85	63.9	33	24.8	12	9.0	3	2.3
10. Mutual aid agreement & interagency roles and responsibilities	97	72.9	33	24.8	3	2.3	0	0.0
11. Medical treatment/explosive	91	68.4	29	21.8	9	6.8	4	3.0
12. Patient tracking	95	71.4	29	21.8	3	2.3	6	4.5
13. Working in Personal Protection Equipment (PPE)	103	77.4	29	21.8	1	0.8	0	0.0
14. Medical treatment/biological	92	69.2	28	21.1	10	7.5	3	2.3
15. Medical treatment/chemical	94	70.7	27	20.3	8	6.0	4	3.0
16. NDMS bed reporting	99	74.4	24	18.0	8	6.0	2	1.5
17. Proper handling and notification procedures for lab specimens	98	73.7	22	16.5	12	9.0	1	0.8
18. Incident command	115	86.5	18	13.5	0	0.0	0	0.0
19. Disaster/Multiple casualty management	115	86.5	15	11.3	2	1.5	1	0.8
20. Working with the media /developing press releases	118	88.7	12	9.0	3	2.3	0	0.0
21. Call down lists	127	95.5	5	3.8	1	0.8	0	0.0

\*Ranked based on the percentage not prepared.



### Hospital Administrator's Perceptions

Hospital Administrators were least confident in their hospitals' capacity to respond to NDMS-related activities such as: "billing and reimbursement for NDMS patients," "mortuary services, e.g., storage and transport of contaminated bodies," and "discharge and follow-up of NDMS patients." These areas were ranked low, as measured by their confidence index with 1 being the lowest and 5 the highest.

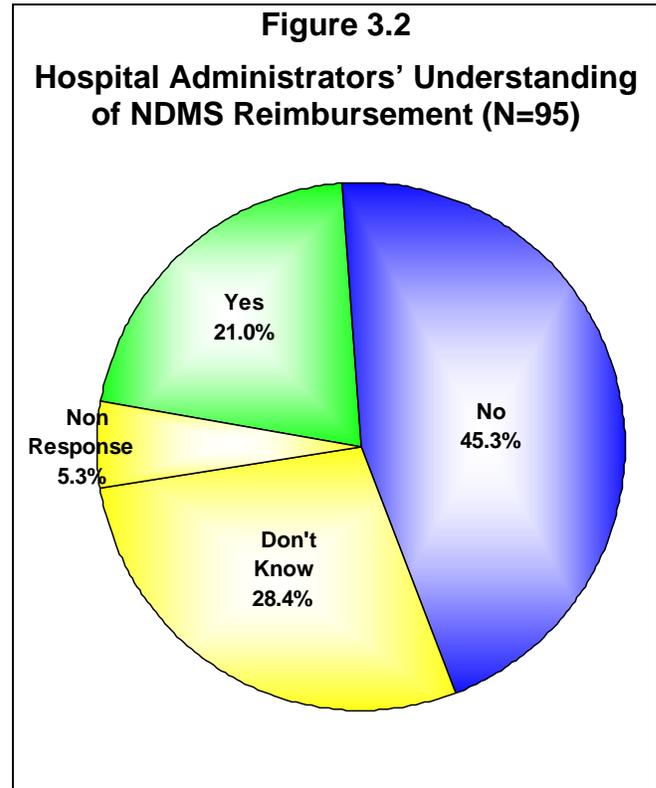
Table 3.5 lists the confidence index as a ranked score starting with that function in which administrators reported the lowest confidence at the top.

**Table 3.5 Hospital Administrators' Level of Confidence in Hospital's Capability to Respond to NDMS Requirements (N=95)**

Functional Capability	Ranked Score	SD*	Total Responses	Non Responses
1. Billing and reimbursement for NDMS patients	2.76	1.28	91	4
2. Mortuary services, e.g., storage & transport of contaminated bodies	3.22	1.27	91	4
3. Discharge and follow-up of NDMS patients	3.25	1.31	92	3
4. Retransfer of NDMS patients that cannot be managed on-site	3.49	1.40	92	3
5. Heightened security, e.g., identification of authorized personnel	3.86	1.10	91	4
6. Additional staff and equipment required, e.g., ventilators	3.90	1.04	91	4
7. Communications with media, NDMS patients' families	3.92	1.07	91	4
8. Multi-language services as needed (e.g., Spanish, etc)	3.92	1.06	91	4
9. Additional supplies & pharmaceuticals required	4.00	1.01	91	4

\* *SD = Standard Deviation – a measure of dispersion of data around the mean value.*

Only 21 percent of Hospital Administrators reported that they understood how disaster declarations affect NDMS reimbursement (Figure 3.2, survey Question 31). Nearly half (45.3 percent) of the Administrators reported that they did not understand how disaster declarations affect reimbursement. An additional 28.4 percent of administrators indicated that they did not know if they understood. These results provide evidence that the need for reviewing billing and reimbursement related to NDMS events is prevalent among NDMS hospitals.



### Clinical Services Director's Perceptions

The Clinical Services Directors were asked to report if their department is adequately trained to respond to specific requirements that may be placed on them during NDMS activation (survey Question 32). The results of these responses are given in Table 3.6. The table lists the Clinical Services Directors' level of agreement that the staff is prepared to respond as a ranked score, with 1 being the lowest possible score and 5 being the highest. At the top of the list is that function for which Clinical Services Directors reported their department was least prepared, "written procedures outlining departmental responsibilities." The level of preparedness on how to preserve the chain of custody for CBRNE evidence also scored low. This suggests more hospitals could focus on lab specimen procedures related to CBRNE events and identify procedures that clearly emphasize the department's role in an NDMS-activated event. These areas could all be classified as administrative in nature. The clinical activities were all scored relatively high. Scoring highest were procedures for receiving patients, concepts of incident command and information available on hazardous CBRNE materials. These were all areas where Clinical Services Directors reported their department was adequately prepared.



**Table 3.6 Clinical Services Directors' Perception of His/Her Department's Preparedness to Respond to a CBRNE Event (N=95)**

<b>NDMS Function</b>	<b>Ranked Score</b>	<b>SD*</b>	<b>Total Responses</b>	<b>Non Responses</b>
1. Written procedures outlining the department's NDMS responsibilities	2.78	1.39	88	7
2. Trained on chain of custody NDMS/radiological	2.79	1.27	90	5
3. Trained on chain of custody NDMS/biological	2.81	1.24	90	5
4. Trained on chain of custody NDMS/chemical	2.86	1.23	90	5
5. Trained on chain of custody NDMS/explosive	2.88	1.28	90	5
6. Treat patients from NDMS/radiological	3.25	1.14	91	4
7. Treat patients from NDMS/biological	3.56	1.00	91	4
8. Has Information on NDMS/radiological	3.62	1.18	93	2
9. Treat patients from NDMS/chemical	3.64	1.01	91	4
10. Treat patients from NDMS/explosive	3.72	1.02	92	3
11. Has Information on NDMS/explosive	3.78	1.06	93	2
12. Has Information on NDMS/biological	3.84	1.05	93	2
13. Has Information on NDMS/chemical	3.87	1.06	93	2
14. Trained in concept of incident command	3.93	0.94	94	1
15. Receipt of patients from NDMS	3.99	0.78	89	6

Note: SD = Standard deviation - a measure of dispersion of data around the mean value.

Score includes only valid responses.



## **ESTABLISHED PROCEDURES AND PROTOCOLS**

Hospital Administrators were asked about NDMS specific written emergency response procedures and protocols their hospital may have developed (survey Question 29). The areas for which the Hospital Administrators frequently reported having written procedures or protocols in place were “Additional supplies and pharmaceuticals required” (86.3 percent), “Additional staff and equipment required” (84.2 percent), and “Multi-language services” (80.0 percent), respectively (Table 3.7). Conversely, few respondents reported written procedures and protocols for NDMS patient “Billing and reimbursement” (25.3 percent), “Discharge and follow-up of NDMS patients” (37.9 percent), and “the Retransfer of NDMS patients that cannot be managed on-site” (46.3 percent). In an NDMS-activated event where written protocols and procedures are crucial for establishing accountability, hospitals would benefit from training that supports the establishment of protocols to enhance disaster preparedness.



**Table 3.7 Written NDMS Procedures and Protocols Reported  
by Hospital Administrators (N = 95)**

Procedure	Have Written Procedures		Do Not Have Written Procedures		Don't Know		Non Responses		Rank Based on Percent Reporting No Written Procedures
	N	Percent	N	Percent	N	Percent	N	Percent	
1. Billing and reimbursement for NDMS patients	24	25.3	53	55.8	18	18.9	0	0.0	1
2. Discharge and follow-up of NDMS patients	36	37.9	50	52.6	9	9.5	0	0.0	2
3. Retransfer of NDMS patients that cannot be managed on-site	44	46.3	44	46.3	7	7.4	0	0.0	3
4. Mortuary services, e.g., storage and transport of contaminated bodies	50	53.2	32	34.0	12	12.8	1	1.1	4
5. Heightened security, e.g., identification of authorized personnel	73	78.5	16	17.2	4	4.3	2	2.1	5
6. Communications with media, NDMS patients' families	75	78.9	14	14.7	6	6.3	0	0.0	6
7. Multi-language services as needed	76	80.0	13	13.7	6	6.3	0	0.0	7
8. Additional staff & equipment required, e.g., ventilators	80	84.2	12	12.6	3	3.2	0	0.0	8
9. Additional supplies & pharmaceuticals required	82	86.3	12	12.6	1	1.1	0	0.0	9

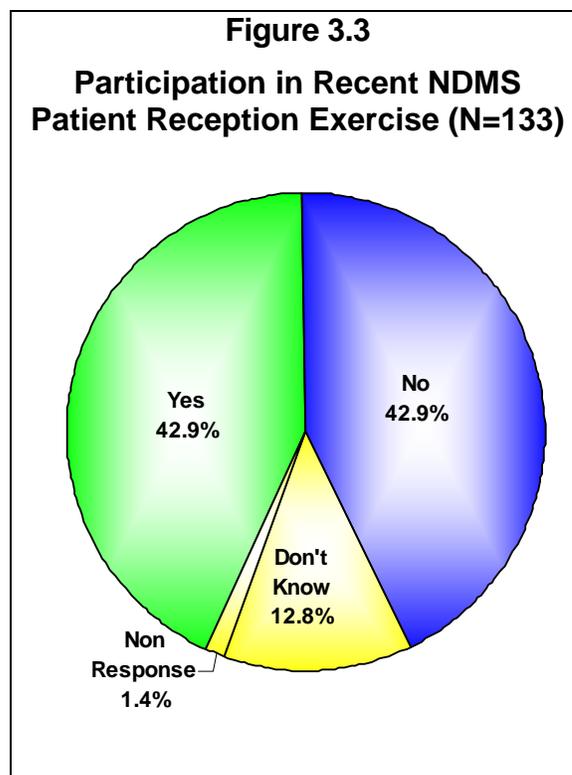
## TRAINING RECEIVED

### Participation in NDMS Patient Reception Exercise

POCs were asked whether or not their hospital participated in the most recent NDMS patient reception exercise. The responses were divided, with an equal distribution between “yes” and “no” with 42.9 percent each (refer to Figure 3.3).

The 42.9 percent (or 57 respondents) that reported participation in a patient reception exercise also responded to questions about the nature of the exercise (Table 3.8).

Most of the hospitals that had taken part in a recent NDMS patient reception exercise reported that the type of exercise was “Functional area drill” (63.1 percent). Table 3.8 also shows the percent participating in other types of patient reception exercises.



**Table 3.8 Level of Patient Reception Exercise for Respondents Who Participated in an Exercise (N=57)**

Level of Exercise	Response Frequency	Percent
Tabletop exercise	8	14.0
Functional area drill	36	63.1
Team training	1	1.8
Other related event	11	19.3
Non response (missing value)	1	1.8
<b>Total Respondents</b>	<b>57</b>	<b>100.0</b>



**Table 3.9 Time Period Since Last Patient Reception Exercise (N=57)**

<b>Time Period (February 1, 2005 reference)</b>	<b>Response Frequency</b>	<b>Percent</b>
Within the past 6 months	19	33.3
7 to 12 months	14	24.6
13 to 18 months	7	12.3
Over 18 months	8	14.0
Non response (missing value)	9	15.8
<b>Total Respondents</b>	<b>57</b>	<b>100.0</b>

The 57 respondents who reported participation in an NDMS exercise were also asked the date of their hospital's most recent participation (refer to Table 3.9). Roughly 60 percent of these respondents indicated that their hospital participated in an NDMS exercise within the past 12 months. The most common topics included in NDMS exercises in which POCs' hospitals had taken part are listed in rank order in Table 3.10. The top three were: "NDMS alert and activation notifications" (78.9 percent), "Reporting of beds available to the FCC" [Federal Coordinating Center] (78.9 percent), "Communications with the FCC regarding incoming patients" (66.7 percent).

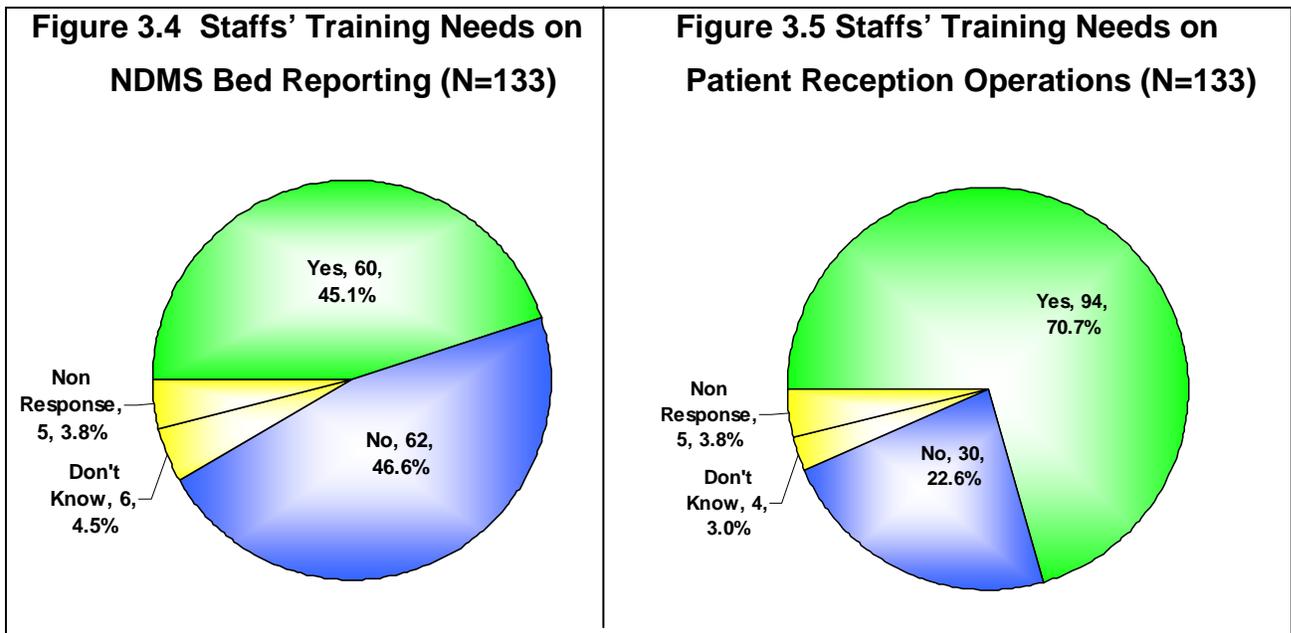


**Table 3.10 Topics Included in Patient Reception Exercise (N=57)**

<b>Topic</b>	<b>Included</b>	<b>Not Included</b>	<b>Non Responses</b>	<b>Total</b>	<b>Percent Included</b>
1. NDMS alert and activation notifications	45	10	2	57	78.9
2. Reporting of beds available to the FCC	45	10	2	57	78.9
3. Communications with the FCC regarding incoming patients	38	17	2	57	66.7
4. Reporting of NDMS admissions and discharges to the FCC	34	21	2	57	59.6
5. Communications with the local Patient Reception Team	31	24	1	57	54.4
6. Discharge/transfer home of NDMS patients requiring additional medical treatment	20	35	2	57	35.1
7. Communications with the nearest military medical facility regarding military patients	18	37	2	57	31.6
8. Discharge/travel of NDMS patients not requiring additional medical treatment	13	42	2	57	22.8
9. Billing and reimbursement	10	45	2	57	17.5

**PERCEIVED TRAINING NEEDS**

POCs were asked about their hospital staffs' need for training in bed reporting (survey Question 20) and patient reception operations (survey Question 21). Approximately 45 percent of the POCs felt that their hospital's staff needed training on procedures for NDMS bed reporting (Figure 3.4). In contrast, 70.7 percent of respondents felt that their hospital staff required training for their roles in receiving NDMS patients (Figure 3.5).



POCs were asked to rank the areas in which their hospital needs training specific to NDMS activation (survey Question 23). These included such topics as incident command, NDMS protocols, call down lists, and others. The response was based on the Likert-scale, where the respondent ranked training needs on a scale of 1 ("not needed") to 5 ("highly needed"). Mean scores are presented for each functional capability in a ranked order (refer to Table 3.11), from functions where training was identified as most needed, to those where training was identified as least needed. A mean score above three indicates potential topics for training. The highest of these was protocols specific to NDMS (3.98), followed by NDMS patient family support (3.63) and discharge of NDMS patients (3.53). The need for training in treating NDMS patients with psychological effects of CBRNE agents also ranked high. Ratings ranged from a low of 3.51 for chemical agents to a high of 3.57 for explosive agents. These were all significantly higher ( $p < .002$ ) than the medical aspects of treatment activity.



POCs' perceptions of the content areas where their hospitals needed training were consistent with the POCs' opinions about hospital staff preparedness. This demonstrates internal consistency. However, there was one somewhat discordant area related to the medical aspects of treating patients that had been exposed to CBRNE agents. Even though POCs indicated a training need in this topic, POCs felt their hospitals' staffs were adequately prepared.

**Table 3.11 POCs' Perceptions of the Level of Training Needed for Hospital Staff in Specific NDMS Training Areas (N=133)**

Training Content Area	Mean Score	SD*	Total Responses	Non Responses
1. Protocols specific to NDMS	3.98	1.07	132	1
2. NDMS patient family support	3.63	1.15	133	0
3. Treating the psychological effects/explosive	3.57	1.18	130	3
4. Treating the psychological effects/radiological	3.55	1.21	130	3
5. Treating the psychological effects/biological	3.53	1.20	130	3
6. Discharge planning for NDMS	3.53	1.20	133	0
7. Treating the psychological effects/chemical	3.51	1.20	130	3
8. Hospital's responsibilities in patient reception operation	3.38	1.27	133	0
9. Medical treatment/radiological	3.25	1.28	132	1
10. Chain of command structure - Federal, State, local levels	3.21	1.35	132	1
11. Disaster welfare inquiry/coordination with Red Cross	3.17	1.24	133	0
12. Medical treatment/biological	3.14	1.23	132	1
13. Medical treatment/chemical	3.08	1.22	132	1
14. Medical treatment/explosive	3.08	1.26	132	1
15. Mutual aid agreements & interagency roles and responsibilities	2.97	1.15	132	1
16. Patient tracking	2.95	1.36	132	1
17. Working in PPE	2.83	1.31	133	0
18. Incident command	2.77	1.30	132	1
19. NDMS bed reporting	2.67	1.32	131	2
20. Proper handling and notification procedures for lab specimens	2.66	1.33	133	0
21. Disaster/Multiple casualty management	2.61	1.22	133	0
22. Call down lists	2.10	1.15	133	0
23. Working with the media/developing press release	1.99	1.18	133	0

\* Note: Means do not include missing values SD = Standard deviation



## **POCS' TRAINING PRIORITIES**

POCs were asked to select from a list what they thought were the top training priorities for their hospital (survey Question 24). In most cases respondents chose three topics, however in some cases they chose fewer than three and a few chose more than three. Regardless of the number of training areas that were selected, all responses were included in the ranking.

The topic most frequently selected by the POCs was "Protocols specific to NDMS." Of the 133 POCs who responded to the question, 51 reported this as one of their top training priorities. According to the POCs who responded, the three topics identified as top training priorities are: "Protocols specific to NDMS," "Incident command," and "Working in personal protection equipment or protective clothing" (Table 3.12). Close behind in frequency is "Medical treatment of illnesses and injuries associated with biological WMD agents" (30.1 percent). These are areas that POCs reported are the most important for their hospitals to become proficient. In some cases this appears to be independent of their perception of their hospital's existing level of preparedness and training.



Table 3.12 NDMS Hospital Training Areas Ranked By POC's Priority (N=133)

Training Content Area	Number of Respondents Selecting this Need as Priority*	Number of Respondents Not Selecting this Need as Priority	Total Number of Respondents	Percent of Respondents Selecting this Need as Priority
1. Protocols specific to NDMS	51	82	133	38.3
2. Incident command	47	86	133	35.3
3. Working in PPE	46	87	133	34.6
4. Medical treatment /biological	40	93	133	30.1
5. Disaster/Multiple casualty management	34	99	133	25.6
6. Medical treatment/radiological	32	101	133	24.1
7. Your hospital's responsibilities in a local NDMS patient reception operation	31	102	133	23.3
8. Treating the psychological effects/biological	30	103	133	22.6
9. Medical treatment/chemical	30	103	133	22.6
10. Treating the psychological effects/radiological	28	105	133	21.1
11. Treating the psychological effects/chemical	25	108	133	18.8
12. Chain of command issues at the Federal, State, and local levels	22	111	133	16.5
13. Treating the psychological effects/explosive	18	115	133	13.5
14. Patient tracking	17	116	133	12.8
15. Disaster welfare inquiry/coordination with Red Cross	17	116	133	12.8
16. Discharge planning for NDMS	16	117	133	12.0
17. Proper handling and notification procedures for lab specimens	15	118	133	11.3
18. NDMS patient family support	13	120	133	9.8
19. Medical treatment/explosive	12	121	133	9.0
20. Mutual aid agreement & interagency roles and responsibilities	12	121	133	9.0
21. NDMS bed reporting	9	124	133	6.8
22. Working with the media/developing press release	5	128	133	3.8
23. Call down lists	4	129	133	3.0

\*Note: Respondents were asked to choose three topics, but in some cases chose more or fewer.



## TRAINING METHODS

The POCs were asked what they thought the top three most effective methods for NDMS related training would be (survey Question 26). Each respondent could select any combination of methods that he/she felt was the most effective mode of training. The methods most frequently reported by the POCs as the most effective for NDMS-related training were “Functional Exercise” and “In-house Workshop” (Table 3.13). The classroom/conference and tabletop exercise approaches were ranked equally as the third most effective method of training. Functional exercise was consistently identified as a popular choice. The respondents expressed preference for practical drills and training in-house or on-site through in-person training.

**Table 3.13 POC’s Ranking of the Most Effective Methods  
for Training NDMS Hospital Staff (N=133)**

Training Method	Respondents selecting this method	Percent selecting this method	Respondents NOT selecting this method	Percent NOT selecting this method	Rank based on percent selected
Functional exercise	64	48.1	69	51.9	1
In-house workshop	63	47.4	70	52.6	2
Tabletop exercise	57	42.9	76	57.1	3
Classroom/conference	57	42.9	76	57.1	4
Full-scale exercises	38	28.6	95	71.4	5
Internet	26	19.5	107	80.5	6
Self study	22	16.5	111	83.5	7
Video	18	13.5	115	86.5	8
Travel to workshop and conferences	18	13.5	115	86.5	9
Satellite conferences	17	12.8	116	87.2	10
Software/CD	16	12.0	117	88.0	11
Other	3	2.3	130	97.7	12



## **DEMOGRAPHICS**

The characteristics of the hospitals in the sample were examined to determine if there were independent factors that might be predictors of a hospital's level of training and preparedness. The two primary variables identified were: size (as measured by the number of licensed beds) and regional location.

The Federal Region in which the hospital operates could also be a factor if there are regional differences in communication and dissemination of information regarding NDMS. Other factors that were considered to have a potential impact on the level of participation in NDMS were the type of financial ownership and average occupancy rate. Detailed descriptive statistics of the sample demographics are included in Appendix D.

Data analysis revealed that hospital size, form of ownership, and the hospital's yearly average occupancy rate were not important predictors of the level of training and preparedness. These factors did not show any statistically significant impact on responses related to hospital preparedness, perceived training needs or preferred methods of training. One noteworthy exception was related to the level of confidence in billing and reimbursement for NDMS patients and the hospital's yearly average of occupancy. Regression analysis showed an inverse relation between these two factors ( $t = -3.11, P < .003$ ). The finding suggests that a high annual occupancy rate is significantly related to a low confidence in the hospital's capacity to respond to billing and reimbursement for NDMS patients and vice versa. The impacts of other demographics such as hospital region and service area are inconclusive as the number of hospitals available was insufficient for analysis at the Federal Region or service area level.



## IV. DISCUSSION

A number of other studies have been conducted to assess the training needs and/or the preparedness of hospitals and public health agencies charged with responding to emergencies. A primary focus of many of these surveys conducted in the wake of the September 11, 2001 terrorist attack was preparedness for terrorism and exposures to agents of mass destruction. However, none of these were specific to activities involved in National Disaster Medical System (NDMS) activation. Therefore, the results of this survey will make a unique contribution to understanding how NDMS hospitals and their personnel perceive their training needs relative to NDMS events.

This study generated a wealth of information regarding NDMS hospitals' preparedness and training needs. Some of the findings are consistent with other research focused on preparedness for terrorism and exposures to agents of mass destruction. These included working in personal protection equipment, <sup>(2)\*</sup> preferred training methods, <sup>(1, 4, 22)\*</sup> and treating medical injuries and illnesses associated with Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) events. <sup>(2, 22, 27)\*</sup> The majority of findings from this study, however, are uniquely associated with NDMS activations such as training needs in NDMS-specific procedures and protocols, NDMS patient movement issues, coordination with government agencies and other organizations, and billing and reimbursement issues in an NDMS activation. These findings have significant implications for the development of training courses specific to NDMS activation.

There are a number of strengths and limitations associated with this survey. One of the strengths was the sample of hospitals, which was representative of the NDMS hospital population. The sample was selected using a random stratified sampling procedure that reflects the distribution of hospitals not only by Federal Region, but also by hospital size. As a result, the findings can be generalized to the population of NDMS hospitals nationwide.

A second strength is the high response rate. This survey yielded much higher response rates than other surveys of this type. The individual response rate reached 92.4 percent for POCs, 66 percent for Hospital Administrators, and 66 percent for Clinical Services Directors, while other surveys' response rates were much lower. For example, Ciraulo, et al. <sup>(27)\*</sup> in a survey of physicians assessing their preparedness to respond to mass casualty incidents from Weapons of Mass Destruction (WMD), had a response rate of 34 percent.

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\* References can be found in Section VI. References, Page VI-1



Shadel, et al. <sup>(1)\*</sup> had a response rate of 31.5 percent in a national needs assessment survey to explore barriers to training and educational programs on bioterrorism preparedness. The survey's high response rate can be attributed to effective data collection methods. The interviews were conducted by the Federal Coordinating Center (FCC) coordinators either face-to-face or via telephone.

A third strength is the multiple job roles of respondents included in the survey. This survey collected responses from individuals with in-depth knowledge of NDMS-related issues, namely the Points of Contact or Emergency Planners (POCs), Hospital Administrators, and Clinical Service Directors. Their perceptions about preparedness and training needs provided broad and comprehensive perspectives on training needs of NDMS hospitals.

There were some limitations to this study. These included the lack of pre-testing of the survey questionnaire and a limited sample size. Additionally, the low response rate for the Administrators and Clinical Services Directors could have been improved if more time were available for follow-up. Finally, both the interviewers and those being interviewed possessed subjective perceptions of the survey. Consequently, the potential for biased responses should be considered when interpreting the results. However, the survey design calling for interviews of three individuals who have differing perspectives helps to minimize biases that may exist.

The response rates of Hospital Administrators and Clinical Services Directors (66.0 percent each) were lower than that for the POCs (92.4 percent). The lower response rates of these two groups were in part due to the fact that for 48 hospitals, the returned questionnaire indicated that information provided for the three functional roles was completed by a single person. It was unclear whether the questions were answered collectively by three respondents or just by one person. To ensure the data validity, the results include only the sections completed by the person who indicated his/her job role in the questionnaire (in the vast majority of cases, it was the POC).



## V. SUMMARY

### BASIS OF THE SUMMARY RANKINGS

This chapter summarizes key survey findings that will guide the development of the National Disaster Medical System (NDMS) pilot training program. Analysis grouped activities into three priority functional areas: Priorities for training methods are also presented.

The functional area with highest priority according to the survey results involved activities and knowledge specific to NDMS patient reception activities. Although Points of Contact or Emergency Planners (POCs) answered most of the questions related to NDMS operational activities, Hospital Administrators and Clinical Services Directors also answered relevant questions in this area.

The second priority area focuses on clinical issues such as the medical and psychological aspects of treating patients exposed to Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) agents. Potential issues specific to CBRNE incidents were addressed by POCs and Clinical Services Directors.

The third priority area dealt with administrative aspects of NDMS activation, including patient movement logistics and financial aspects of reimbursement for NDMS patients. Hospital Administrators' input was instrumental in analyzing the priority placed on activities within this functional area.

This chapter provides a training priority ranking for each of the three functional areas. The functional areas for training are presented in tables that combine results from multiple questions on each of the NDMS activities. Multiple perspectives on specific areas of institutional preparedness and training need were analyzed and prioritized to arrive at an overall ranking of training needs.

The training priority ranking for the NDMS operations functional area is presented in summary Table 5.1. This combines responses to questions addressing NDMS operations activities from the following three perspectives:

- 1) Preparedness (survey question series 22)
- 2) Training needs (survey question series 23)
- 3) Training priorities (survey question series 24)

A second summary table was created to present the training priority ranking of the clinical issues related to the treatment of illnesses and injuries of patients exposed to CBRNE agents. This combines responses on clinically-related activities given by POCs with those given by the Clinical Services



Directors. A third summary table ranks training priorities that address administrative activities specific to NDMS. Ranking for this third functional area is based on Hospital Administrators' responses to questions on the existence of written protocols and procedures and their confidence in their hospital's staff to respond to specific NDMS demands.

## **NDMS OPERATIONS ACTIVITIES**

POCs' responses to questions on NDMS operations activities are summarized in Table 5.1. For this prioritization table, results for the subject areas related to NDMS operations activities were extracted from rankings reported in the "General Findings" chapter of this report. For the series of questions on the hospitals' preparedness (reported in Chapter 3, Table 3.4), the percent of hospitals that was not prepared in each activity area was sorted on a descending scale, from highest to lowest percentage. For matching questions where POCs reported training needs (reported in Chapter 3, Table 3.11), the mean scores were ranked from greatest need to lowest need. The third series of questions ranked each NDMS activity by the percentage of POCs who selected the subject area as one of their top priorities for training (reported in Chapter 3, Table 3.12). These findings were ranked from the highest priority topic to the lowest priority topic.

These rankings were then averaged over the three series of questions resulting in an average summary ranking for each activity area. The subject areas were then assigned a priority score from 1 through 19. The procedure was also used for ranking averages in Tables 5.2 and 5.3.

Table 5.1 illustrates the highest priority training areas identified by the POCs. For training purposes, many of these functions (patient reception, patient discharge, and patient follow-up) can be combined under the category of "patient movement activities."

- The highest ranked training area was NDMS-specific procedures and protocols. This topic ranked highest on training need and was also the highest training priority.
- The second ranked priority training area was NDMS patient reception operations. This finding is reinforced by the fact that only 42.9 percent of the surveyed hospitals participated in the most recent NDMS patient reception exercise and that 70.7 percent of POCs felt that their hospital's staff required training on their functional roles in NDMS patient reception operations.
- The third, fourth, fifth, seventh and eighth ranked training priority areas were all related to clinical aspects of NDMS and are addressed under that functional area.



- NDMS patient family support, NDMS patient discharge, and disaster welfare coordination with the American Red Cross® all ranked among the top ten training priorities. These are interrelated subjects that could be combined under a single training topic.

The consistency of the POC responses for Questions 22, 23, and 24 was assessed by a correlation analysis of the rankings for the functional areas. A very strong correlation ( $r^2 = 0.96$ ,  $p < 0.01$ ) was observed when rankings for “Lack of Preparedness” (Q22) and “Training Need” (Q23) were compared. However, when mean rankings from the two measures were compared with the rankings for “Training Priority,” there was little correlation ( $r^2 = 0.39$ ,  $p = 0.18$ ). POCs’ training priorities may not have been specific to NDMS activation, but may have been made on the basis of the broader area of general emergency preparedness. This would explain the high training priority POCs assigned to Incident Command (ranked second among 23 subjects (Table 3.12).

The Incident Command System is an important general emergency preparedness competency that was considered by the POCs to be a training priority. However, 66.2 percent of the POCs stated that most or all of their staff were knowledgeable on their roles in Incident Command and it was not ranked high as a training need (18<sup>th</sup> of 23).



**Table 5.1 Training Priority Ranking For NDMS Operational Activities  
Based on POC Responses**

Functional Activity *	Table 3.4 (Q22) Lack of Preparedness		Table 3.11 (Q23) Training Need		Table 3.12 (Q24) Training Priority		Average	Overall Priority
	Response Percent	Rank* Order	Mean Score	Rank* Order	Response Percent	Rank* Order	Rank Order Score	Rank Order
NDMS-Specific Protocols	Not Asked	Not Asked	3.98	1	38.3	1	1.0	1
NDMS Patient Reception	44.4	3	3.38	8	23.3	7	6.0	2
Treating the psychological effects/radiological	42.1	5	3.55	4	21.1	10	6.3	3
Treating the psychological effects/biological	41.4	6	3.53	5	22.6	8	6.3	3
Treating the psychological effects/explosive	42.9	4	3.57	3	13.5	13	6.7	5
NDMS Patient Family Support	53.4	2	3.63	2	9.8	18	7.3	6
NDMS Patient Discharge	56.4	1	3.53	5	12.0	16	7.3	6
Treating the psychological effects/chemical	39.8	7	3.51	7	18.8	11	8.3	8
Working in PPE	21.8	11	2.83	17	34.6	3	10.3	9
Disaster welfare inquiry/ coordination with Red Cross	37.6	8	3.17	11	12.8	14	11.0	10
Chain of command with outside agencies	Not Asked	Not Asked	3.21	10	16.5	12	11.0	10
Incident Command System	13.5	18	2.77	18	35.3	2	12.7	12
Patient Tracking	21.8	11	2.95	16	12.8	14	13.7	13
Mutual aid & interagency roles	24.8	9	2.97	15	9.0	20	14.7	14
Multiple casualty management	11.3	19	2.61	21	25.6	5	15.0	15
Handling and notification procedures for lab specimens	16.5	17	2.66	20	11.3	17	18.0	16
NDMS bed reporting	18.0	16	2.67	19	6.8	21	18.7	17
Working with the media	9.0	20	1.99	23	3.8	22	21.7	18
Call down lists	3.8	21	2.10	22	3.0	23	22.0	19

- *Rankings are derived from Chapter 3, Tables 3.4, 3.11 and 3.12. Medical treatment of CBRNE patients is included in Table 5.2.*



## **CLINICAL ISSUES OF TREATING NDMS PATIENTS EXPOSED TO CBRNE AGENTS**

Patients exposed to CBRNE agents would likely be triaged and treated prior to being transferred to NDMS for follow-up recovery. When patients reach the NDMS hospital, the clinical issues regarding treatment of patients are much different than in the acute phase of an incident. Treatment of patients will likely be clinically and socially more complex. Knowledge of the implications of treating a patient exposed to CBRNE agents would therefore be relevant to NDMS.

The summary of priorities for training in this functional area were based on responses from the POC and the Clinical Services Directors. Clinical activities were grouped into four subject matter areas as follows:

1. Treating patients with psychological effects of CBRNE.
2. Treating the medical aspects of patients exposed to CBRNE.
3. Chain of custody of CBRNE related specimens and records.
4. Availability of information on treating patients exposed to CBRNE.

Within each subject matter area there was very little difference in the ranking scores for each of the agents that might be encountered in a CBRNE event. However, the relative priorities for training as they relate to medical treatment of patients exposed to specific CBRNE agents are listed in Table 5.2. Subject matter areas were prioritized based on the following survey results:

- Responses of Clinical Services Directors supported the assessment of the POCs regarding the relatively high level of preparedness for the medical aspects of treating patients exposed to CBRNE.
- Clinical Services Directors reported lower levels of preparation for chain of custody issues than for medical treatment of patients exposed to CBRNE. Additionally, POCs reported training in treating patients with psychological effects of CBRNE clearly ranked as a greater need than treating the medical aspects (Table 3.4 and Table 3.11). Therefore, chain of custody issues and treatment of patients with psychological effects of CBRNE were ranked above medical treatment in training priority.

The top two clinical subject matter areas for training are: 1) recognizing and treating the psychological effects of CBRNE agents, and 2) chain of custody issues.

- Psychological effects - Treating patients with psychological effects of exposure to CBRNE is an area where staff training is needed. Less than 50 percent of hospitals reported their hospital has staff that received training in managing the psychological effects of exposure to CBRNE. Furthermore, POCs reported a high need for training in this area (3.51-3.57 of 5). POCs



training priorities ranked highest for biological agents and lowest for explosive agents.

- Chain of custody - Clinical Services Directors reported a lack of confidence (2.79-2.88 of 5) in their departments' ability to preserve the chain of custody for records and lab specimens from CBRNE events. This is an area that can have serious implications in the preservation of evidence that may be needed in the investigation of terrorist activities.

While a high percentage of POCs (77.4 percent) reported staff training and preparedness in the use of personal protective equipment (PPE), the high priority given by POCs to training for the use of PPE indicates a level of concern that should be addressed. It is possible that the POCs perceived reinforcement of training in this area to be important.

The clinical management of illnesses and injuries of CBRNE agents was an area where hospitals were fairly well prepared. Sixty-five percent or more of the hospitals reported they have staff trained in these areas. There was slight variability in level of priority placed on training to deal with the various CBRNE agents. These are ranked in Table 5.2.

The Clinical Services Directors reported a high level of confidence in their departments' capability to effectively treat patients exposed to CBRNE agents. Overall, the POCs and Clinical Services Directors were fairly consistent in their perception of the clinical preparedness of their institution and/or department to treat patients exposed to CBRNE agents.

**Table 5.2 Training Priority Ranking for Medical Treatment of Patients Based on POC and Clinical Services Director (CSD) Responses**

Ranked Subject Matter Area	Table 3.4 POC Lack of Preparedness		Table 3.11 POC Training needed		Table 3.12 POC Training Priority		Table 3.6 CSD Preparedness		Rank Order within subject area
	Pct. Score	Rank	Mean Score	Rank	Pct. Score	Rank	Mean Score	Rank	
Treat NDMS patients with CBRNE effects									
• Radiological	24.8	9	3.25	9	24.1	6	3.25	6	1
• Biological	21.1	14	3.14	12	30.1	4	3.56	7	2
• Chemical	20.3	15	3.08	13	22.6	8	3.64	9	3
• Explosive	21.8	11	3.08	13	9.0	19	3.72	10	4



## **NDMS ADMINISTRATIVE ISSUES**

Hospital Administrators' responses to survey questions addressing NDMS process-based activities showed they felt least prepared to respond to billing and reimbursement for NDMS patients. This was the only function in which there was a general consensus that hospital personnel were unprepared. The training needs are ranked and prioritized in Table 5.3 and described below:

- Reimbursement – Only 21 percent of Hospital Administrators reported that they understood how disaster declarations affect hospital reimbursement for NDMS patients. This response is consistent with the survey data that showed just 25 percent of hospitals had written procedures on how to process NDMS patient reimbursement claims. Of the nine functions that were examined, Administrators' responses exhibited the lowest level of confidence (2.76 of 5) in hospitals' capacity to effectively process reimbursement claims for NDMS patients.
- NDMS patient discharge and follow-up – The potential for patient discharge delays is greater in an NDMS related event (e.g., Patients may not have a home locally to which they can be discharged, so coordination of services with outside agencies is critical. This function ranked third of nine in confidence expressed by Hospital Administrators (3.25 of 5); that is, with 1 representing the activity that Administrators had the least confidence in their hospital's capability to perform.
- Mortuary Services – Knowing what to do with NDMS patients who die while being treated will be an issue. Hospital Administrators reported a low level of confidence that their staff would be prepared in this area (3.22 of 5). This ranked 2<sup>nd</sup> for little or no confidence expressed by Hospital Administrators.
- Re-transfer of Patients – Less than 50 percent of Hospital Administrators reported that their hospital had written procedures for re-transfer of NDMS patients, but they reported a low level of confidence (3.49 of 5) in their hospital's capacity to effectively respond to situations requiring re-transfer. This area ranked 4<sup>th</sup> out of 9 functional categories.

**Table 5.3 Training Priority Ranking For Administrative Activities  
Based on Responses From Hospital Administrators**

Functional Area	Table 3.7 (Q29) No Written Protocol		Table 3.5 (Q30) Confidence Score		Average	Overall Priority
	Percent	Rank Order	Mean	Rank Order	Rank Score	Rank Order
Billing/Reimbursement for NDMS Patients	55.8	1	2.76	1	1.0	1
Discharge and Follow-up of NDMS Patients	52.6	2	3.25	3	2.5	2
Mortuary Services	34.0	4	3.22	2	3.0	3
Re-transfer of NDMS Pts.	46.3	3	3.49	4	3.5	4
Heightened Security	17.2	5	3.86	5	5.0	5
Communication w/ Media and NDMS Pt. Families	14.7	6	3.92	7	6.5	6
Multi-language Services	13.7	7	3.92	7	7.0	7
Additional Staff and Equipment Required	12.6	8	3.90	6	7.0	7
Additional Supplies & Pharmaceuticals	12.6	8	4.00	9	8.5	9



### TRAINING METHODS

Each POC was asked to select the top three methods that they considered effective modes of preparedness training – respondents could choose any combination of methods (some POCs chose more than three and others chose fewer). Among the surveyed hospitals, the methods most frequently selected by the POCs as most effective for NDMS-related training were “Functional Exercises” and “In-house Workshops.” The top five methods ranked by POCs are listed in Table 5.4 (complete results are reported in Table 3.13 of Chapter 3). The POCs expressed a preference for practical drills and training in-house or on-site through instructor training. Technology-oriented methods of instruction (satellite conferences, CD-ROM and DVDs) ranked well below Functional Exercises and In-house Workshops in terms of preference. Very little difference separates the top four methods of training, while there is a significant drop in the percentage of POCs selecting the other methods they were given to choose from. However, a majority of POCs did not select any single method of training, so a combination of these top methods would be appropriate for a training program. Other methods could be used to supplement the primary training mode.

**Table 5.4 POC’s Ranking of the Most Effective Methods for Training NDMS Hospital Staff**

TRAINING METHODS	Number of respondents selecting this method*	Percent selecting this method	Number of respondents NOT selecting this method	Percent NOT selecting this method	Rank based on percent selecting method
Functional exercise	64	48.1	69	51.9	1
In-house workshop	63	47.4	70	52.6	2
Tabletop exercise	57	42.9	76	57.1	3
Classroom/conference	57	42.9	76	57.1	4
Full-scale exercises	38	28.6	95	71.4	5

*Note: Total number of respondents = 133.*



## **SUMMARY OF TRAINING PRIORITIES**

The following functional training priorities were identified by the needs assessment survey.

### **Functional Area 1 - NDMS Operational Activities**

#### **1. NDMS Specific Protocols and Procedures**

This area would include training in protocols and procedures related to NDMS activation. POCs also reported the *number one* need for staff training was to increase knowledge and awareness of operations under NDMS protocols.

#### **2. Operations Involving Patient Movement**

All aspects of patient movement activities from patient reception to patient discharge should be included in this training area. Also included within this subject area are mortuary service issues (a priority identified by Hospital Administrators), re-transfer of patients, and patient tracking.

#### **3. Patient Family Support – NDMS Patient Discharge - Disaster Welfare Coordination with the American Red Cross**

NDMS patient family support, NDMS patient discharge, and disaster welfare coordination with the American Red Cross® all ranked among the top ten training priorities (Table 5.1). These are interrelated subjects that could be combined under a single training topic. Coordination with outside agencies and specifically with the American Red Cross was an area that the POCs identified that their staff were not well prepared. Only 49.6 % of the POCs reported that their staff were prepared for this NDMS activity. Patient family support is likely to be provided through the American Red Cross or with the assistance of volunteer agencies. Likewise, transportation of discharged patients back to their home or family will probably require coordination with the American Red Cross, or some other agency.

### **Functional Area 2 - Clinical Management of Patients Exposed to CBRNE**

#### **Agents**

#### **1. Treatment of Psychological Effects of CBRNE Agents**

The results indicate that there is a high percentage of hospitals that need training to manage patients with psychological effects of exposures to



CBRNE agents. In addition, the potential for psychological factors to impact on medical treatment makes this an area that should be addressed.

## **2. Preserving the Chain of Custody**

Clinical Services Directors reported a lack of confidence in their departments' ability to preserve the chain of custody for records and lab specimens from CBRNE events. This is an area that can have serious implications in the preservation of evidence that may be needed in the investigation of terrorist activities.

## **Functional Area 3 - Administrative Issues Specific to NDMS Activation**

### **1. Financial Aspects of Reimbursement for NDMS Patients**

The highest priority need in this area was a need to know about the influence of NDMS "disaster declarations on reimbursement." Hospital Administrators provided a clear indication of a need for training in this subject area. Other lower priority administrative issues are presented in Table 5.3.

### **Training Methods**

Four methods stood out as preferred by POCs for training NDMS hospital personnel. These training methods were:

1. Functional exercises
2. In-house workshops
3. Classroom instruction/Conferences
4. Tabletop exercises

Since there were no significant differences in the percentages of respondents that selected each of the top four methods (Table 5.4), a combination of these methods would be appropriate for the second phase of this project.



## **CONCLUSION**

In conclusion, this survey identified the following training needs of the NDMS hospitals as most important:

1. NDMS specific protocols and procedures
2. Operations involving patient movement, including mortuary services.
3. Treatment of psychological effects of CBRNE agents
4. Preserving the chain of custody
5. Financial aspects of reimbursement for NDMS patients
6. Patient family support – NDMS patient discharge - Disaster welfare coordination with the American Red Cross®.



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## **VII. APPENDICES**



## **APPENDIX A**

### **DETAILED METHODOLOGY**



## METHODOLOGY

### A. Developing the Training Needs Assessment Questionnaire

Multiple resources were employed to develop the needs assessment instrument. The contractor as well as the subcontractor, VA, and DoD provided subject matter experts (SMEs) to guide the development of the questionnaire. SMEs involved in the early stages of the needs assessment brought to the project extensive experience in WMD training, institutional knowledge with the National Disaster Medical System, and expertise in the areas of bioterrorism and survey research. In addition, the contractor conducted a comprehensive review of existing WMD, emergency and bioterrorism preparedness, and training needs assessment studies, in order to identify questions relevant to evaluate the existing training needs of the NDMS hospitals.<sup>(1-18)\*</sup> Select additional documents that were reviewed included: the National Disaster Medical System Patient Movement – Concept of Operations Plan;<sup>(19)\*</sup> and the National Bioterrorism Hospital Preparedness Program FY2004 Continuation Guidance Document (HRSA).<sup>(20)\*</sup> Other references are included in the list located in the Appendix. Lastly, drafts of the Training Needs Assessment. Survey materials developed by the contractor were submitted to a joint VA and DoD panel of experts for review and approval. SMEs provided by the contractors also reviewed the questionnaire. Comments and suggestions, including questions specified as necessary for the survey, were incorporated into the final version of the Training Needs Assessment Questionnaire. This version of the instrument was then distributed to the FCC coordinators to use in conducting the interviews. Upon completion, the questionnaires were sent back to the contractor for analysis.

#### 1. Validity and Reliability

Validity of the survey instrument – and the resulting data – was an important consideration in the formation of the survey. The contractor took a number of measures to ensure that the survey was designed to accurately assess the content needed for training, the intensity of NDMS-related training previously received by hospitals, as well as their present needs. Specifically, the contractor consulted with SMEs to identify questions pertinent to the objectives of the survey that also adequately represented the concepts of “NDMS-preparedness.” Comments from this group also provided the basis for revisions of all items on the survey. To address construct validity<sup>†</sup>, the contractor examined survey questionnaires used in previously published studies related to

\* References can be found at the end of this section.

† The existing agreement between a theoretical concept and a specific measuring device or procedure.



hospital preparedness and emergency planning to ensure that the survey gathers the information it purports to gather.<sup>(21)\*</sup>

Reliability of a survey measure refers to the stability and equivalence of repeated measures of the same concept.<sup>(21)\*</sup> The estimate of reliability reflects 1) the extent to which the same question yields consistent results at different point in time known as test-retest reliability, 2) different people collecting or recording data on the same questions tend to get comparable answers known as inter-rater reliability and 3) different questions that are assumed to tap the same underlying concept are correlated or referred as internal consistency reliability. The contractor research team focused on the reliability of the instrument and the process of conducting the survey to ensure that procedures and protocols were consistent and uniform. To ensure reliability, the questionnaire included questions that were based in previous emergency response needs assessment instruments with known test-retest reliability and internal consistency. To control for inter-rater reliability, the contractor worked with the VA and DoD to provide training to interviewers. Through two telephone conference calls, all interviewers were instructed to abide by the same procedures and guidelines. These sessions allowed for questions and answers about the needs assessment survey, such as: which category of respondent should respond to what section of the survey. Documents sent to each interviewer included the Training Needs Assessment Survey, a PDD 62 Fact Sheet for NDMS Participating Hospitals, PDD 62 Fact Sheet for NDMS Area Coordinators, Guidelines for Conducting Interviews, and a PDD 62 Interviewer's Log. Copies of these documents are provided in Appendix C of this document. These efforts help minimize the random variation in interviewer's performance to increase consistency in acquiring comparable answers.

The PDD 62 Fact Sheet for NDMS Area Coordinators provided the interviewers with details about the survey, and information to assist them in conducting the interview. Interviewers were given a period of two weeks to gather the data from assigned NDMS hospitals in their Federal Region. To ensure that the survey reached the maximum number of hospitals possible, interviewers were provided with other back-up NDMS hospitals, should the primary hospitals, for whatever reason, refuse to participate.

For reference purposes, Guidelines for Conducting Interviews were given to all interviewers. This information is included in Appendix C. Guidelines served to establish uniform interview standards, minimize interview bias, and enhance the reliability of responses. All interviews were intended to be conducted in-person; however, some exceptions were made to conduct phone interviews where geographical distance and interviewee availability were concerns. These guidelines also provided tips to interviewers on course of action in such cases.

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\* References can be found at the end of this section.



To help interviewers with record keeping, a PDD 62 Interviewer's Log was provided to all interviewers (refer to Appendix C). This log assisted interviewers with charting their progress. All interviewers were instructed to return the original completed surveys to the contractor for data processing.

The interviewers were instructed to emphasize the confidentiality and anonymity of each interviewee's responses. Survey instructions stressed the importance of administering the correct sections and questions to the appropriate category of respondents. While the survey consisted of thirty-two questions overall, only selected questions were used for each designated category of respondents.

## **2. Questionnaire Structure**

The survey questionnaire consisted of seven individual sections with questions targeting three specific groups of respondents. The first three sections addressed: 1) Interviewee Demographics, 2) NDMS Federal Coordinating Center Area Demographics, and 3) NDMS-Participating Hospital Demographics. Three sections addressed individual respondent groups: 4) Questions for NDMS Point-of-Contact (POC) or Emergency Planner, 5) Questions for the Hospital Administrator, and 6) Questions for the Clinical Services Director. The final section documented information about the FCC Coordinator conducting the interview: 7) Interviewer Information.

Point-of-Contact or Emergency Planners (POC) - The majority of the questions were designed to capture the NDMS-related knowledge of this group of interviewees. The POCs were selected because they represent the primary contact for the FCC Coordinators, and act as liaisons between the NDMS hospitals and VA or DoD for all NDMS issues. In conducting their day-to-day duties, POCs frequently address issues related to emergency preparedness, and are knowledgeable about the implications of agreements as mandated in the Memorandums of Understanding (MOUs) that commit each hospital to the NDMS. The job title and role of each POC varied across hospitals. To determine the actual role of the POCs, initial survey questions requested definition of both job title and primary job responsibility. When responses were cross-tabulated for the 133 POC respondents, 62.4% of the POCs either held a job title of emergency or disaster planner and/or described their primary job responsibility as emergency preparedness coordinator (Appendix G, Table G.1). This distinction is important in interpreting the results of several questions discussed in Section III, Key Survey Findings.

Hospital Administrators – This second group of respondents included individuals such as the Chief Executive Officer and/or Chief Operating Officer. Hospital Administrators are responsible for the day-to-day operation of each



hospital, and hence are knowledgeable of each facility's capacity; such as: the number of licensed beds available, occupancy, and written NDMS procedures and protocols.

**Clinical Services Directors** - This group provided responses related to the NDMS hospitals' preparedness to address clinical issues of NDMS activation. The Clinical Services Directors generally were chiefs of staff, department heads, and/or directors of patient care.

Once the respondents identified themselves as belonging to one of the three interviewee groups in the questionnaire, the interviewers administered the applicable sections of the Needs Assessment Survey to each respondent.

**Respondent Demographics** - Each response was based on the respondent's knowledge of their hospital's level of emergency preparedness. Additionally, respondents who were familiar with the hospitals' operational structure allowed capture of the hospitals' capacity to respond in an NDMS activation.

**NDMS Federal Coordinating Center Area Demographics** - This section was designed to examine the hospitals' level of participation in NDMS-related exercises, and the type of exercise provided by the local FCC Coordinators. The information captured from the survey was used to examine the relationship between the NDMS training that hospitals had received thus far, and staffs' perceived preparedness. It was expected that those who participated in the NDMS-training exercises would report more confidence in their hospital's preparation for NDMS-activation.

**NDMS Hospital Demographics** - A number of hospital characteristics were identified in this section, to assist in the analysis of the relationships between participating hospitals' demographics, such as size, and ways these demographics may impact and/or influence key survey findings.

**Questions for NDMS Point-of-Contact (POC) or Emergency Planner** - Of the 32 questions that made up the survey questionnaire, 26 questions were specifically developed with the POC role defined as the target group, as outlined in the Training Needs Assessment Questionnaire (Appendix B). The POCs represented the NDMS hospitals' primary contact for the local FCC coordinators and have the institutional knowledge of each hospital's level of emergency preparedness and capacity to provide support in an NDMS activation. The POC's job title varied among hospitals. Questions developed for the POCs addressed each hospital's existing Emergency Operations Plan; staff training related to NDMS patient bed reporting and reception; the hospital's preparedness in various emergency activities; procedures and protocols; and the type of NDMS training needed by the staff, including training priorities for each facility.



Questions for Hospital Administrators - A separate set of questions targeting Hospital Administrators was developed that captured needed hospital information. Questions addressed hospitals' average occupancy rate, number of beds (licensed and staffed), written procedures or protocols for NDMS patient reception and retransfer, billing and reimbursement for NDMS patients, communication with media and NDMS patients' families, and multi-language services. Data from Hospital Administrators were largely used to examine reporting capabilities, and to observe how these capabilities or processes relate to, and/or differ from those of the other two respondent groups.

Questions for Clinical Services Directors - Questions developed for Clinical Services Directors addressed each department's preparedness to receive patients through NDMS, preparedness to medically treat illnesses and injuries associated with CBRNE, availability of information on CBRNE agents, training in incident command and on how to preserve the chain of custody for CBRNE, and written procedures for the department's responsibilities in the NDMS program.

Interviewer Information - The interviewers provided their contact information in this section, to enable verification of responses when needed, or further clarification during the data entry quality control process. Items included the interviewer's name, telephone number, email address, date and method of interview, and duration of interview.

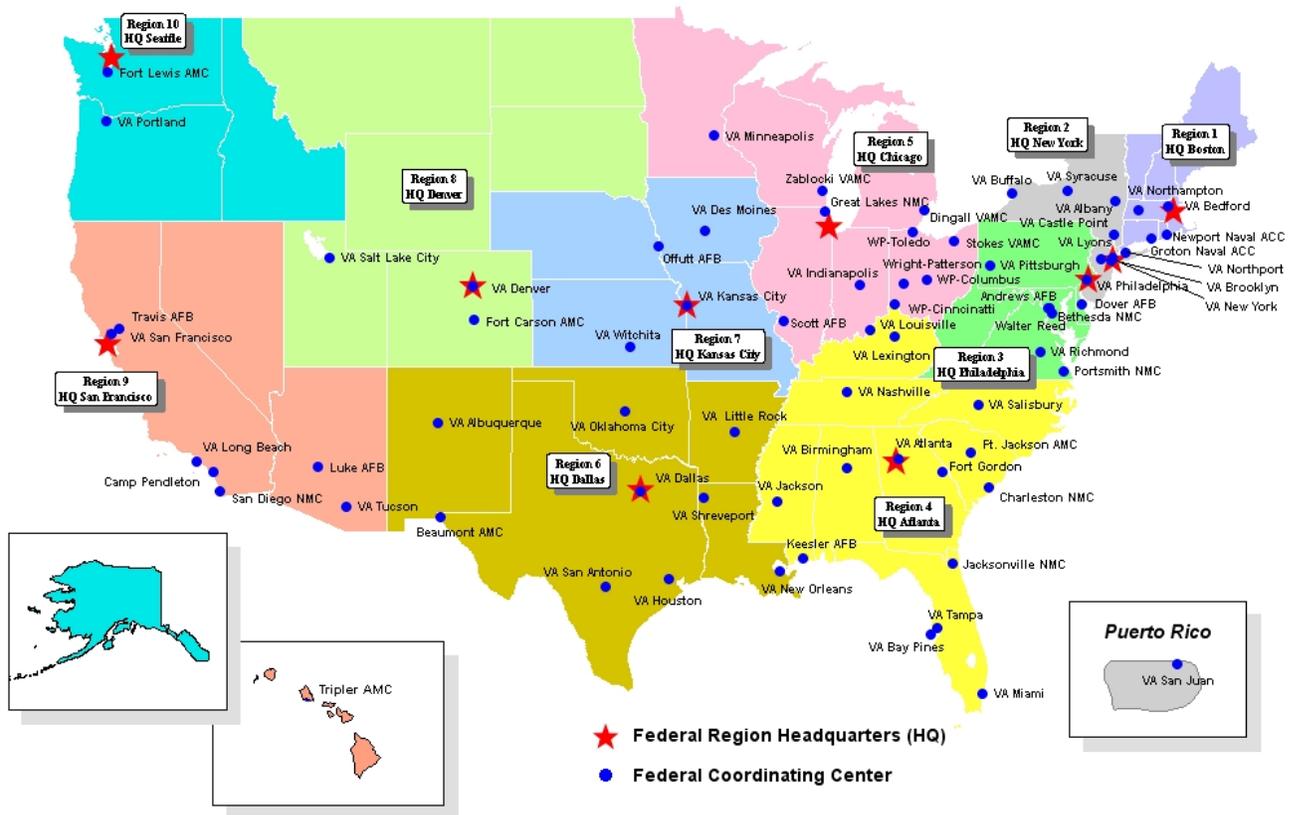
## **B. Sample Selection**

The VA and DoD provided the contractor with a database of 1,726 non-Federal hospitals with hospital names coded to ensure anonymity of hospitals. This list represented hospitals currently participating in the NDMS, i.e., those with an MOU on record with their local FCC. Postal Zip codes and maximum number of beds committed to NDMS were included, in order to stratify hospitals by geographic location and size. These characteristics represented important dimensions related to hospital resources and, by implication, levels of preparedness.

FCC locations were mapped by Federal Region, and are shown in Figure A.1: Federal Coordinating Centers Participating in the Training Needs Assessment of National Disaster Medical System, by Federal Region. The number of beds committed to NDMS in the MOU was used as a proxy of the size of the hospital in the sample selection process; however, actual bed-capacity data collected during the interview process was used for subsequent data analyses.



**Figure A.1 Federal Coordinating Centers Participating in the Training Needs Assessment of National Disaster Medical System, by Federal Region**



In order to generalize the findings of the Training Needs Assessment to the universe of NDMS hospitals, the contractor applied a stratified sampling procedure to achieve a representative survey sample.<sup>(22)\*</sup> The concept of stratification was applied such that the distribution of the survey sample would reflect the distribution of the NDMS-hospital universe by Federal Region and by hospital size. The study called for a sample size of 150 hospitals. This sampling universe was mapped across the 10 Federal Regions to determine the NDMS-hospital distribution. The number of NDMS hospitals within a specific Federal Region was divided by the total sample universe of 1,726 in order to determine the proportion of hospitals represented by that region. The derived proportion (in percent) for each region was used to determine the number of hospitals to be

\* References can be found at the end of this section.



selected out of the “targeted” 150 NDMS hospitals from each of the 10 Federal Regions. A list of randomly selected primary hospitals to be interviewed was assigned to each FCC location. Alternate hospitals, of equivalent size as the primary hospitals, were also randomly selected for each FCC, in the event FCC coordinators could not conduct interviews at one or more of the assigned primary hospitals. This back-up list of alternate hospitals was used after interviewers had exhausted every effort to conduct interviews at the primary NDMS-hospital sites. When drawing from the back-up list, interviewers were instructed to select replacement hospitals to match the size group of the hospital to be replaced.

In order to replicate the distribution of hospitals by size within each region, the contractor examined how the number of the NDMS’ large and small hospitals within each region varied, as defined by the maximum number of beds committed by each hospital. A 30-bed threshold was selected in order to distinguish large and small hospitals, because it represented the median for maximum beds committed among all non-Federal hospitals participating in the NDMS. The proportions of large and small hospitals were determined by dividing the number of large and small hospitals by the total number of NDMS hospitals within the same region. The derived rates were applied to the region sample to determine the number of large and small hospitals to be selected for each region.

The maximum number of interviews conducted by a single FCC was limited to five in order to minimize the administrative burden on the FCC interviewers. If an FCC interviewer was assigned more than five hospitals through the random selection process, the surplus was reassigned to other FCCs in the same region. This process ensured that interviews were distributed evenly among the FCCs in the region, while maintaining the Federal Region’s hospital size distribution characteristics.

The 157 selected hospitals represented 9.1 percent of the total number of NDMS non-Federal hospitals. An additional 245 hospitals were selected as alternate sites or back-up hospitals, in the event that interviews could not be conducted at the primary sampled hospitals.



### C. Data Collection

Of the 157 hospitals that were selected in the primary sample, 105 participated, for a participation rate of 66.9%. A total of 39 “back-up” hospitals also participated in the survey, for a total of 144 hospitals submitting survey responses. The “back-up” hospitals were not factored into the participation rate because it is not known how many back-up hospitals were contacted in order to obtain the 39 participants.

The POC for each hospital was responsible for contacting a Hospital Administrator and a Clinical Services Director and obtaining a completed survey from each. Of 144 participating hospitals in the survey sample, the following response rates were observed (see Table A.1).

**Table A.1 Response Rate**

<b>Respondent Category</b>	<b>Number Contacted</b>	<b>Number Responded</b>	<b>Response Rate</b>
Point of Contact	144	133	92.4%
Hospital Administrator	144	95	66.0%
Clinical Services Director	144	95	66.0%

### D. Data Processing

To ensure quality of the data, quality control procedures were followed throughout each level of data processing. All surveys submitted to the contractor were verified with the selected NDMS hospital list. A daily summary was produced to support the calculation of response rate, and included FCCs completing their assignments, and participating hospitals.

The survey was designed to meet the specifications of Remark Office<sup>®</sup> Version 5.5 software. When Remark OMR scanned the completed surveys, a database was generated that included variable name, type, and value label.

To ensure an error-free database, a two-step process of data verification was applied. Step one which was conducted during the scanning process, employed the software’s automatic detection capabilities to identify problem surveys, which were transcribed to clean surveys by hand. The software acknowledged numeric responses and converted them to the corresponding values. Written and open-ended responses, such as comments, were entered manually. Verification of numeric variables was conducted during data entry.



The software automatically flagged unclear entries based on preset rules. For example, if two choices were selected for a question with a single-choice response format, the software would detect conflicting input by highlighting the corresponding data box in green and displaying a “Multiple” message. This feature enabled the data entry personnel to detect and correct any errors. In instances where the interviewers submitted the copied or faxed version of the completed surveys, the software was not able to recognize the data during the scanning process. These problems were corrected by transcribing the submissions into fresh original questionnaires for rescanning. The second step of verification was conducted by randomly selecting 10% of the records and examining whether all responses were accurately recorded in the database. This process revealed that the database successfully captured the interviewee responses with an accuracy rate of 99%.

When all completed surveys were scanned, the database was imported into the Statistical Package for Social Sciences (SPSS)<sup>®</sup> database for analysis.

## E. Data Analysis

Three (3) major domains were examined: 1) Level of preparedness, 2) Perceived training needs and 3) Preferred training methods. Hospital demographics were also examined to identify potential impacts of these factors on the three domains.

### 1. Level of Preparedness

- **Perceived level of preparedness** - This was assessed using questions addressed to one or more respondents within each hospital who would have knowledge of a particular capability. Answers to these questions provided information on how well NDMS hospitals are prepared for an NDMS event. Areas identified with low levels of preparedness imply potential training needs.
- **Established procedures and protocols** - Responses to these questions would reveal whether procedures and protocols were available at NDMS hospitals and what areas these procedures and protocols covered.
- **Training received** - The NDMS-related training that hospitals received, how recently this training or exercise was offered, and what topics were covered in the training sessions was assessed based on POC responses. Understanding the types of training or exercises in which hospitals participate may help determine emergency preparedness, as well as the preferred method of training that would effectively address the needs of NDMS hospitals.



## **2. Perceived Training Needs**

The second domain of analysis focused on the training needs for NDMS-related activities. These training needs covered a variety of critical activities in an NDMS-activation event, such as hospital staffs' roles and responsibilities and coordination with other organizations including government agencies.

## **3. Perceived Training Priorities**

The third domain identified the POCs perceptions of what the NDMS training priorities should be. These were then compared to the existing level of preparedness and the training needs that were reported by the POCs.

## **4. Preferred Training Methods**

A fourth domain focused on the training methods that respondents perceived would be most effective for conveying the information needed to enable hospitals to respond appropriately during an NDMS activation.

## **Hospital Demographics**

Analysis of hospital demographics provided an overview of NDMS hospitals' characteristics, such as size, regional location, type of service area, hospital specialty, financial ownership, and number of full-time employees. Please refer to Appendix D for further details. Additional analysis was conducted to determine how these factors affected the three domains the study was designed to measure.

In summary, the survey was designed with procedures in place that would ensure the validity of the instrument, reliability of the data, and meaningful analyses.

The Training Needs Assessment Questionnaire was developed as a collaborative effort between; VA, DoD, the contractor and the subcontractor. Previous studies and qualified SMEs provided the content that was the basis of the questionnaire. It was designed to identify the areas where hospitals require training in order to respond appropriately to NDMS activation.



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## **APPENDIX B**

**TRAINING NEEDS ASSESSMENT  
SURVEY QUESTIONNAIRE**

**TRAINING NEEDS ASSESSMENT  
FOR THE NATIONAL DISASTER MEDICAL SYSTEM (NDMS)  
HOSPITALS**



**TRAINING NEEDS ASSESSMENT  
FOR THE NATIONAL DISASTER MEDICAL SYSTEM (NDMS) HOSPITALS**

**INSTRUCTIONS FOR CONDUCTING THE SURVEY**

**Introduction to the survey**

Please use the language provided (*italics*) as a guide. You can use your own words as long as the content is provided to the respondent.

- **Confidentiality of responses to the survey**  
*Your name will not be recorded. Confidentiality will be maintained and individual responses will be combined across hospitals so that neither individuals nor hospitals are identifiable in the results. This is to ensure that responses are free of any potential bias, and that you can feel free to be candid in your responses.*
  
- **Preliminary set-up of the questionnaire following introduction**  
*The questionnaire includes sections specific to your job title and you will be asked to answer selected questions. It is designed to take less than an hour to complete the survey. Most of the questions are structured as multiple-choice. I will read you the question and the response available to you, and record your responses. The first few questions provide us with basic information about your background and your position within the organization.*

**After Section I, please keep in mind there are three groups of interviewees: 1) NDMS Point-of-Contact or Emergency Planner, 2) Administrator and 3) Clinical Service Director. Please follow the matrix to locate sections designed for the relevant group of interviewees.**

Person	Section	I	II	III	IV	V	VI	VII
Interviewee	Point-of-Contact/Emergency Planner <span style="border: 1px solid black; padding: 2px;">POC</span>	•	•	•	•			
	Administrator <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">ADM</span>	•	•	•		•		
	Clinical Service Director <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">CS</span>	•		•			•	
Interviewer								•

**Interviewers should maintain neutrality to all respondents' answers by withholding personal comments. At all times, please display courtesy and appreciation for each interviewee's time and participation.**

## TRAINING NEEDS ASSESSMENT FOR NDMS HOSPITALS

Instruction: Please use black pencil or pen to record all responses. Please print legibly. When applicable, please mark responses completely, like this ●, not like this ⊗ or ∅.

### SECTION I: INTERVIEWEE DEMOGRAPHICS (This section should be answered by all interviewees)

POC   
  ADM   
  CS

1. Please indicate your job title: \_\_\_\_\_
  
2. Please briefly describe your primary job responsibility:  
 \_\_\_\_\_  
 \_\_\_\_\_
  
3. Please indicate the group that *best* describes your role/position relevant to NDMS.

NDMS Point-of-Contact or Emergency Planner (If this category is selected, please stop after Question 26)	<input type="checkbox"/> POC	○
Administrator (If this category is selected, please skip questions 17-26 and continue on Questions 27 to 31)	<input type="radio"/> ADM	○
Clinical Service Director (If this category is selected, please fill out Sections I, III, and VI)	<input type="checkbox"/> CS	○

### SECTION II: NDMS FEDERAL COORDINATING CENTER (FCC) AREA DEMOGRAPHICS (This section should be answered by both NDMS Point-of-Contact/Emergency Planner and Administrator)

POC   
  ADM

4. What is your FCC location?  
 \_\_\_\_\_
  
5. Did this hospital participate in the last NDMS patient reception exercise?
 

Yes	No	Don't know
○	○	○

If yes, please indicate the level of exercise, date of exercise, and topics that were covered.

	Tabletop exercise	Functional area drill	Team training	Other related event (Please specify)
Level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Date	_____			

Topic	Covered
a. NDMS alert and activation notifications	<input type="radio"/>
b. Communications with the FCC regarding incoming patients	<input type="radio"/>
c. Communications with the local Patient Reception Team	<input type="radio"/>
d. Communications with the nearest military medical facility regarding military patients	<input type="radio"/>
e. Reporting of NDMS admissions and discharges to the FCC	<input type="radio"/>
f. Reporting of beds available to the FCC	<input type="radio"/>
g. Discharge/transfer home of NDMS patients requiring additional medical treatment	<input type="radio"/>
h. Discharge/travel of NDMS patients not requiring additional medical treatment	<input type="radio"/>
i. Billing and reimbursement processes and procedures	<input type="radio"/>

6. How frequently does the hospital staff attend NDMS planning meetings/training sessions?

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7. Does this hospital have a designated NDMS Point-of-Contact?

Yes	No	Don't know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Please indicate the date that the hospital signed the NDMS Memorandum of Understanding.

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**SECTION III: NDMS–PARTICIPATING HOSPITAL DEMOGRAPHICS (This section should be answered by all interviewees)**

POC	ADM	CS
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9. Hospital Code: \_\_\_\_\_

10. City: \_\_\_\_\_ 11. State: \_\_\_\_\_ 12. Zip code: \_\_\_\_\_

13. Hospital's service area:

Urban/Suburban	Rural
<input type="radio"/>	<input type="radio"/>

14. Hospital's specialty:

General	Psychiatric	Pediatric	Other (Please specify)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____			

15. Hospital's form of ownership:

For-profit	Non-profit	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. How many full-time hospital employees work at this hospital facility?

<500	500-1000	>1000
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SECTION IV: QUESTIONS FOR NDMS POINT-OF-CONTACT /EMERGENCY PLANNER (This section should be answered by either hospital's NDMS Point-of-Contact or Emergency Planner *only*)**

POC

17. Are you aware of your role as an employee of this hospital in the event the NDMS is activated and your hospital is called upon to participate?

a. Aware of my hospital's designation as an NDMS hospital and aware of my role	<input type="radio"/>
b. Not aware of my role but aware of my hospital's designation as an NDMS hospital	<input type="radio"/>
c. Not aware of either my role or my hospital's designation as an NDMS hospital	<input type="radio"/>

18. Does your hospital's Emergency Operations Plan include written procedures for NDMS support?

a. Don't know if we have one	<input type="radio"/>
b. Have one but never tested	<input type="radio"/>
c. Have one, it is tested every 1 to 3 years, but not fully integrated into the greater community emergency response plan	<input type="radio"/>
d. Have one, it is tested every 1 to 3 years, and it is fully integrated into the greater community emergency response plan	<input type="radio"/>

19. In your opinion, is the hospital staff that would support an NDMS operation knowledgeable on their roles in the Incident Command System?

a. Unaware of Hospital Emergency Incident Command System (HEICS)	<input type="radio"/>
b. Some of staff prepared	<input type="radio"/>
c. Most of staff prepared	<input type="radio"/>
d. Fully prepared	<input type="radio"/>



Activity	Trained		
	Yes	No	Don't Know
i. Medical treatment of illnesses and injuries associated with the following WMD agents:			
1. Biological	0	0	0
2. Radiological	0	0	0
3. Chemical	0	0	0
4. Explosives	0	0	0
j. Patient tracking	0	0	0
k. Disaster welfare inquiry/coordination with Red Cross	0	0	0
l. NDMS bed reporting	0	0	0
m. Discharge planning for NDMS	0	0	0
n. NDMS patient family support	0	0	0
o. Your hospital's responsibilities in a local NDMS patient reception operation	0	0	0

23. This question pertains to training provided at the hospital level. In your opinion, to what extent does your hospital personnel need to be trained in the following topics (Please indicate from 1 through 5 with 1 being "not needed" and 5 being "highly needed" for each topic)?

Topic	Need for Training				
	1=Not needed	2	3	4	5=Highly needed
a. Incident command	0	0	0	0	0
b. Protocols specific to NDMS	0	0	0	0	0
c. Mutual aid agreements & interagency roles and responsibilities	0	0	0	0	0
d. Chain of command structure at the Federal, State and local levels	0	0	0	0	0

Topic	Need for Training				
	1=Not needed	2	3	4	5=Highly needed
	1	2	3	4	5
e. Call down lists (Who to call, when)	0	0	0	0	0
f. Working with the media/developing press releases	0	0	0	0	0
g. Working in Personal Protection Equipment or protective clothing	0	0	0	0	0
h. Proper handling and notification procedures for laboratory specimens	0	0	0	0	0
i. Disaster/Multiple casualty management	0	0	0	0	0
j. Recognizing and treating the psychological effects from an incident involving WMD:					
1. Biological	0	0	0	0	0
2. Radiological	0	0	0	0	0
3. Chemical	0	0	0	0	0
4. Explosives	0	0	0	0	0
k. Medical treatment of illnesses and injuries associated with the following WMD agents:					
1. Biological	0	0	0	0	0
2. Radiological	0	0	0	0	0
3. Chemical	0	0	0	0	0
4. Explosives	0	0	0	0	0
l. Patient tracking	0	0	0	0	0
m. Disaster welfare inquiry/coordination with Red Cross	0	0	0	0	0
n. NDMS bed reporting	0	0	0	0	0
o. Discharge planning for NDMS	0	0	0	0	0
p. NDMS patient family support	0	0	0	0	0
q. Your hospital's responsibilities in a local NDMS patient reception operation	0	0	0	0	0

24. Please select three topics from the following list that are training priorities for your facility.

<b>Topic</b>	<b>Priority</b>
a. Incident command	o
b. Protocols specific to NDMS	o
c. Mutual aid agreements & interagency roles and responsibilities	o
d. Chain of command issues at the Federal, State and local levels	o
e. Call down lists (Who to call, when)	o
f. Working with the media/developing press releases	o
g. Working in Personal Protection Equipment or protective clothing	o
h. Proper handling and notification procedures for laboratory specimens	o
i. Disaster/Multiple casualty management	o
j. Recognizing and treating the psychological effects from an incident involving WMD:	
1. Biological	o
2. Radiological	o
3. Chemical	o
4. Explosives	o
k. Medical treatment of illnesses and injuries associated with the following WMD agents:	
1. Biological	o
2. Radiological	o
3. Chemical	o
4. Explosives	o
l. Patient tracking	o
m. Disaster welfare inquiry/coordination with Red Cross	o

Topic	Priority
n. NDMS bed reporting	o
o. Discharge planning for NDMS	o
p. NDMS patient family support	o
q. Your hospital's responsibilities in a local NDMS patient reception operation	o

25. In your opinion, is this hospital prepared to carry out its responsibilities in the NDMS program? Please indicate your confidence level pertaining to this question on a scale of 1 through 5 with 1 being "not confident at all" and 5 being "highly confident".

1=Not confident at all

5=Highly confident

o                      o                      o                      o                      o

26. Please rank the top three methods you feel are the most effective for NDMS related training

a. Self study courses	o
b. Classroom/conference	o
c. Travel to workshop and conferences	o
d. In-house workshops	o
e. Satellite conferences	o
f. Video	o
g. Internet	o
h. Software/CD	o
i. Tabletop exercises	o
j. Functional exercise	o
k. Full-scale exercises	o
l. Other (Please identify): _____	o

*That was the survey's last question for NDMS Point of Contact/Emergency Planner.*

Please write any additional comments interviewee may have on the training needs in the space below and on the back if needed:

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*Thank you very much for your time and the information you've shared!*

**Interviewer, please fill out Section VII on Page 15.**

**SECTION V: QUESTIONS FOR HOSPITAL ADMINISTRATOR (This section should be answered by the Hospital Administrator *only*. NDMS Point-of-Contact should stop here and Clinical Service Director skips to Question 32)**

ADM

27. What is your hospital's average percentage of occupancy by:

- a. Yearly Average \_\_\_\_\_
- b. First Quarter (January-March) \_\_\_\_\_
- c. Second Quarter (April-June) \_\_\_\_\_
- d. Third Quarter (July-September) \_\_\_\_\_
- e. Fourth Quarter (October-December) \_\_\_\_\_

28. Number of beds in hospital:

- a. Licensed beds \_\_\_\_\_
- b. Staffed beds \_\_\_\_\_

29. Has your hospital developed a written procedure or protocols for any of the following areas?

Area	Yes	No	Don't Know
a. Retransfer of NDMS patients that cannot be managed on-site	o	o	o
b. Discharge and follow-up of NDMS patients	o	o	o
c. Billing and reimbursement for NDMS patients	o	o	o
d. Mortuary services, e.g. storage and transport of contaminated bodies	o	o	o
e. Additional supplies & pharmaceuticals required	o	o	o
f. Additional staff and equipment required, e.g. ventilators	o	o	o
g. Heightened security, e.g. identification of authorized personnel	o	o	o
h. Communication with media, NDMS patients' families	o	o	o
i. Multi-language services as needed (e.g., Spanish, Japanese, etc.)	o	o	o



**SECTION VI: QUESTIONS FOR CLINICAL SERVICE DIRECTOR (This section should be answered by Clinical Service Director *only*)**



32. Please indicate your level of agreement with the following statements regarding your department's emergency preparedness for a WMD event.

**SA=Strongly Agree; A=Agree; N=Neutral; D=Disagree; SD=Strongly Disagree**

		SA	A	N	D	SD
a.	Our department is prepared to receive patients from NDMS	<input type="radio"/>				
b.	Our department is prepared to medically treat illnesses and injuries associated with the following WMD agents:					
	1. Chemical events	<input type="radio"/>				
	2. Biological events	<input type="radio"/>				
	3. Radiological/Nuclear events	<input type="radio"/>				
	4. Explosive events	<input type="radio"/>				
c.	Our department has readily available information on hazardous materials and how to use these information resources for:					
	1. Chemical events	<input type="radio"/>				
	2. Biological events	<input type="radio"/>				
	3. Radiological/Nuclear events	<input type="radio"/>				
	4. Explosive events	<input type="radio"/>				
d.	Our department staff have been trained on how to preserve the chain of custody for:					
	1. Chemical events	<input type="radio"/>				
	2. Biological events	<input type="radio"/>				
	3. Radiological/Nuclear events	<input type="radio"/>				
	4. Explosive events	<input type="radio"/>				
e.	Our department has been trained in the concept of incident command	<input type="radio"/>				
f.	Our department has had written procedures for its responsibilities in the NDMS program	<input type="radio"/>				





## **APPENDIX C**

### **INTERVIEWER MATERIALS**



**FACT SHEET FOR NDMS FEDERAL  
COORDINATING CENTER (FCC)  
AREA COORDINATORS**



## FACT SHEET FOR NDMS FEDERAL COORDINATING CENTER (FCC) AREA COORDINATORS

### National Disaster Medical System (NDMS) Training Needs Assessment

#### Background

The Department of Veterans Affairs (VA) and Department of Defense and (DoD) will be assessing the training needs of the non-Federal health care facilities (hereafter referred to as NDMS hospitals). The project is designed to identify the types of training that will enable the NDMS hospital to plan for, receive and manage civilian or military casualties generated from events that include Weapons of Mass Destruction (WMD). The assessment will be accomplished through interviews conducted on site by VA and DoD representatives at a select sample of the approximately 2,000 facilities currently participating in NDMS.

#### Purpose

The survey will focus on the training and education needed to assure that facilities participating in NDMS are prepared to meet their responsibilities for managing casualties of incidents including those involving WMD. The results will be used to develop training materials and a training program for all NDMS hospitals. Your participation and leadership are essential to this project, so that effective training can be provided to the nation's participating NDMS hospitals.

#### Scope

A sample of 150 hospitals has been selected to participate in the survey. These were selected based on a number of demographic variables such as size and region, to get a cross section of the types of facilities that are participating in the NDMS. The survey seeks information regarding current institutional knowledge pertinent to NDMS-related procedures and institutional management of NDMS patients.

#### Survey Procedure

1. Training on the survey and its administration will be available by conference call. NDMS Area Coordinators should choose one of two dates based on their availability: Both conference calls will use 1-800-767-1750 access code 22998#.
  - Thursday, January 13<sup>th</sup> from 1:00 p.m. to 3:00 p.m. Eastern time.
  - Friday, January 14<sup>th</sup> from 2:00 p.m. to 4:00 p.m. Eastern time.
2. By Friday, January 14<sup>th</sup>, each NDMS Area Coordinator will be given a list of five (5) NDMS hospitals to survey by his/her agency representative. The list will include two or three primary and several alternate hospitals, in case any of the primary hospitals are unable to participate in the survey.



3. Beginning on Monday, January 17<sup>th</sup>, 2005 NDMS Area Coordinators should notify by phone the Point-of-Contact (POC) at each of the selected NDMS hospitals to request their participation in the survey. The NDMS Area Coordinator should provide the “Fact Sheet for NDMS Hospitals” and the “Needs Assessment Survey” by email or FAX. The POC and other hospital staff are encouraged to review the Needs Assessment Survey in advance of the interview in order to gather information or prepare answers to questions in the survey.

4. The survey consists of thirty-two (32) questions to be answered by the NDMS POC/Emergency Planner, a key Hospital Administrator and a Clinical Service Director. Each interview will last no longer than one hour. The NDMS Area Coordinators should interview each professional separately and record the interviewee’s job title accordingly. A log sheet will be kept by each interviewer to record progress in obtaining permission and conducting the interview.

5. Interviewees will be asked to answer the questions to the best of their ability. They should be assured that they are not being tested on their personal knowledge, competence, or performance. If there are questions about areas for which they have little or no knowledge, they need only state that they do not know. Participation is completely voluntary and confidential. Confidentiality will be maintained and individual responses will be combined across hospitals so that neither individuals nor hospitals are identifiable in the results. This is to ensure that responses are free of any potential bias and interviewees can feel free to be candid in their responses. Interviewers should maintain neutrality to all respondents’ answers by withholding personal comments. At all times, interviewers should display courtesy and appreciation for the interviewee’s time and participation.

6. NDMS Area Coordinators will be sent pre-addressed Fed-Ex mailers to ship the completed questionnaires directly to the contractor who will handle the data analysis and reporting. These should be sent as a batch when the NDMS Area Coordinator has completed all of his/her assigned interviews.

### **Deadline**

All interviews must be completed and surveys Fed-Ex’ed back to the contractor by Thursday, February 3rd, 2005.

### **Agency Representatives**

Department of Defense - Lt.Col. Bill Kormos, 703-614-4158,  
[William.Kormos@ha.osd.mil](mailto:William.Kormos@ha.osd.mil)

Department of Veterans Affairs – Pete Brewster, 304-264-4807,  
[Peter.Brewster2@med.va.gov](mailto:Peter.Brewster2@med.va.gov)



## Definitions

**Chemical, Biological, Radiological/Nuclear and Explosives (CBRNE)** – Types of weapons of mass destruction (see below for a definition of WMD).

**Federal Coordinating Center (FCC)** - A facility located in a metropolitan area of the United States responsible for day-to-day coordination of planning and operations in one or more assigned geographic NDMS Patient Reception Areas (PRA). FCCs recruit hospitals and maintain local non-Federal hospital participation in the NDMS; assist in the recruitment, training, and support of DMATs; coordinate exercise development and emergency plans with participating hospitals and other local authorities in order to develop patient reception, transportation, and communication plans; and, during activation, coordinate the reception and distribution of patients being evacuated to the area

**Hospital Capacity** - The maximum number of stable or stabilized patients by medical regulating category that a hospital can receive, evaluate, and admit within a specified 24-hour period.

**National Disaster Medical System** - An asset sharing partnership among the Department of Homeland Security (DHS), Department of Defense (DoD), the Department of Veterans Affairs (VA) and the Department of Health and Human Services (HHS) working with State and local governments, and the private sector. It is chartered in a Memorandum of Understanding (MOU) among these agencies. The NDMS is designed to fulfill three main objectives: (1) To provide supplemental health and medical assistance in domestic disasters at the request of State and local authorities. (2) To evacuate patients who cannot be cared for in the disaster area to designated locations elsewhere in the nation. (3) To provide a nationwide network of voluntary, pre-identified, non-Federal acute care hospitals to provide definitive care for the victims of domestic disaster or military contingency that exceeds the medical care capability of the affected local, State, or Federal medical system.

**Patient Reception Area** - A geographic locale containing one or more airfields; adequate patient staging facilities; and adequate local patient transport assets that support patient reception and transport to a group of voluntary, pre-identified, non-Federal, acute care hospitals capable of providing definitive care for victims in a domestic disaster, emergency, or military contingency.

**Throughput** - Reception area capacity or the maximum number of stable or stabilized patients, by medical regulating category, that can be accommodated at a patient reception site, triaged, staged, transported and admitted to area hospitals within a specific 24-hour period.

**Weapon of Mass Destruction** - (1) Any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors; a disease organism; or radiation or radioactivity. (2) (A) Any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, or a missile having an explosive or incendiary charge of more than one quarter ounce, or mine or device similar to the above; (B) poison gas; (C) any



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weapon involving a disease organism; or (D) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.



**FACT SHEET FOR NDMS  
PARTICIPATING HOSPITALS**



## FACT SHEET FOR NDMS PARTICIPATING HOSPITALS

### National Disaster Medical System (NDMS) Training Needs Assessment

#### Background

The Department of Veterans Affairs (VA) and Department of Defense and (DoD) will be assessing the training needs of the non-Federal health care facilities (hereafter referred to as NDMS hospitals). The project is designed to identify the types of training that will enable the NDMS hospital to plan for, receive and manage civilian or military casualties generated from events that include Weapons of Mass Destruction (WMD). The assessment will be accomplished through interviews conducted on site by VA and DoD representatives at a select sample of the approximately 2,000 facilities currently participating in NDMS.

#### Purpose

The survey will focus on the training and education needed to assure that facilities participating in NDMS are prepared to meet their responsibilities for managing casualties of incidents including those involving WMD. The results will be used to develop training materials and a training program for all NDMS hospitals. Your participation and leadership are essential to this project so that effective training can be provided to the nation's participating NDMS hospitals.

#### Scope

A sample of 150 hospitals has been selected to participate in the survey. These were selected based on a number of demographic variables such as size and region, to get a cross section of the types of facilities that are participating in the NDMS. The survey seeks information regarding current institutional knowledge pertinent to NDMS-related procedures and institutional management of NDMS patients. The survey consists of thirty-two (32) questions to be answered by the NDMS POC/Emergency Planner, a key Hospital Administrator and a Clinical Service Director. The interview will last no longer than one hour for each interviewee.

#### Process

The survey will be conducted as an interview administered by a representative of the VA and DoD. Participation is completely voluntary. Confidentiality will be maintained and individual responses will be combined across hospitals so that individuals are not identifiable in the results. This is to ensure that responses are free of any potential bias and respondents can feel free to be candid in their responses. This survey is not being used to test personal knowledge, competence, or performance. If there are questions for which interviewees have little or no knowledge, they should state that they do not know. Interviewees are asked to review the attached questionnaire in advance of the interview and to seek answers to questions in the survey that they are not knowledgeable about.



## Contact

For more information, please contact your local NDMS Area Coordinator or Pete Brewster, Department of Veterans Affairs, 304-264-4807 or [Peter.Brewster2@med.va.gov](mailto:Peter.Brewster2@med.va.gov).

## Definitions

**Chemical, Biological, Radiological/Nuclear and Explosives (CBRNE)** – Types of weapons of mass destruction (see below for a definition of WMD).

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**Hospital Capacity** - The maximum number of stable or stabilized patients by medical regulating category that a hospital can receive, evaluate, and admit within a specified 24-hour period.

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**Patient Reception Area** - A geographic locale containing one or more airfields; adequate patient staging facilities; and adequate local patient transport assets that support patient reception and transport to a group of voluntary, pre-identified, non-Federal, acute care hospitals capable of providing definitive care for victims in a domestic disaster, emergency, or military contingency.

**Throughput** - Reception area capacity or the maximum number of stable or stabilized patients, by medical regulating category, that can be accommodated at a patient



reception site, triaged, staged, transported and admitted to area hospitals within a specific 24-hour period.

**Weapon of Mass Destruction** - (1) Any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors; a disease organism; or radiation or radioactivity. (2) (A) Any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, or a missile having an explosive or incendiary charge of more than one quarter ounce, or mine or device similar to the above; (B) poison gas; (C) any weapon involving a disease organism; or (D) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.



**GUIDELINES FOR CONDUCTING  
INTERVIEWS**



## GUIDELINES FOR CONDUCTING INTERVIEWS

### TRAINING NEEDS ASSESSMENT FOR THE NATIONAL DISASTER MEDICAL SYSTEM (NDMS) HOSPITALS

While the scope of the survey can be comprehensive, carrying out a successful interview can be accomplished with a little time and preparation. The following guidelines will assist the interviewer (you) in completing the survey and avoiding obstacles.

1. **PREPARATION, PREPARATION, PREPARATION**
2. Self-Introduction
3. Carrying Out the Survey
4. Closing the Interview
5. After the Interview

#### I. IN-PERSON INTERVIEW

The rates of interviewees completing the survey tend to be highest when the interview is conducted face-to-face. The completion rates in federally sponsored surveys conducted using a personal interview approach have ranged from 85 to over 95 percent, while telephone interviews have response rates of 70 to 85 percent. These rates suggest that in-person interviews are more advantageous in getting the survey completely filled out. The following directions will help to provide interview results that are as complete and reliable as possible.

#### 1. PREPARATION, PREPARATION, PREPARATION

Preparation is the key ingredient in carrying out the interview successfully. Familiarize yourself with the survey. You may want to practice reading the questions out loud to improve the flow and speed of the survey. Identify the sections that are specifically designed for each audience (Point-of-Contact/Emergency Planner, Administrator, and Clinical Service Director) to make sure the correct sections are used. A note: Be careful asking "why" questions. These questions may cause respondents to feel defensive, e.g., that they have to justify their response, which may inhibit their responses to this and future questions. Dress code should be appropriate to your official capacity. Be prompt for interviews, and appreciative of interviewees' availability. We are asking key people to complete this survey, and their time must be a priority.

#### 2. SELF-INTRODUCTION

**Create a script to introduce yourself.** Include your name and who you represent, e.g., the local Federal Coordinating Center (FCC).

Also, before you get started:



**Choose a setting with little distraction.** If possible, ask the interviewee for a location that is conducive to concentration, such as a conference room in the hospital. Avoid locations with loud noises or people moving about.

**Explain the purpose of the interview.** State clearly that the purpose of the survey is to assess the training needs of the hospital in preparing to treat mass casualties, including those resulting from Weapons of Mass Destruction (See page 1 of the survey, “Instructions for Conducting the Survey”).

**Address terms of confidentiality.** Note the terms of confidentiality (See page 1 of the survey, “Instructions for Conducting the Survey”). Explain that the hospital and interviewee’s name will not be recorded.

**Explain the format of the interview.** Explain the type of interview you are conducting

and its nature, e.g., multiple choice (Refer to page 1 of the survey, “Instructions for Conducting the Survey/Preliminary set-up of the questionnaire following introduction”). If participants may ask questions, let them know if they should ask questions as they occur or wait until the end of the interview.

**Indicate how long the interview usually takes.** Remind the interviewee that the survey will take less than an hour.

**Ask the interviewee if he/she has any questions** before you both get started with the interview.

### 3. CARRYING OUT THE SURVEY

**Determine which sections/questions of the survey are appropriate for the interviewee.** The survey is designed for three different groups of interviewees. Apply the correct sections for the appropriate interviewee to avoid confusion.

**Read Questions and response choices clearly.** Maintain a moderate pace of reading – not rushed or too deliberate. Tell the participant to ask you to repeat the question and answer choices whenever needed.

**Show response choices to interviewees.** Some questions contain numerous choices for interviewees to choose from. Feel free to let participants look at the choices and indicate their responses accordingly.

**Uncertainty of meaning.** Should the interviewee ask for further information about terms or questions, and you are uncertain of the answer, ask them to respond to the best of their ability without adding too much of your own interpretation. State “I Don’t Know” if necessary.

**Ask one question at a time.** This will minimize recording error and prevent confusion.

**Attempt to remain as neutral as possible.** Don't show strong emotional reactions to the interviewee’s responses. Neutrality will encourage more accurate responses to your questions.

**Encourage responses** with occasional nods of the head, "uh huh", etc. or “thank you”.



**Be careful about the timing of note taking.** If you jump to take a note, it may appear as if you're surprised or very pleased about an answer, and this reaction may influence answers to future questions.

**Provide transition between major topics,** e.g., "We've been talking about (some topic) and now I'd like to move on to (another topic)".

**Manage the interview time and progress.** Politely bring respondents back to the topic if they stray, take too long to answer a question, or perhaps ask too many questions unrelated to the interview.



#### 4. CLOSING THE INTERVIEW

**Show gratitude.** Thank interviewees for taking the time from their busy schedule to provide you with information that is important to our national safety.

**Tell interviewees how to get in touch with you later if needed.** Provide interviewees with information on how to best contact you should they have further questions.

#### 5. AFTER THE INTERVIEW

**Ascertain that correct sections were asked.** Check to ensure position of the interviewee matches the section used (Point-of-Contact/Emergency Planner, Administrator, and Clinical Service Director). Comment on any irregularities.

**Write down any comments made during the interview.** Did the interview end abruptly? Were there any areas that may require clarification?

## II. PHONE INTERVIEW

Phone interviews certainly have advantages over in-person interviews. This method is less time-consuming and more cost-effective. Some interviewees and interviewers may prefer phone interviews to In-person interviews because they are easier and simpler to conduct. However, response rates tend to be lower than with In-person interviews. The interviewee will be more likely to end the survey earlier than planned, leaving some questions unanswered. For the purpose of assessing the training needs of NDMS participating hospitals, it is essential to have the survey filled out as completely as possible. Therefore, phone interviews should be used with caution and as a limited alternative to in-person interviews.

#### 1. PREPARATION, PREPARATION, PREPARATION

Preparation is STILL the key ingredient in carrying out the interview successfully. Prepare yourself just as you did with the in-person interview. Be just as prompt for the interviews, and appreciative of interviewees' availability.

#### 2. SELF-INTRODUCTION

**Create a script to introduce yourself.** Include your name and who you represent, e.g., the local Federal Coordinating Center (FCC).

**Suggest a setting with little distraction.** If possible, suggest that interviewee situates him/herself in a location that is conducive to concentration, such as a conference room in the hospital. Avoid locations with loud noises or people moving about.

**Explain the purpose of the interview.** State clearly that the purpose of the survey is to assess the training needs of the hospital in preparing to treat mass casualties



include those resulting from Weapons of Mass Destruction (See page 1 of the survey, “Instructions for Conducting the Survey”).

**Address terms of confidentiality.** Note the terms of confidentiality (See page 1 of the survey, “Instructions for Conducting the Survey”). Explain that the hospital and interviewee’s name will not be recorded.

**Explain the format of the interview.** Explain the type of interview you are conducting and its nature, e.g., multiple choice (Refer to page 1 of the survey, “Instructions for Conducting the Survey/Preliminary set-up of the questionnaire following introduction”). If participants may ask questions, let them know if they should ask questions as they occur or wait until the end of the interview.

**Indicate how long the interview usually takes.** Remind the interviewee that the survey will take less than an hour.

**Ask the interviewee if he/she has any questions** before you both begin with the interview.

### 3. CARRYING OUT THE SURVEY

**Determine which sections/questions of the survey are appropriate for the interviewee.** The survey is designed for three different groups of interviewees. Apply the correct sections for the appropriate interviewee to avoid confusion.

**Read Questions and response choices clearly.** Maintain a moderate pace of reading – not rushed or too deliberate. Tell the participant to ask you to repeat the question and answer choices whenever needed.

**Show response choices to interviewees.** Some questions contain numerous choices for interviewees to choose from. Feel free to let participants look at the choices and indicate their responses accordingly.

**Uncertainty of meaning.** Should the interviewee ask for further information about terms or questions, and you are uncertain of the answer, ask them to respond to the best of their ability without adding too much of your own interpretation. State “I Don’t Know” if necessary.

**Ask one question at a time.** This will minimize recording error and prevent confusion.

**Attempt to remain as neutral as possible.** Don't show strong emotional reactions to the interviewee’s responses. Neutrality will encourage more accurate responses to your questions.

**Encourage responses** with occasional acknowledgements, "uh huh", etc. or “thank you”.

**Be careful about the timing of note taking.** If you jump to take a note, it may appear as if you're surprised or very pleased about an answer, and this reaction may influence answers to future questions.

**Provide transition between major topics,** e.g., "We've been talking about (some topic) and now I'd like to move on to (another topic)".



**Manage the interview time and progress.** Politely bring respondents back to the topic if they stray, take too long to answer a question, or perhaps ask too many questions unrelated to the interview.

#### 4. CLOSING THE INTERVIEW

**Show gratitude.** Thank interviewees for taking the time from their busy schedule to provide you with information that is important to our national safety.

**Tell interviewees how to contact you later if needed.** Provide interviewees with information on how to best reach you should they have further questions.



## 5. AFTER THE INTERVIEW.

**Ascertain that correct sections were asked.** Check to ensure position of the interviewee matches the section used (Point-of-Contact/Emergency Planner, Administrator, and Clinical Service Director). Comment on any irregularities.

**Write down any comments made during the interview.** Did the interview end abruptly? Were there any areas that may require clarification?



**INSTRUCTIONS FOR COMPLETING  
THE SURVEY**



TRAINING NEEDS ASSESSMENT  
FOR THE NATIONAL DISASTER MEDICAL SYSTEM (NDMS) HOSPITALS

**INSTRUCTIONS FOR CONDUCTING THE SURVEY**

**Introduction to the survey**

Please use the language provided (*italics*) as a guide. You can use your own words as long as the content is provided to the respondent.

- Objective of the survey  
*The survey is intended to assess the need for training to prepare hospitals to participate in the event that the NDMS is activated following a chemical, biological, radiological, nuclear, and explosive (CBRNE) incident. A CBRNE incident is one where mass casualties are inflicted as the result of a chemical, biological, radiological, nuclear, or explosive weapon of mass destruction (WMD). WMD and CBRNE are the same for our purposes. Ideally the survey results will help us determine the areas of NDMS preparedness where training is needed.*
- Scope of the survey  
*150 NDMS hospitals are participating in the survey.*
- Confidentiality of responses to the survey  
*Confidentiality will be maintained and individual responses will be combined across hospitals so that neither individuals nor hospitals are identifiable in the results. This is to ensure that responses are free of any potential bias and you can feel free to be candid in your responses.*

**Preliminary set-up of the questionnaire following introduction**

*The questionnaire includes sections specific to your job title and you will be asked to answer selected questions. It is designed to take 30 – 35 minutes to complete the survey. Most of the questions are structured as multiple-choice. I will read you the question and record the responses available to you. The first few questions provide us with basic information about your background and your position within the organization.*

**After section I, please keep in mind there are three groups of interviewees: 1) NDMS Point-of-Contact or Emergency Planner, 2) Administrator and 3) Clinical Service Coordinator. Please follow the matrix to locate sections designed for relevant group of interviewees.**

	Section	I	II	III	IV	V	VI	VII
Interviewee	Point-of-Contact/Emergency Planner	X	X	X	X			
	Administrator	X	X	X		X		
	Clinical Service Coordinator	X					X	
Interviewer								X

Interviewers should maintain neutrality to all respondents’ answers by withholding personal comments. At all times, please display courtesy and appreciation for interviewee’s time and participation.



**INTERVIEWER'S LOG OF NDMS  
HOSPITAL SURVEY**

## INTERVIEWER'S LOG OF NDMS HOSPITAL SURVEY

Interviewer Name: \_\_\_\_\_ Contact Phone: \_\_\_\_\_ Date Shipped to SAR Corp.: \_\_\_\_\_

NDMS Region: \_\_\_\_\_ Contact email: \_\_\_\_\_ Number of Questionnaires Shipped: \_\_\_\_\_

No.	Hosp. Name	Hospital Point-of-Contact Name Phone # email address	First Contact Date	Permission Status: Refused (R) or Permitted (P)	Interviewee Name Phone # email address	Interviewee Job Title POC/EM (POC/EM) Admin (A) Clinical Serv. Dir (CD)	Scheduled Interview Date	Time of Interview	On Site (S) or Phone Interview (P)	COMMENTS (If refused to participate, include reason below)
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										



## **APPENDIX D**

# **HOSPITAL DEMOGRAPHICS**

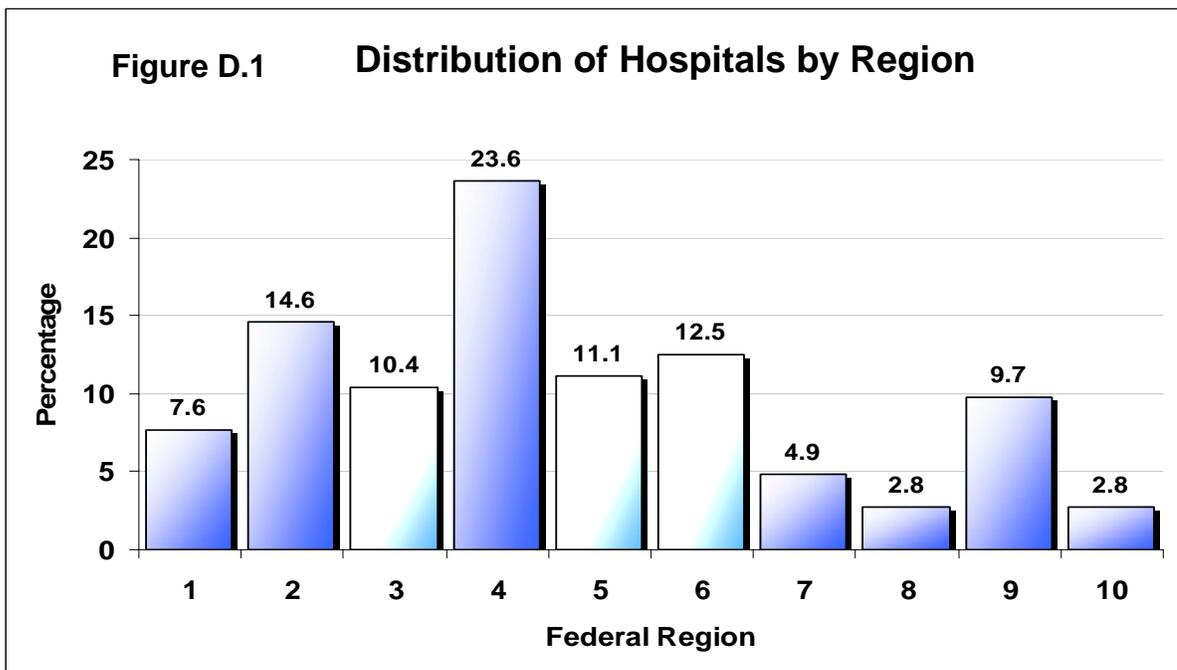


## Hospital Demographics

The following section provides an overview of the demographics of the survey sample. Information on hospital specialty, service area, size (as measured by the number of licensed beds), the type of financial ownership, and number of employees is provided. In most cases this information was collected from all people interviewed at a particular hospital to minimize the potential of incomplete demographic data. In rare cases where data was missing or there were conflicting responses the Hospital Administrator’s response was given priority, followed by the Point- of-Contact/Emergency Planner.

Interviews were conducted at a total of 144 hospitals representing all of the Federal Regions. The sample reflected the distribution of all hospitals participating in NDMS. Tables for the regional distribution are included at the end of the section. Because of the small number of hospitals that participated in the survey in several of the regions, conclusions regarding regional differences should not be made and statistics are presented only for descriptive purposes.

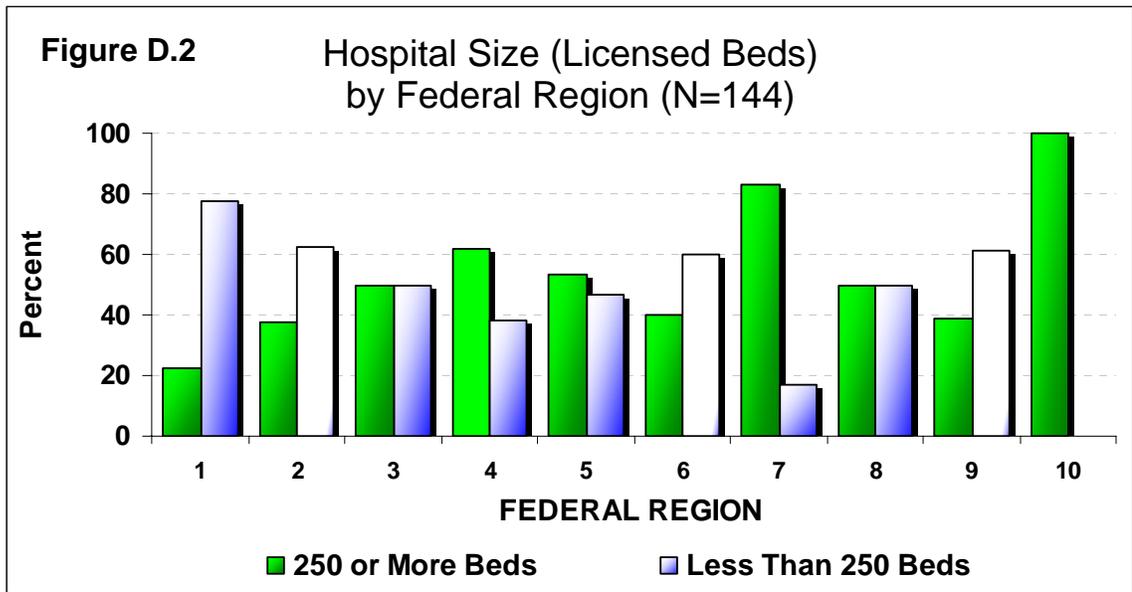
The following chart illustrates the percentage of all interviewed hospitals that are located in each of the 10 Federal Regions. Hospitals from Region 4 represent almost one quarter of the survey sample.





### Hospital Size

Information on hospital size was collected from Hospital Administrators. The number of licensed beds was used as an indicator of size. Hospitals were divided into two groups based on the median of 251 beds so that approximately half of the surveyed hospitals would be in each group. There was some regional variation in the relative distribution of large and small hospitals as shown in the chart below.

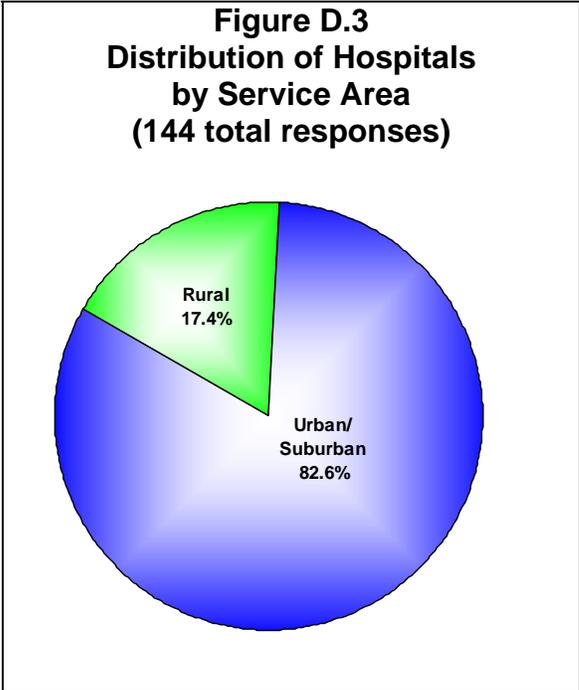




### Hospital Service Area

Over 80% of the hospitals in the sample were located in urban or suburban areas (Figure D.3). This definition was self-selected, as no standard definition of urban, suburban, or rural was provided in this question. Consequently, there may be some slight misclassification of service area. However, the findings are consistent with the fact that most NDMS hospitals are located in metropolitan areas <sup>(1)</sup>.

When hospital service area was examined by Federal Region, only one region (Region 3) had less than 75% of the sampled hospitals located in urban/suburban areas (Table D.1).



**Table D.1 Hospitals by Service Area and Federal Region**

Service Area	Federal Region										
	All	1	2	3	4	5	6	7	8	9	10
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Urban/ Suburban	119 (82.6)	9 (81.8)	17 (81.0)	9 (60.0)	28 (82.4)	13 (81.3)	15 (83.3)	7 (100.0)	3 (75.0)	14 (100.0)	4 (100.0)
Rural	25 (17.4)	2 (18.2)	4 (19.0)	6 (40.0)	6 (17.6)	3 (18.7)	3 (16.7)	0 (0.0)	1 (25.0)	0 (0.0)	0 (0.0)
Total*	144	11	21	15	34	16	18	7	4	14	4

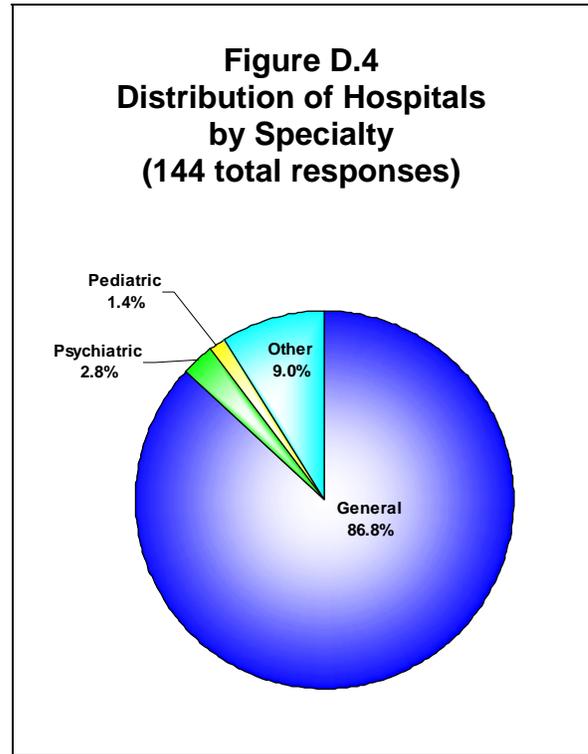
\*Note: n=Number of hospitals. %=Number of hospitals / total number of hospitals in the same column. Percentages are expressed as column percentages.



### Hospital Specialty

The sampled hospitals classified as general service hospitals totaled 86.8%, with 13.2% of sampled hospitals being considered specialty hospitals (Figure D.4).

No striking patterns emerged when hospital type was examined by FCC Region (Table D.2). The percent distribution of general hospitals was consistent across the 10 FCC regions ranging from 75% to 100% of all sampled hospitals.



**Table D.2 Hospitals by Specialty and Federal Region**

Hospital Specialty	Federal Region										
	ALL	1	2	3	4	5	6	7	8	9	10
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
General	125 (86.8)	9 (81.8)	19 (90.4)	15 (100.0)	29 (85.3)	14 (87.4)	14 (77.7)	6 (85.7)	4 (100)	12 (85.7)	3 (75.0)
Psych.	4 (2.8)	1 (9.1)	1 (4.8)	0 (0.0)	1 (2.9)	1 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Pediatric	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (5.6)	0 (0.0)	0 (0.0)	0 (0.0)	1 (25.0)
Other	13 (9.0)	1 (9.1)	1 (4.8)	0 (0.0)	4 (11.8)	1 (6.3)	3 (16.7)	1 (14.3)	0 (0.0)	2 (14.3)	0 (0.0)
Total	144	11	21	15	34	16	18	7	4	14	4

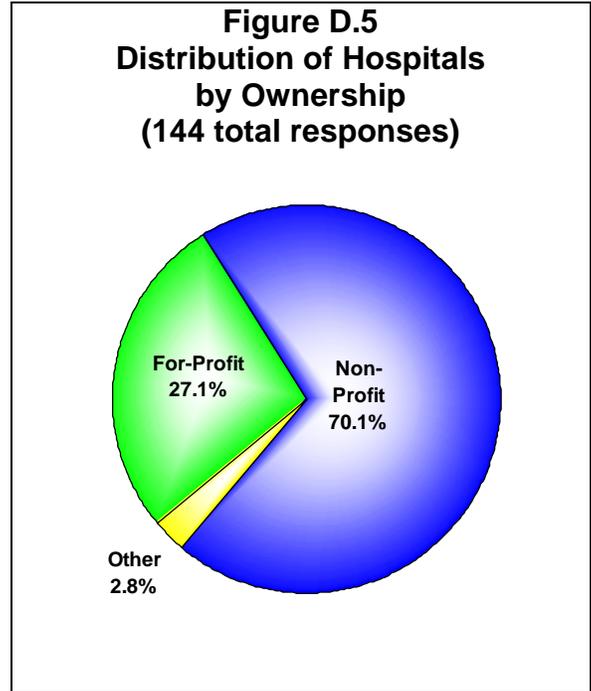
*Note:* n=Number of hospitals. %=Number of hospitals/total number of hospitals in the same column.



### Hospital Financial Ownership Status

Roughly three of every four hospitals that were surveyed (70.1%) reported that it was not-for-profit (Figure D.5).

When hospital ownership status was assessed over the 10 FCC Regions (Table D.3), there was some variation in the proportion of non-profit status hospitals, which ranged from 33% (Region 6) up to 100% (Regions 3 and 10).



**Table D.3 Hospitals by Financial Ownership and Federal Region**

Financial Ownership	Federal Region										
	All	1	2	3	4	5	6	7	8	9	10
	n (%)**	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
For-Profit	39 (27.1)	3 (27.3)	3 (14.3)	0 (0.0)	14 (41.2)	1 (6.3)	11 (61.1)	2 (28.6)	1 (25.0)	4 (28.6)	0 (0.0)
Non-Profit	101 (70.1)	8 (72.7)	18 (85.7)	15 (100.0)	18 (52.9)	15 (93.7)	6 (33.3)	5 (71.4)	3 (75.0)	9 (64.3)	4 (100.0)
Other	4 (2.8)	0 (0.0)	0 (0.0)	0 (0.0)	2 (5.9)	0 (0.0)	1 (5.6)	0 (0.0)	0 (0.0)	1 (7.1)	0 (0.0)
Total	144	11	21	15	34	16	18	7	4	14	4

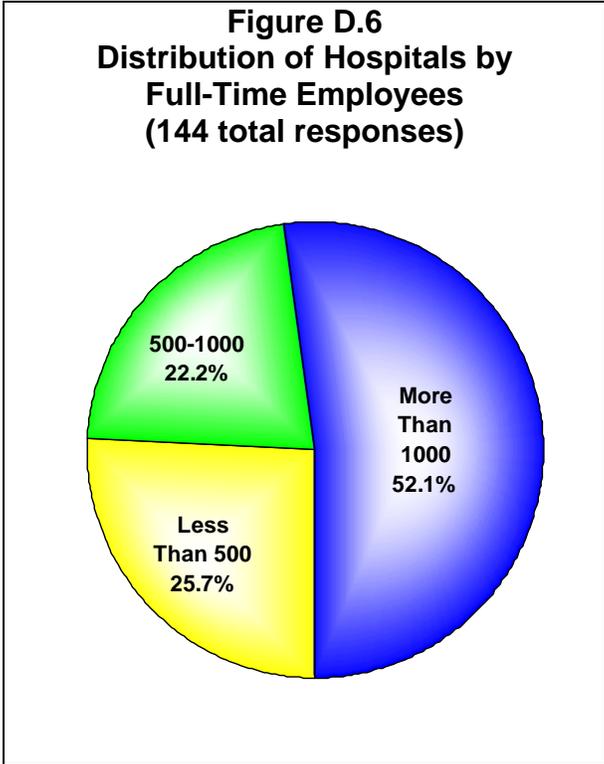
*Note: n=Number of hospitals. %=Number of hospitals ÷ total number of hospitals in the same column.*



### Hospital Employees

Of the sampled hospitals, 52.1% had more than 1000 full-time employees (Figure D.6).

There were slight variations in the number of full-time hospital employees in sampled hospitals across the 10 FCC regions (Table D.4). Only Regions 1, 2 and 6 had less than 50% of the sampled hospitals with over 1000 full-time employees.



**Table D.4 Hospitals by Full-Time Employees and Federal Region**

Number of Employees	Federal Region										
	All n (%)	1 n (%)	2 n (%)	3 n (%)	4 n (%)	5 n (%)	6 n (%)	7 n (%)	8 n (%)	9 n (%)	10 n (%)
<500	37 (25.7)	3 (27.3)	5 (23.8)	2 (13.3)	10 (29.4)	4 (25.0)	6 (33.3)	1 (14.3)	2 (50.0)	4 (28.6)	0 (0.0)
500-1000	32 (22.2)	3 (27.3)	6 (28.6)	4 (26.7)	5 (14.7)	4 (25.0)	6 (33.3)	1 (14.3)	0 (0.0)	3 (21.4)	0 (0.0)
>1000	75 (52.1)	5 (45.4)	10 (47.6)	9 (60.0)	19 (55.9)	8 (50.0)	6 (33.3)	5 (71.4)	2 (50.0)	7 (50.0)	4 (100.0)
Total	144	11	21	15	34	16	18	7	4	14	4

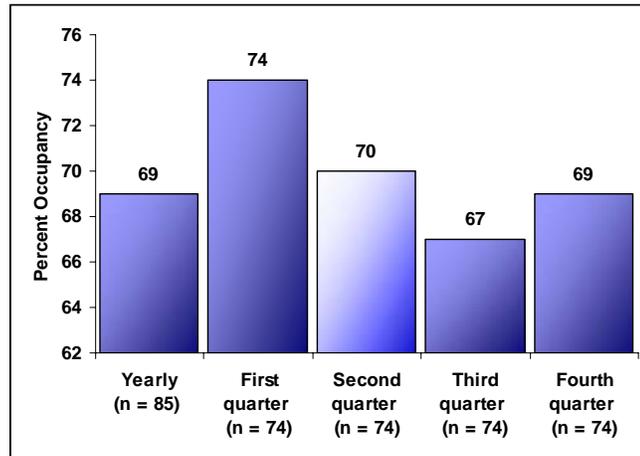
*Note:* n=Number of hospitals. %=Number of hospitals/total number of hospitals in the same column. Column percentages may not add to 100% due to rounding.



## Occupancy Rate

The hospitals' yearly average percentage of occupancy reported by the Hospital Administrators is 69%. The quarter with the highest average reported occupancy was the first quarter of the year at 74%, followed by the second quarter, fourth quarter and third quarter, respectively (Figure D.7). The average occupancy appears highest in the seasons where respiratory problems and influenza are commonly observed. The reader is cautioned to the term "occupancy" in this question as it typically refers to the proportion of staffed beds occupied. The question did not distinguish between staffed beds and licensed beds.

**Figure D.7  
Hospitals' Average Occupancy**



*Note: n=Number of responses. Missing responses for Yearly=10  
Missing responses for each quarter=21.*



### Number of Licensed and Staffed Beds

The median number of licensed beds for the hospitals surveyed is 251 (Table D.5). A wide range in the number of licensed and staffed beds was observed for the surveyed hospitals. The smallest hospitals had 25 licensed beds while the largest had nearly 1,400 licensed beds.

**Table D.5 NDMS Hospitals Bed Capacity**

Type of Beds	No Response	Responses	Hospital Size		
			Minimum	Median*	Maximum
Licensed beds	3	130	25	251	1,395
Staffed beds	10	123	15	172	1,000

*\*Median is an equal number of hospitals above and below this measure in the number of beds reported.*



## **APPENDIX E**

### **GLOSSARY OF TERMS & ACRONYMS**



## ACRONYMS

<b>AE</b>	<b>Aeromedical Evacuation</b>
<b>AFB</b>	<b>Air Force Base</b>
<b>AMC</b>	<b>Air Mobility Command</b>
<b>AMEDD</b>	<b>Army Medical Department</b>
<b>ASD (HA)</b>	<b>Assistant Secretary of Defense (Health Affairs)</b>
<b>C2</b>	<b>Command and Control</b>
<b>CBRNE</b>	<b>Chemical, Biological, Radiation, Nuclear, and Explosives</b>
<b>CCP</b>	<b>Casualty Collection Point</b>
<b>CDC</b>	<b>Centers for Disease Control and Prevention</b>
<b>CINC</b>	<b>Commander in Chief</b>
<b>CJCS</b>	<b>Chairman of the Joint Chiefs of Staff</b>
<b>CONPLAN</b>	<b>Concept of Operations Plan</b>
<b>CONUS</b>	<b>Continental United States</b>
<b>CRAF</b>	<b>Civil Reserve Air Fleet</b>
<b>DCO</b>	<b>Defense Coordinating Officer</b>
<b>DFO</b>	<b>Disaster Field Office</b>
<b>DMAT</b>	<b>Disaster Medical Assistance Team</b>
<b>DoD</b>	<b>Department of Defense</b>
<b>DOMS</b>	<b>Director of Military Support</b>
<b>DOT</b>	<b>Department of Transportation</b>
<b>EMSHCG</b>	<b>Emergency Management Strategic Health Care Group</b>
<b>EOC</b>	<b>Emergency Operations Center</b>
<b>ESF</b>	<b>Emergency Support Function</b>
<b>FCC</b>	<b>Federal Coordinating Center</b>
<b>FCO</b>	<b>Federal Coordinating Officer</b>
<b>FEMA</b>	<b>Federal Emergency Management Agency</b>
<b>FORSCOM</b>	<b>US Army Forces Command</b>
<b>FRP</b>	<b>Federal Response Plan</b>
<b>GPMRC</b>	<b>Global Patient Movement Requirements Center</b>
<b>HEICS</b>	<b>Hospital Emergency Incident Command System</b>
<b>HHS</b>	<b>Department of Health and Human Services</b>
<b>HQ</b>	<b>Headquarters</b>
<b>HUMMWV</b>	<b>Highly Mobile Multi-purpose Wheeled Vehicle</b>
<b>ITV</b>	<b>In-Transit Visibility</b>
<b>JOC</b>	<b>Joint Operations Center</b>
<b>JPMRC</b>	<b>Joint Patient Movement Requirements Center</b>
<b>LFA</b>	<b>Lead Federal Agency</b>
<b>MCC</b>	<b>Mobility Control Center</b>
<b>MOU</b>	<b>Memorandum of Understanding</b>
<b>MSC</b>	<b>US Navy Military Sealift Command</b>



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<b>MST</b>	<b>Management Support Team</b>
<b>MTMC</b>	<b>US Army Military Traffic Management Command</b>
<b>NALO</b>	<b>US Navy Air Logistic Organization</b>
<b>NCA</b>	<b>National Command Authorities</b>
<b>NDMS</b>	<b>National Disaster Medical System</b>
<b>OEP</b>	<b>Office of Emergency Preparedness</b>
<b>OSAA</b>	<b>US Army Operational Support Airlift Agency</b>
<b>OSC</b>	<b>Operations Support Center (NDMS)</b>
<b>OSC</b>	<b>On-Scene Commander (FBI) or On-Scene Coordinator (EPA)</b>
<b>PMI</b>	<b>Patient Movement Items</b>
<b>PMR</b>	<b>Patient Movement Request</b>
<b>POC</b>	<b>Point-of-Contact Person</b>
<b>PRA</b>	<b>Patient Reporting Activity/Patient Reception Area</b>
<b>PRS</b>	<b>Patient Reception Site</b>
<b>REP</b>	<b>Regional Evacuation Point</b>
<b>RHA</b>	<b>Regional Health Administrator, HHS</b>
<b>ROC</b>	<b>Regional Operations Center</b>
<b>SAR</b>	<b>Systems Assessment and Research, Incorporated</b>
<b>SPG</b>	<b>Senior Policy Group</b>
<b>TACC</b>	<b>Tanker/Airlift Control Center</b>
<b>TRAC2ES</b>	<b>TRANSCOM's Regulating and Command and Control Evacuation System</b>
<b>USAF</b>	<b>US Air Force</b>
<b>USCG</b>	<b>US Coast Guard</b>
<b>USH</b>	<b>Under Secretary for Health</b>
<b>USJFCOM</b>	<b>US Joint Forces Command</b>
<b>USMC</b>	<b>US Marine Corps</b>
<b>USTRANSCOM</b>	<b>US Transportation Command</b>
<b>VA</b>	<b>Department of Veterans Affairs</b>
<b>WMD</b>	<b>Weapons of Mass Destruction</b>



## KEY DEFINITIONS

**Aeromedical Evacuation** - The Air Force system providing fixed-wing intratheater and intertheater movement of sick or injured personnel with critical care aeromedical transport teams and qualified crewmembers, to locations offering appropriate levels of medical care.

**Air Mobility Command** - One of the three component commands of USTRANSCOM: The lead command for Air Force aeromedical evacuation.

**Army Medical Department** - The U.S. Army Medical Department includes the Army's fixed hospitals and dental facilities; preventive health, medical research, development and training institutions; and a veterinary command that provides food inspection and animal care services for the entire Department of Defense.

**Assistant Secretary of Defense/Health Affairs (ASD/HA)** - The Assistant Secretary of Defense for Health Affairs is the principal staff assistant and advisor to the Secretary and Deputy Secretary of Defense and the Under Secretary of Defense for Personnel and Readiness for all Department of Defense (DoD) health policies, programs, and activities. The ASD/HA has the responsibility to effectively execute the Department's healthcare mission. This mission is to provide and to maintain readiness to provide healthcare services and support to members of the Armed Forces during military operations. In addition, the Department's healthcare mission provides healthcare services and support to members of the Armed Forces, their family members, and others entitled to DOD healthcare.

**Command and Control** – The exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of the mission. Command and Control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

**Casualty** – A military term referring to any person who is lost to the organization by reason of having been declared dead, wounded, injured, diseased, interned, captured, retained, missing, missing in action, beleaguered, besieged or detained.

**Casualty Collection Point** – A centralized, safe point for emergency treatment and forwarding if necessary. Staffed by medical and non-medical personnel who are close to operational forces, evaluate wounds, provide primary care as needed to stabilize and/or transport wounded to a medical facility.



**Centers for Disease Control and Prevention** - The Centers for Disease Control and Prevention (CDC) is recognized as the lead Federal agency for protecting the health and safety of people – at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States.

**Chairman of the Joint Chiefs of Staff** - The Chairman of the Joint Chiefs of Staff is the principal military adviser to the President, Secretary of Defense, and the National Security Council (NSC), however, all JCS members are by law military advisers, and they may respond to a request or voluntarily submit, through the Chairman, advice or opinions to the President, the Secretary of Defense, or NSC.

**Civil Reserve Air Fleet** - Identified airlift platforms, provided upon contract activation, from commercial airlines specifically to perform/support the patient movement mission.

**Commander in Chief** - The commanding officer one of the unified combatant commands comprised of forces from more than one military Service as established by the President. Combatant commands typically have geographic or functional responsibilities.

**Concept of Operations Plan** - A broad outline of intent in regard to an operation or series of operations. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose.

**Consequence Management** - Consequence management addresses the effects of the incident on lives and property. Consequence management includes measures to protect public health, safety, and the environment, to restore essential government services, and to provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism. In an actual or potential terrorist incident, a consequence management response will be managed by Federal Emergency Management Assistance (FEMA) using structures and resources of the Federal Response Plan (FRP). These efforts will include support missions as described in other Federal operations plans, such as predictive modeling, protective action recommendations, and mass decontamination.

**Continental United States** – Term used to define the 48 contiguous States excluding territories, Alaska and Hawaii.



**Coordinate** - To advance systematically an exchange of information among principals who have or may have a need to know certain information in order to carry out their role in a response.

**Crisis Management** - Crisis management is predominantly a law enforcement function and includes measures to identify, acquire, and plan the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism. In a terrorist incident, a crisis management response may include traditional law enforcement missions, such as intelligence, surveillance, tactical operations, negotiations, forensics, and investigations, as well as technical support missions, such as agent identification, search, render safe procedures, transfer and disposal, and limited decontamination. In addition to the traditional law enforcement missions, crisis management also includes assurance of public health and safety.

**Critical Care Air Transport Team** – Three-person team providing essential critical care requirements in conjunction with aeromedical evacuation aircrews, evacuating critically injured and/or ill patients. Each team supports a maximum of three critically ill patients.

**Defense Coordinating Officer (DCO)** – A Department of Defense (DOD) officer provided in the field as the point of contact to the Federal Coordinating Officer (FCO) and the Emergency Support Functions (ESFs) regarding requests for military assistance. The DCO and staff coordinate support and provide liaison to the ESFs.

**Department of Defense (DoD)** - The Office of the Secretary of Defense helps the Secretary plan, advise and carries out the nation's security policies as directed by both the Secretary and the President. The primary mission is to provide the military forces needed to deter war and to protect the security of the United States.

**Department of Transportation (DOT)** - Oversees the formulation of national transportation policy and promotes intermodal transportation. Other responsibilities range from negotiation and implementation of international transportation agreements, assuring the fitness of US airlines, enforcing airline consumer protection regulations, issuance of regulations to prevent alcohol and illegal drug misuse in transportation systems and preparing transportation legislation.

**Director of Military Support** - The Secretary of Defense directs that the Secretary of the Army be the Executive Agent to task Department of Defense (DOD) components to plan for and commit DOD resources in response to requests from civil authorities for military support. The Director of Military Support serves as the Secretary of the Army's action agent for planning and



executing DOD's Support Mission to civilian authorities within the United States.

**Disaster Field Office (DFO)** - The office established in or near the designated area to support Federal and State response and recovery operations. The DFO houses the Federal Coordinating Officer (FCO), the Emergency Response Team, and, where possible, the State Coordinating Officer and support Staff.

**Disaster Medical Assistance Team (DMAT)** - The primary National Disaster Management System (NDMS) resource to provide supplemental medical assistance. DMAT members are non-Federal volunteers, and, upon activation of the System for a national emergency, will become temporary Federal employees of the U.S. Public Health Service. The basic DMAT is a volunteer group composed of about 35 to 37 physicians, nurses, technicians, and other allied personnel, coming together and training as a volunteer unit. DMATs are, in the first instance, a community resource for supporting local emergency responders in multiple casualty incidents. Second, DMATs are also assets that may be used for medical response within their home State. Third, DMATs are a national resource that can be called upon to provide interstate aid. There are three levels of DMATs. If a team is considered a level one team, they are capable of deployment to a distant site and will arrive in the area with enough supplies and equipment to be self-sufficient for a limited period of time, at least 72 hours. A level two team is able to deploy as a team, but may not have all the equipment and supplies to be self-sustaining in the field. A level three team is in an "organizational" phase. While the team may not be deployable, individual members of the team may be sent to round out other DMAT teams.

Much of the work of a DMAT at the disaster site will be to provide "triage" and those services necessary for casualty clearing and staging. "Clearing" refers to austere field medical care, and "staging" refers to those medical services required during patient evacuation. While the DMAT is managed by a separate organization, a DMAT in a local NDMS patient reception area may assist in providing medical services associated with receiving patients and assessing their medical needs.

**Emergency** - Any natural or man-caused situation that results in or may result in substantial injury or harm to the population or substantial damage to or loss of property.

**Emergency Operations Center (EOC)** - The site from which civil government officials (municipal, county, State and Federal) exercise direction and control in an emergency.



**Emergency Response Team (ERT)**- (1) A team composed of Federal program and support personnel, which the Federal Coordinating Officer (FCO) activates and deploys into an area affected by a major disaster or emergency. This team assists the FCO in carrying out his/her responsibilities under the Stafford Act, the declaration, applicable laws, regulations, and the FEMA-State agreement. (2) The team is an interagency team, consisting of the lead representative from each Federal department or agency assigned primary responsibility for an Emergency support Function and key members of the FCO's staff, formed to assist the FCO in carrying out his/her responsibilities. The team provides a forum for coordinating the overall Federal consequence management response requirements.

**Emergency Support Function (ESF)** - A functional area of response activity established to facilitate coordinated Federal delivery of assistance required during the response phase to save lives, protect property and health, and maintain public safety. These functions represent those types of Federal assistance which the State likely will need most because of the overwhelming impact of a catastrophic event on local and State resources.

**Federal Coordinating Center (FCC)** - A facility located in a metropolitan area of the United States responsible for day-to-day coordination of planning and operations in one or more assigned geographic NDMS Patient Reception Areas (PRA). FCCs recruit hospitals and maintain local non-Federal hospital participation in the NDMS; assist in the recruitment, training, and support of DMATs; coordinate exercise development and emergency plans with participating hospitals and other local authorities in order to develop patient reception, transportation, and communication plans; and, during System activation, coordinate the reception and distribution of patients being evacuated to the area Federal Coordinating Officer (FCO) - (1) The person appointed by the Federal Emergency Management Assistance (FEMA) Director, or in his/her absence, the FEMA Deputy Director, or alternatively the FEMA Associate Director for Response and Recovery, following a declaration of a major disaster or of an emergency by the President, to coordinate Federal assistance. The FCO initiates action immediately to assure that Federal Assistance is provided in accordance with the declaration, applicable laws, regulations, and the FEMA-State agreement. (2) The FCO is the senior Federal official appointed in accordance with the provisions of Public Law 93-288, as amended (the Stafford Act), to coordinate the overall consequence management response and recovery activities. The FCO represents the President as provided by Section 303 of the Stafford Act for the purpose of coordinating the administration of Federal relief activities in the designated area. Additionally, the FCO is delegated responsibilities and performs those for the FEMA Director as outlined in Executive Order 12148 and those responsibilities delegated to the FEMA Regional Director in the Code of Federal Regulations, Title 44, Part 205.



**Federal Emergency Management Agency (FEMA)** - The Federal agency tasked to establish Federal policies for and coordinate all civil defense and civil emergency planning, management, mitigation and assistance functions of Executive agencies.

**FORSCOM** - A major Army forces command and the Army component of U.S. Joint Forces Command. Train, mobilize, deploy and sustain combat ready forces capable of operating in a joint and combined environment to meet worldwide operational commitments.

**Federal Response Plan (FRP)** - (1) The plan designed to address the consequences of any disaster or emergency situation in which there is a need for Federal assistance under the authorities of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U. S.C. 5 121 et seq. (2) The FRP is the Federal government's plan of action for assisting affected States and local jurisdictions in the event of a major disaster or emergency.

**Global Patient Movement Requirements Center (GPMRC)** - A joint activity reporting directly to the Commander in Chief, US Transportation Command, the Department of Defense single manager for the regulation of movement of uniformed services patients. The Global Patient Movement Requirements Center authorizes transfers to medical treatment facilities of the Military Departments or the Department of Veterans Affairs and coordinates intertheater and inside continental United States patient movement requirements with the appropriate transportation component commands of US Transportation Command.

**Hospital Capacity** - The maximum number of stable or stabilized patients by medical regulating category that a hospital can receive, evaluate, and admit within a specified 24-hour period.

**In Transit Visibility (ITV)** - ITV is the process of locating and/or tracking patients through the continuum of medical care and while in the AE system. Service and cultural expectations require that a patient's location be known at all times. Patient information supporting ITV will be reported using GPMRC resources. The primary focal point for maintenance of ITV is through the GPMRC.

**Joint Operations Center (JOC)** - Established by the LFA under the operational control of the OSC, as the focal point for management and direction of onsite activities, coordination/establishment of State requirements/priorities, and coordination of the overall Federal response.



**Lead Federal Agency (LFA)** - The agency designated by the President to lead and coordinate the overall Federal response is referred to as the LFA and is determined by the type of emergency. In general, an LFA establishes operational structures and procedures to assemble and work with agencies providing direct support to the LFA in order to provide an initial assessment of the situation; develop an action plan; monitor and update operational priorities; and ensure each agency exercises its concurrent and distinct authorities under US law and support the LFA in carrying out the President's relevant policy. Specific responsibilities of an LFA vary according to the agency's unique statutory authorities.

**Liaison** - An agency official sent to another agency to facilitate interagency communications and coordination.

**Local Government** - Any county, city, village, town, district, or political subdivision of any State, and Indian tribe or authorized tribal organization, or Alaska Native village or organization, including any rural community or unincorporated town or village or any other public entity.

**Management Support Team** - Provides field command and control in a disaster for deployed Federal medical assets. The MST can provide and coordinate communications, transportation, a medical cache, and other logistical support to the Disaster Medical Assistance Teams (DMATs) and Specialty Teams.

**Medical Regulating** - The actions and coordination necessary to arrange for the movement of patients through the echelons of care. This process matches patients with a medical treatment facility that has the necessary health service support capabilities, and it also ensures that bed space is available.

**Military Sealift Command** – The US Transportation Command's component command responsible for designated sealift service.

**Military Traffic Management Command** - The US Transportation Command's component command responsible for military traffic, continental US air and land transportation, and common-user water terminals.

**National Command Authorities** – The national military command authorities of the United States consisting of the President, Secretary of Defense and Chairman of the Joint Chiefs of Staff.

**National Disaster Medical System** - An asset sharing partnership among the Department of Homeland Security (DHS), Department of Defense (DoD), the Department of Veterans Affairs (VA) and the Department of Health and Human Services (HHS) working with State and local governments, and the private sector. It is chartered in a Memorandum of Understanding (MOU)



among these agencies. The NDMS is designed to fulfill three main objectives: (1) To provide supplemental health and medical assistance in domestic disasters at the request of State and local authorities. (2) To evacuate patients who cannot be cared for in the disaster area to designated locations elsewhere in the nation. (3) To provide a nationwide network of voluntary, pre-identified, non-Federal acute care hospitals to provide definitive care for the victims of domestic disaster or military contingency that exceeds the medical care capability of the affected local, State, or Federal medical system.

**Operations Support Center** – The centralized operations support center for the National Disaster Management System (NDMS), which is co-located with the Department of Health and Human Services (DHHS) Emergency Operations Center (EOC) in Rockville, Maryland. This Center is always established whenever NDMS is activated.

**Office of Emergency Preparedness** - The Office within the U.S. Department of Health and Human Services that has the Departmental responsibility for managing and coordinating Federal health, medical, and health related social services and recovery to major emergencies and federally declared disasters. The Director chairs the NDMS Directorate Staff.

**Patient** - A sick, injured, wounded, or other person requiring medical/dental care or treatment.

**Patient Capacity** - The number of patients/casualties that can be accommodated (received, staged, decontaminated, processed, admitted, etc.) within a defined period of time given a finite level of resources (beds, equipment, facilities, personnel, supplies, transportation, etc.).

**Patient Movement Items (PMI)** - Medical equipment and supplies required to support patients during evacuation. Items includes such things as IV infusion pump, portable ventilator, suction, vital signs monitor, pulse oximeter, defibrillator/monitor, oxygen analyzer, litters litter mattresses, etc.

**Patient Reception Area** - A geographic locale containing one or more airfields; adequate patient staging facilities; and adequate local patient transport assets that support patient reception and transport to a group of voluntary, pre-identified, non-Federal, acute care hospitals capable of providing definitive care for victims in a domestic disaster, emergency, or military contingency.

**Patient Reporting Activity** – A central agency established by the Department of Health and Human Services to facilitate coordination of requests for patient movement from the disaster area to locations where definitive medical care is available.



**Regional Operations Center (ROC)** - The temporary operations facility for the coordination of Federal response and recovery activities, located at the Federal Emergency Management Agency (FEMA) regional office (or at the Federal Regional Center) and led by the FEMA Regional Director or Deputy Regional Director until the Disaster Field Office becomes operational.

**Response** - Those activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster.

**Senior FEMA Official (SFO)** - The official appointed by the Director of Federal Emergency Management Agency (FEMA), or his representative, that is responsible for deploying to the JOC, when requested by the Federal Bureau of Investigation (FBI) to: (1) serve as the senior interagency consequence management representative on the Command Group, and (2) manage and coordinate activities taken by the Consequence Management Group. NOTE: The title SFO also applies to the official appointed by the Director of FEMA, or his representative, to initially direct the FEMA response at the scene of a radiological emergency.

**State Coordinating Officer** - An official designated by the Governor of the affected State, upon a declaration of a major disaster or emergency, to coordinate State and local disaster assistance efforts with those of the Federal government, and to act in cooperation with the Federal Coordinating Officer to administer disaster recovery efforts.

**Tanker Airlift Control Center** – The Air Mobility Command Headquarters' hub for planning and directing tanker and transport aircraft operations around the world. Created to centralize command and control responsibilities previously located in the numbered air forces and airlift divisions.

**Throughput** - Reception area capacity or the maximum number of stable or stabilized patients, by medical regulating category, that can be accommodated at a patient reception site, triaged, staged, transported and admitted to area hospitals within a specific 24-hour period.

**TRANSCOM Regulating and Command and Control Evacuation System** – A web based system that provides in-transit visibility to locate and track medically evacuated patients in both peacetime and contingencies.

**US Coast Guard** – A military, multi-mission, maritime service. Operating within the Department of Transportation during peacetime, the Service falls under the direction of the Secretary of the Navy upon declaration of war or when the President directs. The Coast Guard is a unique Federal agency. In addition to its national defense role as one of the five U.S. Armed Services, the Coast



Guard is charged with a broad scope of regulatory, law-enforcement, humanitarian, and emergency-response duties

**Weapon of Mass Destruction** - (1) Any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors; a disease organism; or radiation or radioactivity. (2) (A) Any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, or a missile having an explosive or incendiary charge of more than one quarter ounce, or mine or device similar to the above; (B) poison gas; (C) any weapon involving a disease organism; or (D) any weapon that is designed to release.



## **APPENDIX F**

### **BIBLIOGRAPHY**



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## APPENDIX G

**SUPPLEMENTAL  
DATA TABLES**



**Table G.2.1 Cross-Classification of POC Responses by Job Title and Job Responsibility (Question 2)**

Job Responsibility	Job Title			Total
	Emergency Planner/Disaster Coordinator	Other	Missing	
Emergency/Disaster Preparedness	49	34	-	83 (62.4%)
Other	3	44	-	47 (35.3%)
Non Response	-	-	3	3 (2.3%)
<b>Total</b>	<b>52</b>	<b>78</b>	<b>3</b>	<b>133</b>

**Table G.3.1 Attendance at NDMS Training Sessions or Planning Meetings**

RESPONSE	Number of POCs	Percent*
Don't Know	8	6.0
Never Attend	49	36.8
At Least 1 per year	31	23.4
Other	29	21.8
Non Response	16	12.0
<b>Total</b>	<b>133</b>	

Table G.3.1 provides some insight into the frequency that NDMS hospital staffs attend NDMS training sessions or planning meetings. The question was worded unclearly because it combined two different activities in one measure. With this caveat in mind, the results do show 36.8% of the POC respondents never attended an NDMS training session or planning meeting. This closely correlates with the data from Table G.2.1 above that indicates that 35.3% of the POC respondents were neither their hospital’s Emergency Planner/Disaster Coordinator nor held that job responsibility.



**Table G.3.3 Level of Confidence in the Hospital’s Capacity to Respond to NDMS Related Activities (Question 30 - Ranked)**

NDMS Activity	Mean	Not Confident (1 & 2) n (%)	3 n (%)	Confident (4 & 5) n (%)	Missing n (%)	Total number of Respondents
Additional supplies & pharmaceuticals required	4.00	7 (7.4)	13 (13.7)	71 (74.7)	4 (4.2)	95
Communications with media, NDMS patients' families	3.92	9 (9.5)	13 (13.7)	69 (72.6)	4 (4.2)	95
Multi-language services as needed (e.g., Spanish, Japanese, etc)	3.92	9 (9.5)	15 (15.8)	67 (70.5)	4 (4.2)	95
Additional staff and equipment required, e.g., ventilators	3.90	9 (7.4)	15 (13.7)	68 (74.7)	3 (3.2)	95
Heightened security, e.g., identification of authorized personnel	3.86	10 (10.6)	17 (17.9)	64 (67.3)	4 (4.2)	95
Retransfer of NDMS patients that cannot be managed on-site	3.49	25 (26.3)	11 (11.6)	56 (58.9)	3 (3.2)	95
Discharge and follow-up of NDMS patients	3.25	25 (26.3)	24 (25.3)	43 (45.2)	3 (3.2)	95
Mortuary services, e.g., storage and transport of contaminated bodies	3.22	24 (25.3)	25 (26.3)	42 (44.2)	4 (4.2)	95
Billing and reimbursement for NDMS patients	2.76	41 (43.2)	18 (18.9)	32 (34.7)	4 (4.2)	95

Note: n =number of respondents.



**Table G.3.4 POCs' Perception of the Level of Training Needed for Hospital Personnel in Specific NDMS Training Areas (Question 23)**

Topic	Total	Mean	Not needed (1)		2		3		4		Highly needed (5)		Missing	
			n	%	n	%	n	%	n	%	n	%	n	%
23a. Incident command	133	2.77	25	18.8	34	25.6	39	29.3	14	10.5	20	15.0	1	0.8
23b. Protocols specific to NDMS	133	3.98	3	2.3	9	6.8	31	23.3	34	25.6	55	41.4	1	0.8
23c. Mutual aid agreement & interagency roles and responsibilities	133	2.97	14	10.5	31	23.3	48	36.1	23	17.3	16	12.0	1	0.8
23d. Chain of command structure at the Federal, State, local levels	133	3.21	19	14.3	22	16.5	33	24.8	28	21.1	30	22.6	1	0.8
23e. Call down lists	133	2.10	51	38.3	40	30.1	28	21.1	6	4.5	8	6.0	0	0.0
23f. Working with the media/developing press release	133	1.99	59	44.4	40	30.1	19	14.3	6	4.5	9	6.8	0	0.0
23g. Working in PPE	133	2.83	28	21.1	27	20.3	34	25.6	28	21.1	16	12.0	0	0.0
23h. Proper handling and notification procedures for lab specimens	133	2.66	33	24.8	32	24.1	31	23.3	21	15.8	16	12.0	0	0.0
23i. Disaster/Multiple casualty management	133	2.61	29	21.8	37	27.8	35	26.3	21	15.8	11	8.3	0	0.0
23j1. Treating the psychological effects/biological	133	3.53	8	6.0	20	15.0	29	21.8	41	30.8	32	24.1	3	2.3
23j2. Treating the psychological effects/radiological	133	3.55	9	6.8	19	14.3	27	20.3	42	31.5	33	24.8	3	2.3
23j3. Treating the psychological effects/Chemical	133	3.51	9	6.8	19	14.3	30	22.5	41	30.8	31	23.3	3	2.3
23j4. Treating the psychological effects/explosive	133	3.57	8	6.0	17	12.8	31	23.3	41	30.8	33	24.8	3	2.3
23k1. Medical treatment/biological	133	3.14	13	9.8	30	22.5	36	27.1	31	23.3	22	16.5	1	0.8
23k2. Medical treatment/radiological	133	3.25	14	10.5	26	19.5	32	24.1	33	24.8	27	20.3	1	0.8
23k3. Medical treatment/chemical	133	3.08	14	10.5	31	23.3	37	27.8	31	23.3	19	14.3	1	0.8
23k4. Medical treatment/explosive	133	3.08	14	10.5	36	27.1	29	21.8	32	24.1	21	15.8	1	0.8
23l. Patient tracking	133	2.95	23	17.3	32	24.1	28	21.1	26	19.5	23	17.3	1	0.8
23m. Disaster welfare inquiry/coordination with Red Cross	133	3.17	11	8.3	33	24.8	38	28.6	25	18.8	26	19.5	0	0.0
23n. NDMS bed reporting	133	2.67	31	23.3	32	24.1	34	25.6	17	12.8	17	12.8	2	1.5
23o. Discharge planning for NDMS	133	3.53	8	6.0	21	15.8	31	23.3	39	29.3	34	25.6	0	0.0
23p. NDMS patient family support	133	3.63	7	5.3	15	11.3	33	24.8	43	32.3	35	26.3	0	0.0
23q. Training needs-Your hospital's responsibilities in a local NDMS patient reception operation	133	3.38	14	10.5	20	15.0	29	21.8	42	31.6	28	21.1	0	0.0

**Table G.3.5 Degree of Training Needed for Hospital Personnel in Treating Patients with Psychological Effects of Exposure to CBRNE Agents (Question 23j)**

Type	Mean	Total Response Freq. (row %)	Highly Needed				Not Needed 1 Freq. (row %)	Missing Freq. (row %)
			5 Freq. (row %)	4 Freq. (row %)	3 Freq. (row %)	2 Freq. (row %)		
Chemical Events	3.51	133 (100)	31 (23.3)	41 (30.8)	30 (22.5)	19 (14.3)	9 (6.8)	3 (2.3)
Biological Events	3.53	133 (100)	32 (24.1)	41 (30.8)	29 (21.8)	20 (15.0)	8 (6.0)	3 (2.3)
Radiological/ Nuclear Events	3.55	133 (100)	33 (24.8)	42 (31.5)	27 (20.3)	19 (14.3)	9 (6.8)	3 (2.3)
Explosive Events	3.57	133 (100)	33 (24.8)	41 (30.8)	31 (23.3)	17 (12.8)	8 (6.0)	3 (2.3)

**Table G.3.6 Degree of Training Needed for Hospital Personnel in Treating Patients with Illnesses and Injuries Associated with CBRNE Agents (Question 23k)**

Type	Mean	Total Response Freq. (%)	Highly Needed				Not Needed 1 Freq. (%)	Missing Freq. (%)
			5 Freq. (%)	4 Freq. (%)	3 Freq. (%)	2 Freq. (%)		
Chemical Events	3.08	133 (100)	19 (14.3)	31 (23.3)	37 (27.8)	31 (23.3)	14 (10.5)	1 (0.8)
Biological Events	3.14	133 (100)	22 (16.5)	31 (23.3)	36 (27.1)	30 (22.5)	13 (9.8)	1 (0.8)
Radiological/ Nuclear Events	3.25	133 (100)	27 (20.3)	33 (24.8)	32 (24.1)	26 (19.5)	14 (10.5)	1 (0.8)
Explosive Events	2.95	133 (100)	21 (15.8)	32 (24.1)	29 (21.8)	36 (27.1)	14 (10.5)	1 (0.8)