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Mass Casualty Disasters: A Survey

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ABSTRACT

TITLE: MASS CASUALTY DISASTERS: A SURVEY

AUTHOR: Jeffrey A. Glick

A survey was sent to 101 emergency professionals at the federal, state and local governmental levels involved with planning for and responding to the consequences of mass casualty disasters (with approximately 30,000 injuries.) An excellent 84% response rate was obtained.

Overall, most respondents believed that there is both a lack of resource capability and an insufficient ability to surge required resources to an area in time to meet requirements during a mass casualty disaster. More specifically, less than one-third of the state/local respondents and approximately half of federal respondents believe that the combined federal, state, and local **medical response** resources will meet the needs of an estimated 30,000 injured. Only about one-third of federal and one-quarter of state/local respondents believe there will be sufficient combined local, state, federal and private **evacuation** resources to meet requirements. Finally, almost three-quarters of state/local respondents and one-third of federal respondents believe there will be insufficient local, state, federal and private definitive care resources to meet the **definitive care** requirement resulting from a mass casualty disaster with 30,000 injured. While there is at least some minimal level of plans and procedures at both the federal and state/local levels, half of the state/local respondents have not participated in any tests or exercises within the past five years.

The study's results based on the perceptions of experienced professionals concerning the lack of resources or lack of accessibility to them in a mass casualty disaster are cause for concern and warrant further review by those at local, state and federal levels of government concerned with such catastrophic disasters.

AUTHOR'S BIOGRAPHY

Jeffrey A. Glick is a senior level manager in the Preparedness, Training and Exercise Directorate in the Federal Emergency Management Agency (FEMA). His most recent role has been to develop guidance and standards for states and localities in their planning for and responding to disasters. Other experience in FEMA includes a wide variety of tasks from programmatic planning and evaluation to emergency team preparation and training. Previous to FEMA, he worked in the General Accounting Office.

Mr. Glick earned a masters degree in social service administration from the University of Chicago and is a graduate from the University of California.

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CHAPTER 1

INTRODUCTION:

GOALS AND PURPOSE

A mass casualty disaster (MCD) is a fearful possibility for the United States. Researchers have projected that a catastrophic earthquake in a major metropolitan area could result in thousands of casualties and injuries. A catastrophic hurricane could have a similar effect. This research project examines this Nation's capability to medically respond to such devastating disasters.

This project's goal was to examine MCD response based on the attitudes and opinions of senior governmental representatives who would direct the medical response to an MCD. These attitudes and opinions were obtained through issuance of a survey instrument (i.e., questionnaire). Surveys were mailed to senior representatives from the Public Health Service (PHS), Department of Defense (DOD), Department of Veterans Affairs (DVA) and the Federal Emergency Management Agency (FEMA). Surveys were also mailed to a sample of state emergency coordinators and local medical coordinators in geographic areas most subject to a catastrophic earthquake or hurricane. Questions in the survey focused on what medical assistance could be provided, what governmental level will provide them, how rapidly, and whether there will be sufficient quantity and quality to meet expected needs. Also, questions concerning preparatory plans and exercises were included to provide some indication of readiness.

The respondents were given two perspectives to choose from as a basis for answering the MCD survey, depending on their geographical location. The first perspective was a medical response to a catastrophic earthquake such as could happen in the San Francisco Bay Area. Respondents were to consider that a response to such a catastrophe would have to occur with no prior warning, result and the catastrophe in a chaotic environment where transportation, communications and the very medical facilities people expect to use would be severely disrupted.

The second perspective in the MCD survey was a medical response to a catastrophic hurricane as might happen in the Miami area. Hurricanes also have the potential for massive death and injury. In this case conditions in the stricken area after the storm would be similar to those after an earthquake, however there would have been warning of the impending catastrophic disaster (how much would depend on the meteorological conditions at the time.) Medical resources could prepare, additional resources could be brought into nearby areas or put on "standby" in expectation of need. Consequently, the catastrophic earthquake and hurricane perspectives allowed for examination of the two extremes in MCD response.

This survey focused on developing baseline information concerning this nation's capabilities to respond to an MCD. As such, it did not focus or critique any one system currently developed or proposed for responding to an MCD. Rather, the survey focused on the perceived needs and capabilities as understood by those who would be called upon to respond.

CHAPTER 2

BACKGROUND

MEDICAL DISASTERS WILL OCCUR

Interest in medical response to catastrophic emergencies has undergone a recent surge of interest since such disasters as Hurricane Andrew (1992), the Northridge earthquake (1993) and most recently, the earthquake in Kobe Japan (1995). There is a greater realization in this country that devastating hurricanes or earthquakes may occur in areas such as Miami, Houston, Los Angeles, Memphis or the San Francisco Bay Area. While much research is underway, not even experts can predict with certainty when an earthquake will occur or exactly where a hurricane will strike. However, experts do agree that earthquakes will happen and hurricanes will strike.

Numerous organizations have publicly made their best "educated guess" as to when and where the next catastrophic earthquake will occur. For example, the Center for Earthquake Research at Memphis State University predicts that within the next 15 years, there is a 50 percent chance that there will be a 6.3 earthquake on the Richter Scale in the New Madrid fault area in the Memphis - St. Louis areas with possibly 3,000 deaths and 10,000 injuries.[1] The Federal Emergency Management Agency (FEMA) estimates that a massive California earthquake could cause 20,000 deaths and 100,000 injuries, while the United States Geological Survey provides a similar estimate of 90,000 that could be injured.[2]

Risk factors greatly effect the numbers of deaths or injuries resulting from an MCD. The most important of these factors include the population density, time of day of the event, structural quality of residences and businesses, intensity and type of seismic activity

nor hurricane, and durability of the infrastructure in the effected area. The disaster's impact is compounded by its effects on the many facilities supporting our twentieth-century lifestyle which dot our landscape. Chemical plants, nuclear reactors, oil refineries, and sewage plants can become victims of the disaster too, adding to death and injury.

We cannot speak of earthquake or hurricane "prevention" as such, tremors will come and hurricanes will strike causing their terrible burden of damage, death and injury. However, being better prepared will mitigate these losses. How effectively we are prepared as a nation to medically respond to a catastrophic earthquake or hurricane causing mass casualties is the subject of this research.

MASS CASUALTY DISASTERS: DEFINED

Mass casualty disasters are disasters causing thousands of deaths and tens-of-thousands of injuries. Such an MCD could be caused by a Category 4-5 hurricane hitting downtown Miami or an earthquake measuring 8.0 on the Richter Scale occurring along the San Andreas fault in the San Francisco Bay Area. They pose medical response problems which are quite different from those presented by multi-casualty incidents (e.g., transportation accidents.) The shear magnitude of death and injury resulting from an MCD, the geographic dispersion of the resulting trauma, and the fact that the facilities and medical personnel normally relied upon to respond to such an event may be victims themselves, graphically illustrate that the normal day-to-day paradigm of "maximum care" for patients will have to be replaced by a paradigm of "optimum care" based upon the triage of victims, with medical assistance coming from outside the area.

Unique plans and procedures are needed at all levels of government to respond to an MCD. Fortunately, to date, the United States has been spared an MCD. But our vulnerability is ever increasing as our population grows and urbanization continues to concentrate larger numbers of our population in greater urban areas. Some of our large urban areas along the south-east seaboard or on top of the San

Andreas, New Madrid or other major fault lines, are directly in "harms way". In a sense, these population areas are MCDs waiting to happen.

THE UNITED STATES HAS DEVELOPED A SYSTEM FOR RESPONDING TO A CATASTROPHIC MEDICAL DISASTER

When state and local governments are overwhelmed by a catastrophic disaster, the federal government responds by mobilizing resources from the Red Cross and federal departments and agencies to perform response functions normally carried out by state and local governments. To mobilize these resources, the federal government utilizes the Federal Response Plan. In concept this Plan is straight forward. The federal government provides state and local governments with needed technical expertise, equipment and other resources, and assumes an active role in managing the response. Resources and capabilities are grouped into 12 Emergency Support Functions which are listed below:[3]

1. Transportation
2. Communications
3. Public Works & Engineering
4. Fire Fighting
5. Information & Planning
6. Mass Care
7. Resource Support
8. Health & Medical Services
9. Urban Search & Rescue
10. Hazardous Materials
11. Food
12. Energy

Each Essential Support Function is headed by a Primary Agency with other agencies providing support. The eighth Emergency Support Function is headed by the Department of Health and Human Services (HHS) through its executive agent, the PHS. Supporting agencies include DOD, DVA and FEMA.

THE NATIONAL DISASTER MEDICAL SYSTEM PROVIDES MEDICAL SUPPORT

If there is a mass casualty disaster those federal departments and agencies performing Essential Support Function #8 in the Federal Response Plan will turn to the National Disaster Medical System (NDMS) as the primary means through which medical assistance will be

provided. This System would be supplemented by additional DOD assets as required. In a mass casualty disaster, the NDMS has three objectives:

1. To provide health, medical, and related social service response to a disaster area in the form of medical response units or teams, and medical supplies and equipment.

2. To evacuate patients who cannot be cared for in the affected area to designated locations elsewhere in the nation; and

3. To provide hospitalization in federal hospitals and in a voluntary network of non-federal acute care hospitals that have agreed to accept patients in the event of a national emergency.[4]

Under NDMS, each of these objectives constitute a response phase, with its own set of designated assets and procedures. Each phase is described below.

MASS CASUALTY DISASTER: RESPONSE PHASES

Mass casualty disaster response can be divided into three phases: medical response, patient evacuation and definitive care. Medical response comprises those principal medical functions needing to be preformed in the first few days following an MCD. Patient evacuation is the movement of patients out of the disaster area when local medical facilities are overwhelmed. Finally, definitive care is providing the full range of medical services, usually in some type of hospital setting, to victims of an MCD.

Medical Response

Medical response consists of three principal functions: field rescue, lifesaving first aid, and casualty clearing (i.e., triage and medical stabilization.) The effectiveness of medical response drops off markedly as time elapses following the disaster causing event. Pollander and Rund documented this fact dramatically based on their research concerning the Armenian and Tangshan earthquakes. They noted that if a victim was rescued in the first half hour almost all survived. But by the second day only one-third survived and by the

fifth day, although the cases were highly publicized, only 10-percent survived.[5] Eric Noji also noted in his Congressional testimony concerning earthquake response the existence of the "golden time rule", "Survivable time for victims of building collapse is measured in minutes and hours, but response time for outside medical aid may be measured in hours, if not days."[6]

Medical response takes place during the acute phase immediately following the MCD event, where the medical needs of thousands of injured must be rapidly met. The challenge is daunting. The paradigm for accessing medical care is reversed. Victims who would normally access the medical system (via telephoning 911, etc.) now need to be accessed by the system itself. But the sheer magnitude of the catastrophe precludes rapid assessment and communication by and between officials. Meanwhile, health professionals and the facilities and supplies they use can be victims and thus unavailable for medical response. To the extent that medical assistance is unavailable after a disaster, family, friends and neighbors extricate their own. Survivors, contrary to expectations, are rarely in a panic and disorganized. They act calmly with common sense and manage the rescue as best they can.[7]

Against this backdrop, outside medical assistance must enter the disaster scene and become part of the medical response that accesses the victims. It needs to "plant the flag", becoming established in specific geographic locations within the disaster area to provide lifesaving services as quickly as possible. These services should include reaching out to victims through search and rescue, first aid, casualty clearing and deploying other field teams to both assess health needs of the victimized population and provide care in facility and field settings.

Under NDMS, the Disaster Medical Assistance Teams (DMATS) are assigned to provide this outside medical response assistance, supplemented by DOD assets as required. DMATs are voluntary medical teams organized and equipped to provide austere medical care in a disaster area. Hospitals, volunteer agencies or medical organizations organize interested medical and paramedical personnel into teams through the

sponsorship of PHS. Currently, there are 24 such teams nationwide each with approximately 35 members.[8]

Patient Evacuation

The second phase in mass casualty disaster response is patient evacuation. The goal of evacuation is to place the MCD patient in the appropriate treatment facility outside the disaster area for the required definitive care. Patient evacuation is employed at the disaster scene when local medical facilities are overwhelmed due to the large influx of patients or even destruction of the resources themselves. Patient evacuation begins after casualty clearing (i.e., triage and medical stabilization) has taken place under the medical response phase.

Effective patient evacuation is dependent upon an effective casualty clearing process that accurately identifies the victim's/patient's medical needs and correlates them with a data base of participating hospitals' bed availability and treatment specialties. This is then combined with information concerning assets available to transport stabilized patients from the disaster scene to nearby operational airports or depots. Finally, all of the above is combined with evacuation information concerning assets available to transport patients to receiving airports or depots and then transport them to specific hospitals qualified to deliver the definitive care required.

Movement of patients from disaster sites to outside locations that can provide definitive care is administered by DOD's Transportation Command. The U.S. Air Force provides airlift through the Air Mobility Command which can be supplemented by civilian aircraft through the Civil Reserve Air Fleet (CRAF) and by other types of transportation (e.g., AMTRAK trains) coordinated by DOT.[9]

Patient tracking during the evacuation process is conducted by the Global Patient Movement Requirements Center, part of DOD's Transportation Command. This Center becomes the central repository for patient location information and has to maintain order in a

potentially very confusing, high pressure situation. During an MCD patients will be streaming out of the disaster area by the thousands with numerous different injuries at different levels of severity. Under the NDMS, they will be transported by multiple means to thousands of hospitals all over the country for definitive care. There will be different tracking methods, at different levels of computerization, employed at each stage of the process which will have to be interfaced so that worried and even desperate family, friends and co-workers can find victims evacuated to facilities thousands of miles away.

Training for this type of complex mission is needed for effective and efficient execution in an MCD. Training at all levels from the medical personnel who will be at the disaster site, to the ground and air crews of the evacuation teams, to the receiving hospitals providing definitive care, should be conducted regularly in order to develop an understanding among participants as to what tasks need to be done, how, with what priority, and the method for tracking patients through the process -- a formidable task.

Definitive Care

For this survey, definitive care is defined as the provision of the full range of medical services, usually in some type of hospital setting, needed for responding to those injured in a catastrophic earthquake or hurricane (e.g., at least 30,000 injuries). Definitive care institutions in the disaster area are expected to respond to patient needs to the extent possible. But as pointed out previously, these facilities and the supplies and medical personnel on which they rely may themselves be victims of the disaster. Consequently, medical institutions outside the disaster area will be required, interfacing with the disaster scene by the patient evacuation process described above.

The DHHS, through the NDMS, has enrolled over 110,000 reserve hospital beds in 1,818 participating civilian hospitals to receive patients from an MCD. DOD and DVA also could provide additional beds if

needed. Maintaining this network of hospitals able to receive MCD patients is the responsibility of DOD and DVA. Administration of the network is conducted through liaison offices, called Federal Coordinating Centers, located in 72 DOD and DVA facilities within the United States.[10]

It should be noted that there are potential problems with this reliance on civilian hospitals as the "first line" of response in an MCD. Keeping almost 2,000 hospitals ready to quickly respond to an MCD is a daunting task for DHHS and the PHS program managers. Quick, effective and efficient response will require more than having a general plan. Rather, the MCD response needs to be carefully developed, trained and exercised, so when needed could be executed with little confusion in an otherwise very confusing, high pressure situation.

Additional potential problems with relying on civilian hospitals to receive patients from an MCD would include the fact that typically, hospitals staff their institutions based on an average daily patient load. These hospitals rely on a staffing pool to expand the number of operating beds in the event of a workload increase such as would occur if called upon to support a definitive care response to an MCD. However, in a given geographic area, many hospitals could be relying on the same staffing pool to meet their NDMS commitments and if all were participating, staffing shortages could result.[11]

Further problems could arise as hospitals participating in the MCD response cleared out their non-critical patients to other institutions in their local area, overwhelming these institutions' capacities to deal with the sudden influx. This "ripple effect" of creating shortages of facilities and/or personnel at the next level down in the medical care system is a problem that DOD and DVA needs to plan for, and monitor closely as the crisis unfolded. Otherwise the system of care could begin to break down.

CONCLUSION

Response to an MCD would need to be rapid, effective and efficient. Tens-of-thousands of victims would need field rescue, lifesaving first aid and casualty clearing. Most victims would probably have to be evacuated out of the area and receive definitive care perhaps even thousands of miles away. Developing and maintaining a system to do this is a formidable task, and in the case of a catastrophic earthquake, would have to be accomplished with no warning. The MCD survey attempted to determine whether responsible medical personnel at the federal, state and local levels believed that the current operational system is adequate to respond to an MCD and deal with the most catastrophic emergency this nation has ever known.

CHAPTER 3

SURVEY METHODOLOGY

SURVEY OVERVIEW

The survey method was chosen to allow for the gathering, tabulating and analyzing of data from a wide range of authorities on the subject of MCD response in the United States. The individuals selected for the survey were in positions of authority on the subject at the federal, state or local levels of government. Specifically, 101 surveys were mailed of which 85 were returned (a response rate of 84%). The surveys were mailed to individuals categorically identified as follows:

- Federal Government Officials: The Public Health Service (PHS) within the Department of Health and Human Services (HHS) has the "lead" for developing and coordinating MCD response capabilities under the Federal Response Plan. They are supported by the Departments of Veterans Affairs (DVA) and Defense (DOD), and the Federal Emergency Management Agency(FEMA). Surveys were sent to key officials located in each of these departments or agencies headquarters (HQ) who were responsible for planning and/or responding to an MCD . Surveys were also sent to regional office (Reg.) officials in geographic areas subject to MCDs if these offices were directly involved in MCD planning and/or response. Responses were as follows:

Agency	Sent	Returned	Percent
PHS	7 (2 HQ, 5 Reg.)	5 (2 HQ, 3 Reg.)	71%
DVA	20 (1 HQ, 19 Reg.)	18 (1 HQ, 17 Reg.)	90%
DOD*	7 (HQ)	6 (HQ)	86%
FEMA**	3 (HQ)	2 (HQ)	67%

* Surveys sent to DOD and Command levels.

** FEMA regions do not directly participate on a daily basis in medical emergency preparedness.

- Directors of State Emergency Management Offices: These directors have overall responsibility for development of all emergency plans, capabilities and responses at the state level, including MCD. Surveys were sent to 18 state directors providing a representative sample of those states at risk for a catastrophic earthquake or hurricane, with 16 surveys returned (89%). The 18 states chosen were:

Alaska	Arkansas	California	Florida	Georgia
Hawaii	Illinois	Indiana	Kentucky	Louisiana
Maryland	Mississippi	N. Carolina	S. Carolina	Tennessee
Texas	Utah	Virginia		

- Directors of State Emergency Medical Systems (EMS): These directors have responsibility for development of emergency medical plans, capabilities and responses to medical emergencies, including MCD. Surveys were sent to EMS directors in the same 18 states as the directors of the emergency management offices listed above. Thirteen surveys were returned (72%).

- Directors of Local EMS: These directors have responsibility for development of local emergency medical plans, capabilities and responses to an MCD in their jurisdictions. Surveys were sent to 31 local EMS directors in the same 18 states listed above, with 28 surveys returned (89%).

SURVEY DESIGN

The survey questionnaire was divided into six sections so as to obtain the respondents' views concerning the full range of medical activities conducted as a result of an MCD.

Section 1. Instructions

The first section provided respondents with instructions for completing the questionnaire. It also introduced two catastrophic disaster scenarios which could cause 30,000 or more injuries. This gave respondents a set of common scenarios. Federal officials responding were requested to answer the survey questions relative to an earthquake in downtown Memphis, TN, registering 8.0 on the Richter scale. State or local officials were to assume their largest city had been directly hit by either an earthquake measuring 8.0 on the Richter scale or by a Category 4-5 hurricane, according to which was more plausible for their geographic area.

The scenario chosen by the respondent would determine how the other questions were answered. A hurricane would come with warning and so would allow for the massing and preparation of needed medical response assets, transportation and definitive care resources. An earthquake would come with no warning, stressing all assets and resources to the maximum. Hence, the responses of those subject to a catastrophic earthquake should be based on even more stringent criteria than those subject to a catastrophic hurricane.

Section 2. Background

The second section of the questionnaire requested background information concerning respondents' professional experience, In particular, federal respondents were asked to identify their current position by federal agency (FEMA, DOD, DVA, HHS/PHS, Other).

State respondents were asked to identify their position as state emergency management coordinator or as medical system coordinator. Local emergency management system coordinators were selected for this survey and there was a response for this category of respondent as well. Finally, there was as an option for the respondent to write in their position in case it did not correspond to any of the above categories.

This background information enabled the clustering of responses based on governmental level and geographic location. Consequently, it could be determined whether these basic governmental and geographic variables influenced how the respondents viewed and responded to MCD.

Section 3. Medical Response

Section three concerned the needs and capabilities required for medical response to an MCD. Medical response was divided into field rescue, lifesaving first aid/emergency medical treatment, and casualty clearing. The same set of questions were asked for each of these three components, namely:

- Where would the resources come from?
- How fast would they arrive?
- Would they meet requirements as perceived by the respondent?

Also, questions concerning the quality of response as well as the plans and procedures required to support the medical response were provided so the respondent could rank the quality, adequacy and readiness of the required support.

Together, these questions examined the first phase of MCD response and the plans, procedures and capabilities as perceived by those directly responsible. Each of the three medical response components are critical for success. Further, all subsequent life saving actions are dependent upon the success of medical response as a whole, that is, effective and rapid field rescue, emergency treatment and casualty

clearing.

Medical response also is the MCD phase where local resources will most likely be quickly overwhelmed and outside assistance needed. Many local responders could be victims themselves. Even if available for response duties, local responders probably could not cope with the specter of 30,000 injuries without massive outside assistance.

Section 4. Patient Evacuation

Section four concerned the needs and sources for patient evacuation. Patient evacuation is defined as the movement of patients out of the disaster area as a result of local medical facilities being overwhelmed. Questions concerning the quality and timeliness of patient evacuation were provided as well as the adequacy and readiness of the plans and procedures supporting such evacuations.

Section 5. Definitive Care

Section five concerned definitive care, the sources, quality, and timeliness of providing the full range of acute medical services needed for responding to 30,000 injured in a catastrophic earthquake or hurricane. Such care usually will be provided in hospitals. Questions concerning the adequacy and readiness of plans and procedures supporting such care were also asked.

Section 6. Conclusion

Section six was the concluding section of the questionnaire. This section allowed the respondent to use open-ended answers to questions on MCD challenges and improvements. Also, a question was provided which allowed for the filling in of any other comments thought by the respondent to be relevant.

CHAPTER 4

RESULTS

Question #1. Describe your current position (Federal respondent):

FED	Count	Selected	Row Total
FEMA	1	2	2 6.3
DoD	2	5	5 15.6
DVA	3	18	18 56.3
PHS	4	5	5 15.6
Other	5	2	2 6.3
	Column Total	32 100.0	32 100.0

Results: Approximately 56% of the federal responders are from the DVA, as their regional offices as well as Headquarters personnel are directly involved in mass casualty response and so received surveys. Only federal officials with direct program responsibility were sent surveys.

Question #2: Describe your current position (State and local respondent):

STATELOC	Count	Selected	Row Total
StEmgCord	1	12	12 24.5
StMedCord	2	18	18 36.7
LcMedCord	3	12	12 24.5
Other	4	7	7 14.3
	Column Total	49 100.0	49 100.0

Results: State/local respondents are approximately evenly spread between groupings, reflecting those directly involved at the state level and a sample of local officials also directly involved in mass casualty disasters.

Question #3: Describe your current position: Private sector respondent.

FED	Count	Yes 1	No 2	Row Total
FEMA	1		2	2 6.3
DoD	2		5	5 15.6
DVA	3		18	18 56.3
PHS	4		5	5 15.6
Other	5		2	2 6.3
	Column Total	0 0	32 100.0	32 100.0

STATELOC	Count	No	Row Total
StEmgCord	1	12	12 24.5
StMedCord	2	18	18 36.7
LcMedCord	3	12	12 24.5
Other	4	7	7 14.3
	Column Total	49 100.0	49 100.0

Results: No surveys were sent to individuals outside federal, state, or local government and so no responses were received from non-governmental sources.

Question #4: Number of years at your present and closely related positions.

FED Federal by YEARS Years

FED	Count	0-2 (1)	2-4 (2)	4-8 (3)	8-12 (4)	>12 (5)	Row Total
FEMA	1				1	1	2 6.3
DoD	2		2	1	1	1	5 15.6
DVA	3	2	1	4	6	5	18 56.3
PHS	4	1		3	1		5 15.6
Other	5	1				1	2 6.3
	Column Total	4 12.5	3 9.4	8 25.0	9 28.1	8 25.0	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by YEARS Years

STATELOC	Count	0-2 (1)	2-4 (2)	4-8 (3)	8-12 (4)	>12 (5)	Row Total
StEmgCord	1	1	1	1	1	8	12 25.5
StMedCord	2		1		1	14	16 34.0
LcMedCord	3			4		8	12 25.5
Other	4		1	2	2	2	7 14.9
	Column Total	1 2.1	3 6.4	7 14.9	4 8.5	32 68.1	47 100.0

Number of Missing Observations: 35

Results: Most federal respondents (78%) have been in their present or closely related positions for more than 4 years - 53% have been for more than 8 years. State/local respondents are even more experienced with 68% being in their position or related positions for more than 12 years. Approximately 92% have been in their positions or related ones for more than 4 years.

Question #5: Your survey responses are based on the following disaster scenario.

FED Federal by SCENARIO Scenario

FED	Count	Earthquake 1	Hurricane 2	Row Total
FEMA	1	2		2 6.3
DoD	2	3	2	5 15.6
DVA	3	16	2	18 56.3
PHS	4	4	1	5 15.6
Other	5	2		2 6.3
	Column Total	27 84.4	5 15.6	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by SCENARIO Scenario

STATELOC	Count	Earthquake 1	Hurricane 2	Row Total
StEmgCord	1	4	8	12 24.5
StMedCord	2	8	10	18 36.7
LcMedCord	3	8	4	12 24.5
Other	4	4	3	7 14.3
	Column Total	24 49.0	25 51.0	49 100.0

Number of Missing Observations: 33

Results: Most federal responders (83%) based their answers on the catastrophic earthquake scenario. About half state/local responders (49%) based their answers on the catastrophic earthquake scenario and 51% based their answers on a catastrophic hurricane.

Question #6: If field rescue resources were needed for medical response, would they primarily come from (circle all that apply): 1 = local, 2 = state, 3 = DOD, 4 = NDMS, 5 = DVA, 6 = FEMA, 7 = other federal, 8 = private.

Note: Numbers were used for column headings rather than the words to keep the columns from becoming very wide, up to half a page in width.

FED Federal by REFLDSOR Sources Rescue

FED	Count	1	2	12	46	123	Row Total
FEMA	1						2 6.3
DoD	2			1			5 15.6
DVA	3	3		1		2	18 56.3
PHS	4		1		1		5 15.6
Other	5						2 6.3
(Continued)	Column Total	3 9.4	1 3.1	2 6.3	1 3.1	2 6.3	32 100.0

FED Federal by REFLDSOR Sources Rescue

FED	Count	126	1235	1236	1238	1245	Row Total
FEMA	1			1			2 6.3
DoD	2						5 15.6
DVA	3		1		2	1	18 56.3
PHS	4	1					5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	1 3.1	1 3.1	2 6.3	1 3.1	32 100.0

FED Federal by REFLDSOR Sources Rescue

FED	Count	1248	12345	12358	12368	123456	Row Total
FEMA	1						2 6.3
DoD	2	1			1		5 15.6
DVA	3	1	1			2	18 56.3
PHS	4	1					5 15.6
Other	5			1		1	2 6.3
(Continued)	Column Total	3 9.4	1 3.1	1 3.1	1 3.1	3 9.4	32 100.0

FED Federal by REFLDSOR Sources Rescue

FED	Count	123458	123568	1234567	1234568	12345678	Row Total
FEMA	1		1				2 6.3
DoD	2				1	1	5 15.6
DVA	3	2		1		1	18 56.3
PHS	4	1					5 15.6
Other	5						2 6.3
	Column Total	3 9.4	1 3.1	1 3.1	1 3.1	2 6.3	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REFLDSOR Sources Rescue

STATELOC	Count	1	2	12	17	123	Total
1 StEmgCord		1				2	12 24.5
2 StMedCord		3	1	1	1		18 36.7
3 LcMedCord		3		2			12 24.5
4 Other		2		1			7 14.3
(Continued)	Column Total	9 18.4	1 2.0	4 8.2	1 2.0	2 4.1	49 100.0

STATELOC State/Local by REFLDSOR Sources Rescue

STATELOC	Count	125	126	128	234	1234	Row Total
1 StEmgCord			1				12 24.5
2 StMedCord					1		18 36.7
3 LcMedCord			1	1		1	12 24.5
4 Other		1		2			7 14.3
(Continued)	Column Total	1 2.0	2 4.1	3 6.1	1 2.0	1 2.0	49 100.0

STATELOC State/Local by REFLDSOR Sources Rescue

STATELOC	Count	1238	1246	1268	12346	12348	Row Total
1 StEmgCord			1	1		1	12 24.5
2 StMedCord		1		1	2		18 36.7
3 LcMedCord				1			12 24.5
4 Other							7 14.3
(Continued)	Column Total	1 2.0	1 2.0	3 6.1	2 4.1	1 2.0	49 100.0

STATELOC State/Local by REFLDSOR Sources Rescue

STATELOC	Count	12368	12468	12678	13468	23478	Row Total
StEmgCord	1	1		1		1	12 24.5
StMedCord	2		1				18 36.7
LcMedCord	3	1	2				12 24.5
Other	4				1		7 14.3
(Continued)	Column Total	2 4.1	3 6.1	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by REFLDSOR Sources Rescue

STATELOC	Count	1234568	1234578	1234678	12345678	Row Total
StEmgCord	1		1		1	12 24.5
StMedCord	2	1	1	3	1	18 36.7
LcMedCord	3					12 24.5
Other	4					7 14.3
	Column Total	1 2.0	2 4.1	3 6.1	2 4.1	49 100.0

Number of Missing Observations: 33

Results: Most federal respondents believe that three or more sources of field rescue resources will be needed in responding to a medical catastrophic disaster. Approximately 56% believe that local, state and DOD would be included in those chosen. Most state/local respondents also believe that field rescue resources would have to come from multiple sources. However, approximately 50% of state/local respondents believe they would <u>not</u> need DOD resources and 60% believe they would <u>not</u> need NDMS.

Question #7: If FEDERAL field rescue resources were requested, how many hours do you estimate it would actually take before they arrived and were operational (i.e., performing their mission)?

FED Federal by REFLDHR Hrs B/f Fed Rescue

FED	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	Row Total
FEMA	1	1		1		2 6.3
DoD	2		3	2		5 15.6
DVA	3	4	5	5	4	18 56.3
PHS	4	1	4			5 15.6
Other	5		2			2 6.3
	Column Total	6 18.8	14 43.8	8 25.0	4 12.5	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REFLDHR Hrs B/f Fed Rescue

STATELOC	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	>72hrs 6	Row Total
StEmgCord	1	2	5	4	1		12 24.5
StMedCord	2	4	4	5	3	2	18 36.7
LcMedCord	3		3	5	4		12 24.5
Other	4	1	2		2	2	7 14.3
	Column Total	7 14.3	14 28.6	14 28.6	10 20.4	4 8.2	49 100.0

Number of Missing Observations: 33

Results: Approximately 69% of federal respondents believe that federal field rescue resources would arrive within 12-48 hours and be operational. The remainder believe that the resources will be operational in 0-12 hours (19%) or between 48-72 hours (13%). State/local responses are less positive. Approximately 57% believe the resources will arrive after 24 hours, but another 28% believe that it will take greater that 48 hours. Only 14% believe it will take less than 12 hour

Question #8: If FEDERAL field rescue resources were needed, do you believe they would arrive in time to meet field rescue requirements?

FED Federal by REFLDARR Fed Fld Rescue

FED	Count	InTime 2	NotTime 3	Don'tKno 4	Row Total
FEMA	1	1	1		2 6.3
DoD	2	2	3		5 15.6
DVA	3	12	5	1	18 56.3
PHS	4	2	1	2	5 15.6
Other	5		1	1	2 6.3
	Column Total	17 53.1	11 34.4	4 12.5	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REFLDARR Fed Fld Rescue

STATELOC	Count	InTime 2	NotTime 3	Don'tKno 4	Row Total
StEmgCord	1	5	4	3	12 25.0
StMedCord	2	8	6	3	17 35.4
LcMedCord	3	3	7	2	12 25.0
Other	4	2	2	3	7 14.6
	Column Total	18 37.5	19 39.6	11 22.9	48 100.0

Number of Missing Observations: 34

Results: Federal respondents are more positive (53%) about field rescue resources arriving in time to meet requirements than are state/local respondents (38%). However, 34% of federal respondents believe they would not arrive in time as did 40% of the state/local respondents. Approximately 13% of federal respondents and 23% of state/local respondents did not even know.

Question #9: If lifesaving first aid resources were needed after a mass casualty disaster causing 30,000 injured, would they primarily come from (circle all that apply):

Note: For this question, 1 = local, 2 = state, 3 = DOD, 4 = NDMS, 5 = DVA, 6 = FEMA, 7 = other federal department or agency, 8 = private. The respondent could choose one or any combination of options 1-8. Numbers were used for column headings rather than the words to keep the columns from becoming very wide, up to half a page.

FED Federal by REAIDSOR Aid Source

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FED	Count	1	12	124	128	158	Row Total
FEMA	1		1				2 6.5
DoD	2						5 16.1
DVA	3	1	2		1	1	17 54.8
PHS	4			1			5 16.1
Other	5						2 6.5
(Continued)	Column Total	1 3.2	3 9.7	1 3.2	1 3.2	1 3.2	31 100.0

FED Federal by REAIDSOR Aid Source

FED	Count	1234	1238	1248	2345	3456	Row Total
FEMA	1						2 6.5
DoD	2		1	1			5 16.1
DVA	3	1			1		17 54.8
PHS	4	1		1		1	5 16.1
Other	5						2 6.5
(Continued)	Column Total	2 6.5	1 3.2	2 6.5	1 3.2	1 3.2	31 100.0

FED Federal by REAIDSOR Aid Source

FED	Count	12345	12358	12458	13458	123456	Row Total
FEMA	1		1				2 6.5
DoD	2			1		1	5 16.1
DVA	3	2	1	1	1		17 54.8
PHS	4						5 16.1
Other	5						2 6.5
(Continued)	Column Total	2 6.5	2 6.5	2 6.5	1 3.2	1 3.2	31 100.0

FED Federal by REAIDSOR Aid Source

FED	Count	123458	1234567	1234578	12345678	Row Total
FEMA	1					2 6.5
DoD	2				1	5 16.1
DVA	3	3	1	1		17 54.8
PHS	4	1				5 16.1
Other	5		1	1		2 6.5
	Column Total	4 12.9	2 6.5	2 6.5	1 3.2	31 100.0

Number of Missing Observations: 51

STATELOC State/Local by REAIDSOR Aid Source

STATELOC	Count	1	2	6	12	14	Row Total
StEmgCord	1					1	12 24.5
StMedCord	2	3	1				18 36.7
LcMedCord	3	1		1	2		12 24.5
Other	4						7 14.3
(Continued)	Column Total	4 8.2	1 2.0	1 2.0	2 4.1	1 2.0	49 100.0

STATELOC State/Local by REAIDSOR Aid Source

STATELOC	Count	18	123	128	134	234	Row Total
StEmgCord	1			2	1	1	12 24.5
StMedCord	2	1	1	1	1	1	18 36.7
LcMedCord	3	1		2			12 24.5
Other	4		1	1			7 14.3
(Continued)	Column Total	2 4.1	2 4.1	6 12.2	2 4.1	2 4.1	49 100.0

STATELOC State/Local by REAIDSOR Aid Source

STATELOC	Count	246	1234	1236	1238	1246	Row Total
StEmgCord	1				1		12 24.5
StMedCord	2		1		1		18 36.7
LcMedCord	3	1		1			12 24.5
Other	4					1	7 14.3
(Continued)	Column Total	1 2.0	1 2.0	1 2.0	2 4.1	1 2.0	49 100.0

STATELOC State/Local by REAIDSOR Aid Source

STATELOC	Count	1248	1258	1268	1278	1348	Row Total
StEmgCord	1	1	1	1			12 24.5
StMedCord	2						18 36.7
LcMedCord	3	1					12 24.5
Other	4	2			1	1	7 14.3
(Continued)	Column Total	4 8.2	1 2.0	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by REAIDSOR Aid Source

STATELOC	Count	3467	12346	12368	12378	12468	Row Total
StEmgCord	1						12 24.5
StMedCord	2	1	1		1	1	18 36.7
LcMedCord	3			1		1	12 24.5
Other	4						7 14.3
(Continued)	Column Total	1 2.0	1 2.0	1 2.0	1 2.0	2 4.1	49 100.0

STATELOC State/Local by REAIDSOR Aid Source

STATELOC	Count	123468	1234578	12345678	Row Total
StEmgCord	1		1	2	12 24.5
StMedCord	2	1	1	1	18 36.7
LcMedCord	3				12 24.5
Other	4				7 14.3
	Column Total	1 2.0	2 4.1	3 6.1	49 100.0

Number of Missing Observations: 33

Results: There is a general lack of consensus concerning which combination of local, state, private and federal (DOD, NDMS, DVA, FEMA, other) resources would be required in a mass casualty disaster. However, 30% of respondents selected some combination of local, state and private resources without federal support.

Question #10: If FEDERAL lifesaving first aid resources were requested, how many hours do you estimate it would take before they arrived and were operational (i.e., performing their mission)?

FED Federal by REAIDHR Hrs B/f Fed Aid

FED	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	Row Total
FEMA	1			2		2 6.3
DoD	2		2	3		5 15.6
DVA	3	6	4	4	4	18 56.3
PHS	4	1	3	1		5 15.6
Other	5		1	1		2 6.3
	Column Total	7 21.9	10 31.3	11 34.4	4 12.5	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REAIDHR Hrs B/f Fed Aid

STATELOC	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	>72hrs 6	Row Total
StEmgCord	1	4	3	3	2		12 24.5
StMedCord	2	4	4	6	3	1	18 36.7
LcMedCord	3	2	1	3	5	1	12 24.5
Other	4	1	1		3	2	7 14.3
	Column Total	11 22.4	9 18.4	12 24.5	13 26.5	4 8.2	49 100.0

Number of Missing Observations: 33

Results: Most federal responders believed that federal lifesaving first aid resources would take 48 hours or less before being operational at a mass casualty disaster scene. Specifically, approximately 22% believe they would arrive within 12 hours, while 31% believe between 12-24 hours, 34% between 24-48 hours. Only 13% believed they would arrive between 48-72 hours. State/local responders believed these resources would arrive within 72 hours or less. They were evenly divided within this 72 hour time frame, with approximately 22% believing resources would arrive within 12 hours, 18% between 12-24 hours, 25% between 24-48 hours and 27% between 48-72 hours. Notably, 47% of federal and 60% of state/local responders believe it will take 24 hours or more before federal first aid resources arrive and are operational.

Question #11: If FEDERAL lifesaving first aid resources were needed, would they arrive in time to meet requirements?

FED Federal by REAIDREC Fed Aid In Time

FED	Count	In Time 2	Not Time 3	Don'tKno 4	Row Total
FEMA	1		2		2 6.3
DoD	2	2	3		5 15.6
DVA	3	10	5	3	18 56.3
PHS	4	2	2	1	5 15.6
Other	5	1		1	2 6.3
	Column Total	15 46.9	12 37.5	5 15.6	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REAIDREC Fed Aid In Time

STATELOC	Count	Not Need 1	In Time 2	Not Time 3	Don'tKno 4	Row Total
StEmgCord	1		5	6	1	12 24.5
StMedCord	2	1	7	3	7	18 36.7
LcMedCord	3		1	7	4	12 24.5
Other	4		2	1	4	7 14.3
	Column Total	1 2.0	15 30.6	17 34.7	16 32.7	49 100.0

Number of Missing Observations: 33

Results: Almost half of the federal respondents (47%) believe that federal first aid resources will arrive in time to meet requirements, while 38% believe they will not arrive in time. State/local responders are less hopeful, with only 31% believing the resources will arrive in time and another 35% believing they will not. An additional 33% "don't know".

Question #12: If casualty clearing resources were needed, would they primarily come from: 1 = local, 2 = state, 3 = DOD, 4 = NDMS, 5 = DVA, 6 = FEMA, 7 = other federal, 8 = private.

Note: The respondent could choose one or any combination of options 1-8. Numbers were used in the column headings rather than the words to keep the columns from becoming very wide, up to half a page in width.

FED Federal by RECASSOR Source Casualty Clr.

FED	Count	2	3	4	24	123	Row Total
FEMA	1		1				2 6.3
DoD	2		1				5 15.6
DVA	3	1		2		1	18 56.3
PHS	4				1		5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	2 6.3	2 6.3	1 3.1	1 3.1	32 100.0

FED Federal by RECASSOR Source Casualty Clr.

FED	Count	128	467	1234	1236	1238	Row Total
FEMA	1						2 6.3
DoD	2	1		1		1	5 15.6
DVA	3		1	1	1	1	18 56.3
PHS	4			1	1		5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	1 3.1	3 9.4	2 6.3	2 6.3	32 100.0

FED Federal by RECASSOR Source Casualty Clr.

FED	Count	1345	2345	3456	3457	12345	Row Total
FEMA	1						2 6.3
DoD	2						5 15.6
DVA	3	1	2		1	1	18 56.3
PHS	4			1			5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	2 6.3	1 3.1	1 3.1	1 3.1	32 100.0

FED Federal by RECASSOR Source Casualty Clr.

FED	Count	12346	12348	12578	13458	123456	Row Total
FEMA	1						2 6.3
DoD	2					1	5 15.6
DVA	3		1	1			18 56.3
PHS	4				1		5 15.6
Other	5	1					2 6.3
(Continued)	Column Total	1 3.1	1 3.1	1 3.1	1 3.1	1 3.1	32 100.0

FED Federal by RECASSOR Source Casualty Clr.

FED	Count	123457	123458	1234578	12345678	Row Total
FEMA	1		1			2 6.3
DoD	2					5 15.6
DVA	3	1	1		1	18 56.3
PHS	4					5 15.6
Other	5			1		2 6.3
	Column Total	1 3.1	2 6.3	1 3.1	1 3.1	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by RECASSOR Source Casualty Clr.

STATELOC	Count	1	2	3	4	6	Row Total
StEmgCord	1						12 24.5
StMedCord	2	1	2	1	1	1	18 36.7
LcMedCord	3	2					12 24.5
Other	4						7 14.3
(Continued)	Column Total	3 6.1	2 4.1	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by RECASSOR Source Casualty Clr.

STATELOC	Count	12	24	34	123	126	Total
StEmgCord	1				1		12 24.5
StMedCord	2			1		1	18 36.7
LcMedCord	3	3			1		12 24.5
Other	4		1	1	1		7 14.3
(Continued)	Column Total	3 6.1	1 2.0	2 4.1	3 6.1	1 2.0	49 100.0

STATELOC State/Local by RECASSOR Source Casualty Clr.

STATELOC	Count	128	234	236	238	246	Total
StEmgCord	1	1	1				12 24.5
StMedCord	2	1	1		1	1	18 36.7
LcMedCord	3	2		1		1	12 24.5
Other	4	1					7 14.3
(Continued)	Column Total	5 10.2	2 4.1	1 2.0	1 2.0	2 4.1	49 100.0

STATELOC State/Local by RECASSOR Source Casualty Clr.

STATELOC	Count	1234	1238	1246	1248	1268	Total
StEmgCord	1	1	1		1	1	12 24.5
StMedCord	2	2					18 36.7
LcMedCord	3	1				1	12 24.5
Other	4			1			7 14.3
(Continued)	Column Total	4 8.2	1 2.0	1 2.0	1 2.0	2 4.1	49 100.0

STATELOC State/Local by RECASSOR Source Casualty Clr.

STATELOC	Count	1278	3467	12348	12378	12467	Total
StEmgCord	1			1	1		12 24.5
StMedCord	2		1			1	18 36.7
LcMedCord	3						12 24.5
Other	4	1					7 14.3
(Continued)	Column Total	1 2.0	1 2.0	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by RECASSOR Source Casualty Clr.

STATELOC	Count	23468	1234578	12345678	Row Total
StEmgCord	1		1	2	12 24.5
StMedCord	2		1	1	18 36.7
LcMedCord	3				12 24.5
Other	4	1			7 14.3
	Column Total	1 2.0	2 4.1	3 6.1	49 100.0

Number of Missing Observations: 33

Results: No one source of casualty clearing resources was seen as being the primary provider. Rather both federal and state/local respondents' selected evenly from among all the choices as to sources of casualty clearing resources. Most respondents believed there would be three or more sources for the resources needed.

Question #13: If FEDERAL casualty clearing resources were requested, how many hours do you estimate it would take before they arrived and were operational (i.e., performing their mission)?

Federal by RECASHR Fed Hrs Casualty Clear

FED	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	Row Total
FEMA	1			1	1	2 6.3
DoD	2		3	1	1	5 15.6
DVA	3	3	5	6	4	18 56.3
PHS	4	1	2	1	1	5 15.6
Other	5		1	1		2 6.1
	Column Total	4 12.5	11 34.4	10 31.3	7 21.9	32 100.0

STATELOC State/Local by RECASHR Fed Hrs Casualty Clear

STATELOC	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	>72hrs 6	Row Total
StEmgCord	1	2	4	5		1	12 25.0
StMedCord	2	2	5	4	4	2	17 35.4
LcMedCord	3	1	1	3	6	1	12 25.0
Other	4		1	1	3	2	7 14.6
	Column Total	5 10.4	11 22.9	13 27.1	13 27.1	6 12.5	48 100.0

Results: Approximately 34% of federal respondents believe that federal casualty clearing resources will arrive and be operational between 12-24 hours, while an additional 31% believe that this will occur between 24-48 hours. Finally, 22% believe it will take between 48-72 hours while only 13% believe it will be available within 12 hours.

State/local respondents are less positive. Approximately 23% believe that casualty clearing resources will arrive and be operational within 12-24 hours, while 27% believe between 48-72 hours. However, 40% believe resources will arrive after 48 hours.

Question #14: If FEDERAL casualty clearing resources were needed, do you believe they would arrive in time to meet casualty clearing requirements?

FED Federal by RECASREC Fed Casualty Clear In Time

FED	Count	InTime 2	NotTime 3	Don'tKno 4	Row Total
FEMA	1	2			2 6.3
DoD	2	3	2		5 15.6
DVA	3	13	3	2	18 56.3
PHS	4	4		1	5 15.6
Other	5	2			2 6.3
	Column Total	24 75.0	5 15.6	3 9.4	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by RECASREC Fed Casualty Clear In Time

STATELOC	Count	NotNeed 1	InTime 2	NotTime 3	Don'tKno 4	Row Total
StEmgCord	1		9	1	2	12 24.5
StMedCord	2	1	7	1	9	18 36.7
LcMedCord	3		2	5	5	12 24.5
Other	4		1	2	4	7 14.3
	Column Total	1 2.0	19 38.8	9 18.4	20 40.8	49 100.0

Number of Missing Observations: 33

Results: Most federal respondents (75%) believe that casualty clearing resources will arrive in time to meet requirements with only 16% believing they will not. State/local respondents are more unsure. Only approximately 39% believe that the resources will arrive in time while 18% say they will not arrive in time. However 41% do not know.

Question #15: What would be the overall quality (i.e., excellence) of the LOCAL medical response resources employed?

FED Federal by RELOCQL Loc Resp Qual

FED	Count	1 FulAdequate	2 Minimal	3 InAdequate	4 VeryInadequ	5 Don'tKnow	Row Total
FEMA	1			2			2 6.3
DoD	2	1	2	2			5 15.6
DVA	3	4	4	5	3	2	18 56.3
PHS	4		2		2	1	5 15.6
Other	5	1	1				2 6.3
	Column Total	6 18.8	9 28.1	9 28.1	5 15.6	3 9.4	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by RELOCQL Loc Resp Qual

STATELOC	Count	1 FulAdequate	2 Minimal	3 InAdequate	4 VeryInadequ	5 Don'tKnow	Row Total
StEmgCord	1	1	7	3	1		12 24.5
StMedCord	2	6	5	3	3	1	18 36.7
LcMedCord	3		5	7			12 24.5
Other	4	1	4		2		7 14.3
	Column Total	8 16.3	21 42.9	13 26.5	6 12.2	1 2.0	49 100.0

Number of Missing Observations: 33

Results: Approximately 47% of all federal respondents believe that local medical resource quality will be at least minimally adequate, but 44% believe them to be inadequate. State/local respondents are more positive, with 59% believing that the resources would be at least minimally adequate while 39% believe them to be inadequate.

Question #16: What would be the overall quality of the STATE medical response resources employed?

FED Federal by RESTQL State Resp Qual

FED	Count	FulAdqua 1	Minimal 2	Inadquat 3	VeryInad 4	Don'tkno 5	Row Total
FEMA	1			2			2 6.3
DoD	2	1	4				5 15.6
DVA	3	4	10		2	2	18 56.3
PHS	4		2	1	1	1	5 15.6
Other	5		2				2 6.3
	Column Total	5 15.6	18 56.3	3 9.4	3 9.4	3 9.4	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by RESTQL State Resp Qual

STATELOC	Count	FulAdqua 1	Minimal 2	Inadquat 3	VeryInad 4	Don'tkno 5	Row Total
StEmgCord	1	2	6	2	2		12 24.5
StMedCord	2	5	6	2	2	3	18 36.7
LcMedCord	3	1	8	3			12 24.5
Other	4	1	3	2	1		7 14.3
	Column Total	9 18.4	23 46.9	9 18.4	5 10.2	3 6.1	49 100.0

Number of Missing Observations: 33

Results: Approximately 72% of the federal respondents believe that the quality of the state medical response would be minimally adequate or better, while 18% believe it would be inadequate. State/local respondents are less supportive, with 65% believing that the quality would be minimally adequate or better, but 28% believing it would be inadequate.

Question #17: What would be the overall quality of the FEDERAL medical response resources employed?

FED Federal by REFEDQL Fed Resp Qual

FED FEMA	FulAdqua 1	Minimal 2	Inadquat 3	VeryInad 4	Row Total
1			2		2 6.3
2 DoD	3	2			5 15.6
3 DVA	9	8		1	18 56.3
4 PHS	1	3	1		5 15.6
5 Other	1	1			2 6.3
Column Total	14 43.8	14 43.8	3 9.4	1 3.1	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REFEDQL Fed Resp Qual

STATELOC	FulAdqua 1	Minimal 2	Inadquat 3	Don'tkno 5		Row Total
1 StEmgCord	2	7	1	2		12 24.5
2 StMedCord	9	1	5	3		18 36.7
3 LcMedCord		5	2	5		12 24.5
4 Other	1	4		2		7 14.3
Column Total	12 24.5	17 36.7	7 14.3	12 24.5	1 2.0	49 100.0

Number of Missing Observations: 33

Results: Most federal respondents (88%) believe that federal medical response quality will be at least minimally adequate. Somewhat less state/local respondents (72%) believe the same, with 25% saying they "don't know".

Question #18: Do you anticipate that there would be sufficient combined local, state, federal, and private medical response resources to meet the needs of 30,000 injured?

FED Federal by RESUFREC Sufficient Resp

FED	Count	Yes 1	Partial 2	No 3	Row Total
FEMA	1		1	1	2 6.3
DoD	2	3	2		5 15.6
DVA	3	9	5	4	18 56.3
PHS	4	2	3		5 15.6
Other	5		1	1	2 6.3
	Column Total	14 43.8	12 37.5	6 18.8	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by RESUFREC Sufficient Resp

STATELOC	Count	Yes 1	Partial 2	No 3	Row Total
StEmgCord	1	3	4	5	12 24.5
StMedCord	2	6	7	5	18 36.7
LcMedCord	3	3	3	6	12 24.5
Other	4	2	3	2	7 14.3
	Column Total	14 28.6	17 34.7	18 36.7	49 100.0

Number of Missing Observations: 33

Results: Approximately 44% of federal respondents believe there will be sufficient combined medical response resources to meet the needs of 30,000 injured, but only 29% of the state/local respondents believe so. Another 38% of federal and 35% of state/local respondents believe that the combined resources will partially meet the needs. Finally, only 19% federal but 37% state/local believe that the resources will be inadequate.

Question #19: Based on your knowledge, how extensive are the existing operational plans and procedures for coordinating local, state, federal, and private medical response resources?

FED Federal by REPPLNS Resp Plns & Procedures

FED	Count	Extensiv 1	Moderate 2	Minimal 3	Don't Kn 5	Row Total
FEMA	1			2		2 6.3
DoD	2	1	2	2		5 15.6
DVA	3	2	11	5		18 56.3
PHS	4		4		1	5 15.6
Other	5		1	1		2 6.3
	Column Total	3 9.4	18 56.3	10 31.3	1 3.1	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REPPLNS Resp Plns & Procedures

STATELOC	Count	Extensiv 1	Moderate 2	Minimal 3	None 4	Don't Kn 5	Row Total
StEmgCord	1	1	6	5			12 24.5
StMedCord	2	4	9	3		2	18 36.7
LcMedCord	3	3	5	3	1		12 24.5
Other	4		2	5			7 14.3
	Column Total	8 16.3	22 44.9	16 32.7	1 2.0	2 4.1	49 100.0

Number of Missing Observations: 33

Results: About half of all federal respondents (56%) believe there is a moderate level of plans and procedures to coordinate medical response resources, while 31% believed there is minimal levels. State/local respondents are more positive with 45% believing there is a moderate level of plans and procedures, with 16% noting there is extensive plans and procedures, and 33% saying there is minimal amounts.

Question #20: How frequently have these operational plans and procedures been tested or exercised in your city, state, or area of responsibility for responding to approximately 30,000 injuries in a catastrophic earthquake or hurricane?

FED Federal by REPEX Resp Test/Ex

FED	Count	Yearly 1	2 yrs 2	5 yrs 3	>5 yrs 4	Never 5	Row Total
FEMA	1		1			1	2 6.3
DoD	2		3		2		5 15.6
DVA	3	5	6	3		4	18 56.3
PHS	4	2	1	1		1	5 15.6
Other	5					2	2 6.3
	Column Total	7 21.9	11 34.4	4 12.5	2 6.3	8 25.0	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by REPEX Resp Test/Ex

STATELOC	Count	Yearly 1	2 yrs 2	5 yrs 3	>5 yrs 4	Never 5	Row Total
StEmgCord	1	5	2		1	4	12 24.5
StMedCord	2	8	1	4	3	2	18 36.7
LcMedCord	3	1	4	1		6	12 24.5
Other	4	1		2	2	2	7 14.3
	Column Total	15 30.6	7 14.3	7 14.3	6 12.2	14 28.6	49 100.0

Number of Missing Observations: 33

Results: Approximately 56% of federal respondents test or exercise their operational plans and procedures at least every 2 years, but 31% have less than every 5 years or never. Approximately 45% of state/local respondents have tested or exercised at least every 2 years, but 41% have tested or exercised their plans or procedures less than every 5 years.

Question #21: After a mass casualty disaster, what source(s) do you expect would provide evacuation support (e.g., the vehicles, airplanes, etc. necessary for patient evacuation)? Circle all that apply.

Note: For this question 1 = local, 2 = state, 3 = DOD, 4 = federal (non DOD), 5 = private (volunteer, etc.). Numbers were used for column headings rather than the words to keep the columns from becoming very wide, up to half a page in width.

FED Federal by EVCSOR Source Evac Supt

FED	Count	3	23	34	123	124	Row Total
FEMA	1						2 6.3
DoD	2		1	1			5 15.6
DVA	3	1	1	1	1	1	18 56.3
PHS	4				2		5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	2 6.3	2 6.3	3 9.4	1 3.1	32 100.0

FED Federal by EVCSOR Source Evac Supt

FED	Count	125	135	345	1235	2345	Row Total
FEMA	1					2	2 6.3
DoD	2		1				5 15.6
DVA	3	1			3	2	18 56.3
PHS	4			1	1	1	5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	1 3.1	1 3.1	4 12.5	5 15.6	32 100.0

FED Federal by EVCSOR Source Evac Supt

FED	Count	12345	Row Total
FEMA	1		2 6.3
DoD	2	2	5 15.6
DVA	3	7	18 56.3
PHS	4		5 15.6
Other	5	2	2 6.3
	Column Total	11 34.4	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by EVCSOR Source Evac Supt

STATELOC	Count	2	3	4	12	23	Row Total
StEmgCord	1		1		1	2	12 24.5
StMedCord	2	1		1		1	18 36.7
LcMedCord	3					2	12 24.5
Other	4			1		1	7 14.3
(Continued)	Column Total	1 2.0	1 2.0	2 4.1	1 2.0	6 12.2	49 100.0

STATELOC State/Local by EVCSOR Source Evac Supt

STATELOC	Count	24	25	34	35	123	Row Total
StEmgCord	1			1	1		12 24.5
StMedCord	2			2	1		18 36.7
LcMedCord	3	1					12 24.5
Other	4		1		1	1	7 14.3
(Continued)	Column Total	1 2.0	1 2.0	3 6.1	3 6.1	1 2.0	49 100.0

STATELOC State/Local by EVCSOR Source Evac Supt

STATELOC	Count	125	234	235	245	1234	Row Total
StEmgCord	1				1		12 24.5
StMedCord	2	2	2	1			18 36.7
LcMedCord	3	2				1	12 24.5
Other	4						7 14.3
(Continued)	Column Total	4 8.2	2 4.1	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by EVCSOR Source Evac Supt

STATELOC	Count	1235	1245	2345	12345	Row Total
StEmgCord	1		1	3	1	12 24.5
StMedCord	2	1			6	18 36.7
LcMedCord	3		2		4	12 24.5
Other	4			2		7 14.3
	Column Total	1 2.0	3 6.1	5 10.2	11 22.4	49 100.0

Number of Missing Observations: 33

Results: Most all respondents believe that there needs to be multiple sources for evacuation support. Further, 63% of the federal respondents and 42% of the state/local respondents believe that four or more sources would be needed. Almost all responders noted that some type of federal support would be necessary for evacuation.

Question #22: If FEDERAL resources were needed for patient evacuation, how many hours do you estimate it would actually take for them to become operational (i.e., performing their mission)?

FED Federal by EVCFEDHR Hrs B/f Fed Evac

FED	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	>72hrs 6	Row Total
FEMA	1			1	1		2 6.3
DoD	2	1	2	2			5 15.6
DVA	3	4	4	6	2	2	18 56.3
PHS	4	1	1	3			5 15.6
Other	5		2				2 6.3
	Column Total	6 18.8	9 28.1	12 37.5	3 9.4	2 6.3	32 100.0

STATELOC State/Local by EVCFEDHR Hrs B/f Fed Evac

STATELOC	Count	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	>72hrs 6	Row Total
StEmgCord	1	2	5	4	1		12 24.5
StMedCord	2	5	3	6	1	3	18 36.7
LcMedCord	3	2	1	4	5		12 24.5
Other	4		2		2	3	7 14.3
	Column Total	9 18.4	11 22.4	14 28.6	9 18.4	6 12.2	49 100.0

Number of Missing Observations: 33

Results: Only 18% of federal and state/local respondents believe that federal evacuation resources will arrive in the first 12 hours. Another, approximately 25% of all respondents believe they will arrive within 12-24 hours, and 38% federal, 29% state/local believe they will not arrive before 24-48 hours.

Question #23: If FEDERAL evacuation resources were needed, do you believe they would actually arrive in time to meet evacuation requirements?

FED Federal by EVCFDREC Fed Evac In Time

FED	Count	In Time 2	Not Time 3	Don't Know 4	Row Total
FEMA	1	1	1		2 6.5
DoD	2	5			5 16.1
DVA	3	12	3	3	18 58.1
PHS	4	3		2	5 16.1
Other	5	1			1 3.2
	Column Total	22 71.0	4 12.9	5 16.1	31 100.0

Number of Missing Observations: 51

STATELOC State/Local by EVCFDREC Fed Evac In Time

STATELOC	Count	Not Need 1	In Time 2	Not Time 3	Don't Know 4	Row Total
StEmgCord	1		6	2	4	12 24.5
StMedCord	2	1	10	1	6	18 36.7
LcMedCord	3		5	2	5	12 24.5
Other	4		1	3	3	7 14.3
	Column Total	1 2.0	22 44.9	8 16.3	18 36.7	49 100.0

Number of Missing Observations: 33

Results: For the most part federal respondents (71%) are confident that their evacuation resources will arrive in time, while only 45% of state/local respondents believe so with another 37% not sure and 16% believing they will not arrive in time to meet requirements.

Question #24: What would be the overall quality (i.e., excellence) of the LOCAL evacuation resources employed?

FED Federal by EVCLOCQL Loc Evac Qual

FED	Count	Minimal 2	Inadequate 3	VeryInad 4	Don't Know 5	Row Total
FEMA	1		1	1		2 6.3
DoD	2	3	1	1		5 15.6
DVA	3	8	6	4		18 56.3
PHS	4	2		2	1	5 15.6
Other	5	1		1		2 6.3
	Column Total	14 43.8	8 25.0	9 28.1	1 3.1	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by EVCLOCQL Loc Evac Qual

STATELOC	Count	FulAdequate 1	Minimal 2	Inadequate 3	VeryInad 4	Don't Know 5	Row Total
StEmgCord	1	1	5	4	2		12 24.5
StMedCord	2	5	5	3	4	1	18 36.7
LcMedCord	3	1	5	5	1		12 24.5
Other	4	1	1	3	2		7 14.3
	Column Total	8 16.3	16 32.7	15 30.6	9 18.4	1 2.0	49 100.0

Number of Missing Observations: 33

Results: Approximately 50% of all respondents (53% federal and 49% state/local) believe that the quality of local evacuation resources will be inadequate. Another 44% federal and 49% state/local believe them to be at least minimally adequate.

Question #25: What would be the overall quality of the STATE evacuation resources employed?

FED Federal by EVCSTQL St Evac Qual

FED	Count	FulAdqua t 1	Minimal 2	Inadequa te 3	VeryInad 4	Don'tKno 5	Row Total
FEMA	1			2			2 6.3
DoD	2		4	1			5 15.6
DVA	3	1	11	5		1	18 56.3
PHS	4		1	2	1	1	5 15.6
Other	5		2				2 6.3
	Column Total	1 3.1	18 56.3	10 31.3	1 3.1	2 6.3	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRSTQL State Care Qual

STATELOC	Count	FulAdequ ate 1	Minimal 2	Inadequa te 3	VeryInad 4	Don't Kn ow 5	Row Total
StEmgCord	1	1	5	5	1		12 24.5
StMedCord	2	6	6		3	3	18 36.7
LcMedCord	3	2	4	3		3	12 24.5
Other	4		3	2		2	7 14.3
	Column Total	9 18.4	18 36.7	10 20.4	4 8.2	8 16.3	49 100.0

Number of Missing Observations: 33

Results: Approximately half of the federal respondents (59%) and state/local respondents (55%) believe that state evacuation resources will be at least of minimal quality. However, another 31% of federal respondents and 37% of state/local respondents believe that the quality will be inadequate.

Question 26: What would be the overall quality of the FEDERAL evacuation resources employed?

FED Federal by EVCFEDQL Fed Evac Qual

FED	Count	FulAdequat 1	Minimal 2	Inadequate 3	VeryInad 4	Don'tKno 5	Row Total
FEMA	1		1	1			2 6.3
DoD	2	2	3				5 15.6
DVA	3	3	13	1	1		18 56.3
PHS	4		3	1		1	5 15.6
Other	5	1	1				2 6.3
	Column Total	6 18.8	21 65.6	3 9.4	1 3.1	1 3.1	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by EVCFEDQL Fed Evac Qual

STATELOC	Count	FulAdequat 1	Minimal 2	Inadequate 3	Don'tKno 5	Row Total
StEmgCord	1	3	7	2		12 24.5
StMedCord	2	8	4	3	3	18 36.7
LcMedCord	3	1	7	2	2	12 24.5
Other	4	1	4		2	7 14.3
	Column Total	13 26.5	22 44.9	7 14.3	7 14.3	49 100.0

Number of Missing Observations: 33

Results: Most respondents believe (85% federal & 72% state/local) that the quality of federal evacuation resources will be at least minimally adequate.

Question #27: Do you anticipate that there would be sufficient combined local, state, federal, and private evacuation resources to meet the needs of 30,000 injured?

FED Federal by EVCSUFRC Sufficient Evac

FED	Count	Yes 1	Partial 2	No 3	Row Total
FEMA	1		1	1	2 6.3
DoD	2	3	2		5 15.6
DVA	3	5	8	5	18 56.3
PHS	4	2	3		5 15.6
Other	5		1	1	2 6.3
	Column Total	10 31.3	15 46.9	7 21.9	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRSUFREC Sufficient Care

STATELOC	Count	Yes 1	Partialy 2	No 3	Row Total
StEmgCord	1	3	4	5	12 24.5
StMedCord	2	7	8	3	18 36.7
LcMedCord	3	4	5	3	12 24.5
Other	4	2	3	2	7 14.3
	Column Total	16 32.7	20 40.8	13 26.5	49 100.0

Number of Missing Observations: 33

Results: Both federal and state/local respondents felt approximately the same concerning this issue. Only 31% of federal and 26% state/local respondents believed that there would be sufficient combined federal, state, local and private evacuation resources. Another 22% federal and 25% state/local believe there will not be sufficient resources. Finally, 47% federal and 49% state/local respondents believe the resources available will be able to meet only part of the requirement.

Question #28: Based on your experience, how extensive are the existing operational plans and procedures coordinating local, state, federal, and private medical resources for evacuation?

FED Federal by EVCPLNS Evac Plns & Procedures

FED	Extensive 1	Moderate 2	Minimal 3	None 4	Don't Know 5	Row Total
1 FEMA		1	1			2 6.3
2 DoD	1	2	2			5 15.6
3 DVA	1	9	8			18 56.3
4 PHS		2	2		1	5 15.6
5 Other			1	1		2 6.3
Column Total	2 6.3	14 43.8	14 43.8	1 3.1	1 3.1	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by EVCPLNS Evac Plns & Procedures

STATELOC	Extensive 1	Moderate 2	Minimal 3	Don't Know 5	Row Total
1 StEmgCord	1	6	5		12 24.5
2 StMedCord	2	9	5	2	18 36.7
3 LcMedCord	3	2	7		12 24.5
4 Other		1	5	1	7 14.3
Column Total	6 12.2	18 36.7	22 44.9	3 6.1	49 100.0

Number of Missing Observations: 33

Results: Approximately 45% of all respondents believe that evacuation plans and procedures are minimal for coordinating evacuation. Another 44% federal and 37% state/local believe them to be moderate. Only 6% federal and 12% state/local believe them to be extensive.

Question #29: How frequently have these operational plans and procedures been tested or exercised in your city, state or area of responsibility for responding to a catastrophic earthquake or hurricane with approximately 30,000 injured?

FED Federal by EVCEX Evac Test/Ex

FED	Count	Yearly 1	2yrs 2	5yrs 3	>5yrs 4	Never 5	Row Total
FEMA	1		1			1	2 6.3
DoD	2	1	1		2	1	5 15.6
DVA	3	6	2	2	1	7	18 56.3
PHS	4			2		3	5 15.6
Other	5					2	2 6.3
	Column Total	7 21.9	4 12.5	4 12.5	3 9.4	14 43.8	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by EVCEX Evac Test/Ex

STATELOC	Count	Yearly 1	2yrs 2	5yrs 3	>5yrs 4	Never 5	Row Total
StEmgCord	1	3	3	1	1	3	11 22.9
StMedCord	2	6	1	3	2	6	18 37.5
LcMedCord	3	2	2	1	1	6	12 25.0
Other	4			2	1	4	7 14.6
	Column Total	11 22.9	6 12.5	7 14.6	5 10.4	19 39.6	48 100.0

Number of Missing Observations: 34

Results: Approximately one-third of all respondents participate in evacuation exercises based on their plans/procedures at least every two years. However, 44% federal and 40% state/local <u>never</u> have exercised and another approximately 10% have done it less than every five years.

Question #30: After a mass casualty disaster, what source(s) do you expect would provide definitive care (circle all that apply)?

Note: For this question 1 = local, 2 = state, 3 = DOD, 4 = DVA, 5 = NDMS/PHS, 6 = other federal, and 7 = private sources. The respondent could choose one or any combination of options 1-7. Numbers were used for column headings rather than the words to keep the columns from becoming very wide, up to half a page in width.

FED Federal by CRSOR Care Sources

Count		7	12	47	57	125	Row Total
FED							
FEMA	1						2 6.3
DoD	2						5 15.6
DVA	3	1	1	1		1	18 56.3
PHS	4				1		5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	1 3.1	1 3.1	1 3.1	1 3.1	32 100.0

FED Federal by CRSOR Care Sources

Count		234	347	1245	1247	1257	Row Total
FED							
FEMA	1	1					2 6.3
DoD	2				1	1	5 15.6
DVA	3	1		1			18 56.3
PHS	4		1				5 15.6
Other	5						2 6.3
(Continued)	Column Total	2 6.3	1 3.1	1 3.1	1 3.1	1 3.1	32 100.0

FED Federal by CRSOR Care Sources

FED	Count	1457	2347	3457	12345	12347	Row Total
FEMA	1					1	2 6.3
DoD	2		2			1	5 15.6
DVA	3	1		1	1	1	18 56.3
PHS	4						5 15.6
Other	5						2 6.3
(Continued)	Column Total	1 3.1	2 6.3	1 3.1	1 3.1	3 9.4	32 100.0

FED Federal by CRSOR Care Sources

FED	Count	12357	13457	123457	1234567	Row Total
FEMA	1					2 6.3
DoD	2					5 15.6
DVA	3	1	1	2	4	18 56.3
PHS	4	1	1		1	5 15.6
Other	5				2	2 6.3
	Column Total	2 6.3	2 6.3	2 6.3	7 21.9	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRSOR Care Sources

STATELOC	Count	1	2	7	12	13	Row Total
StEmgCord	1						12 24.5
StMedCord	2	1	1				18 36.7
LcMedCord	3	1		1	1	2	12 24.5
Other	4				2		7 14.3
(Continued)	Column Total	2 4.1	1 2.0	1 2.0	3 6.1	2 4.1	49 100.0

STATELOC State/Local by CRSOR Care Sources

STATELOC	Count	25	35	123	125	127	Row Total
StEmgCord	1		1		1		12 24.5
StMedCord	2	1			1	1	18 36.7
LcMedCord	3				1		12 24.5
Other	4			1	1		7 14.3
(Continued)	Column Total	1 2.0	1 2.0	1 2.0	4 8.2	1 2.0	49 100.0

STATELOC State/Local by CRSOR Care Sources

STATELOC	Count	136	157	345	1235	1257	Row Total
StEmgCord	1		1		1	1	12 24.5
StMedCord	2	1		1			18 36.7
LcMedCord	3					2	12 24.5
Other	4						7 14.3
(Continued)	Column Total	1 2.0	1 2.0	1 2.0	1 2.0	3 6.1	49 100.0

STATELOC State/Local by CRSOR Care Sources

STATELOC	Count	1267	1357	1457	2357	12345	Row Total
StEmgCord	1	1				1	12 24.5
StMedCord	2						18 36.7
LcMedCord	3	1	1				12 24.5
Other	4			1	1		7 14.3
(Continued)	Column Total	2 4.1	1 2.0	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by CRSOR Care Sources

STATELOC	Count	12357	12457	12567	13457	23457	Row Total
StEmgCord	1					1	12 24.5
StMedCord	2	2	1		1		18 36.7
LcMedCord	3	1					12 24.5
Other	4			1			7 14.3
(Continued)	Column Total	3 6.1	1 2.0	1 2.0	1 2.0	1 2.0	49 100.0

STATELOC State/Local by CRSOR Care Sources

STATELOC	Count	34567	123457	123567	1234567	Row Total
StEmgCord	1			1	3	12 24.5
StMedCord	2	1	2	1	3	18 36.7
LcMedCord	3				1	12 24.5
Other	4					7 14.3
	Column Total	1 2.0	2 4.1	2 4.1	7 14.3	49 100.0

Number of Missing Observations: 33

Results: Both federal and state/local respondents were evenly distributed concerning the sources of definitive care. Only the last option listing all sources (i.e., local, state, DOD, DVA, NDMS/PHS, other federal, and private) received a higher percentage of response, 22% federal and 14% state/local respectively.

Question #31: If FEDERAL definitive care resources were requested, how many hours do you estimate it actually would take them to become operational (i.e., performing their mission)?

FED Federal by CRFEDHR Hrs B/f Fed Care

FED	Count	Not Need 1	0-12hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	Row Total
FEMA	1		1		1		2 6.3
DoD	2		1	2			5 15.6
DVA	3		6	2	6	4	18 56.3
PHS	4	1	1	2	1		5 15.6
Other	5		1		1		2 6.3
	Column Total	1 3.1	10 31.3	6 18.8	9 28.1	4 12.5	32 100.0

FED Federal by CRFEDHR Hrs B/f Fed Care

FED	>72hrs 6	Row Total
FEMA 1		2 6.3
DoD 2	2	5 15.6
DVA 3		18 56.3
PHS 4		5 15.6
Other 5		2 6.3
Column Total	2 6.3	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRFEDHR Hrs B/f Fed Care

STATELOC	Count	0-12 hrs 2	12-24hrs 3	24-48hrs 4	48-72hrs 5	>72hrs 6	Row Total
StEmgCord	1	2	3	4	1	2	12 24.5
StMedCord	2	4	5		4	5	18 36.7
LcMedCord	3	1	4	2	3	2	12 24.5
Other	4		2		3	2	7 14.3
	Column Total	7 14.3	14 28.6	6 12.2	11 22.4	11 22.4	49 100.0

Number of Missing Observations: 33

Results: Only approximately 30% of federal and state/local respondents believe that federal definitive resources would be operational within 24 hours, while approximately 78% of the federal respondents and 50% of the state/local respondents believe that the resources would be operational within two days. Given the fact that the patients would have to be rescued and transported to definitive care facilities, two days for operationalization <u>may</u> be sufficient. To some extent, this depends on how "operational" is defined and that partial definitive care capability could be available sooner. Note, <u>all</u> state/local respondents felt that federal definitive care resources would be needed, hence there is not a "not need" column in the state/local table above.

Question #32: If FEDERAL resources were needed, do you believe they would actually be available in time to meet definitive care requirements of 30,000 injured?

FED Federal by CRFEDREC Fed Care In Time

FED		Not Need In Time 1	Not Time 2	Don't Know 3	4	Row Total
FEMA	1		1			1 3.2
DoD	2		4	1		5 16.1
DVA	3		14	3	1	18 58.1
PHS	4	1	1	1	2	5 16.1
Other	5		1			1 3.2
Column Total		1 3.2	21 67.7	5 16.1	3 9.7	31 100.0

Number of Missing Observations: 51

STATELOC State/Local by CRFEDREC Fed Care In Time

STATELOC	Count	Not Need In Time 1	Not Time 2	Don't Know 3	4	Row Total
StEmgCord	1		4	4	4	12 24.5
StMedCord	2		9	2	7	18 36.7
LcMedCord	3	1	3	3	5	12 24.5
Other	4		1	4	2	7 14.3
Column Total		1 2.0	17 34.7	13 26.5	18 36.7	49 100.0

Number of Missing Observations: 33

Results: Federal and state/local respondents have a difference in opinion as to whether federal definitive care will be in time. Approximately 68% of federal respondents believe it will be in time while only 35% of state/local respondents believe so. Almost the same number of state/local respondents, 27%, believe it will not be in time while only 16% of federal respondents believe so. Also, a disturbing 37% state/local respondents "don't know".

Question #33: What would be the overall quality (i.e., excellence) of the LOCAL definitive care resources employed?

FED Federal by CRLOCQL Local Care Qual

FED	Count	FulAdequate 1	Minimal 2	Inadequate 3	VeryInad 4	Don't Know 5	Row Total
FEMA	1			1	1		2 6.3
DoD	2	1	2	1	1		5 15.6
DVA	3	2	7	2	6	1	18 56.3
PHS	4		3		1	1	5 15.6
Other	5	1		1			2 6.3
	Column Total	4 12.5	12 37.5	5 15.6	9 28.1	2 6.3	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRLOCQL Local Care Qual

STATELOC	Count	FulAdequate 1	Minimal 2	Inadequate 3	VeryInad 4	Don't Know 5	Row Total
StEmgCord	1	1	6	4	1		12 24.5
StMedCord	2	7	5	1	3	2	18 36.7
LcMedCord	3	2	9	1			12 24.5
Other	4	1	3	2	1		7 14.3
	Column Total	11 22.4	23 46.9	8 16.3	5 10.2	2 4.1	49 100.0

Number of Missing Observations: 33

Results: Federal respondents were almost evenly split with 51% responding that local care quality is at least minimally adequate, while 44% thought it inadequate. State/local respondents were more positive, with 69% believing that the quality would be at least minimal, while only 26% thought it to be inadequate.

Question #34: What would be the overall quality of the STATE definitive care resources employed?

FED Federal by CRSTQL State Care Qual

FED	FulAdequate 1	Minimal 2	Inadequate 3	VeryInad 4	Don't Know 5	Row Total
1 FEMA			2			2 6.3
2 DoD	2	3				5 15.6
3 DVA	2	9	5	1	1	18 56.3
4 PHS		3		1	1	5 15.6
5 Other					2	2 6.3
Column Total	4 12.5	15 46.9	7 21.9	2 6.3	4 12.5	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRSTQL State Care Qual

STATELOC	FulAdequate 1	Minimal 2	Inadequate 3	VeryInad 4	Don't Know 5	Row Total
1 StEmgCord	1	5	5	1		12 24.5
2 StMedCord	6	6		3	3	18 36.7
3 LcMedCord	2	4	3		3	12 24.5
4 Other		3	2		2	7 14.3
Column Total	9 18.4	18 36.7	10 20.4	4 8.2	8 16.3	49 100.0

Number of Missing Observations: 33

Results: A little over half of all respondents (60% federal, 55% state/local) believe that state care quality will be at least minimally adequate, while another approximately 25% (28% federal and 28% state/local) believe it would be inadequate.

Question #35: What would be the overall quality of the FEDERAL definitive care resources employed?

FED Federal by CRFEDQL Fed Care Qual

FED	Count	FulAdequate 1	Minimal 2	Inadequate 3	VerInad 4	Don't Know 5	Row Total
FEMA	1	1	1				2 6.3
DoD	2	4	1				5 15.6
DVA	3	10	7	1			18 56.3
PHS	4	1	2		1	1	5 15.6
Other	5		1			1	2 6.3
	Column Total	16 50.0	12 37.5	1 3.1	1 3.1	2 6.3	32 100.0

Number of Missing Observations: 50

State/Local by CRFEDQL Fed Care Qual

STATELOC	Count	FulAdequate 1	Minimal 2	Inadequate 3	VerInad 4	Don't Know 5	Row Total
StEmgCord	1	2	7	1		2	12 24.5
StMedCord	2	8	4	1		5	18 36.7
LcMedCord	3	2	4	1	1	4	12 24.5
Other	4	2	3			2	7 14.3
	Column Total	14 28.6	18 36.7	3 6.1	1 2.0	13 26.5	49 100.0

Number of Missing Observations: 33

Results: Definitive care quality is at least minimal according to 88% of the federal respondents and 66% of the state/local respondents. However, 27% of the state/local respondents do not know.

Question #36: Do you anticipate there would be sufficient combined local, state, federal, and private resources to meet the needs of 30,000 injured?

FED Federal by CRSUFREC Sufficient Care

FED	Count	Yes 1	Partialy 2	No 3	Row Total
FEMA	1	1	1		2 6.3
DoD	2	5			5 15.6
DVA	3	13	3	2	18 56.3
PHS	4	3	2		5 15.6
Other	5			2	2 6.3
	Column Total	22 68.8	6 18.8	4 12.5	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRSUFREC Sufficient Care

STATELOC	Count	Yes 1	Partialy 2	No 3	Row Total
StEmgCord	1	3	4	5	12 24.5
StMedCord	2	7	8	3	18 36.7
LcMedCord	3	4	5	3	12 24.5
Other	4	2	3	2	7 14.3
	Column Total	16 32.7	20 40.8	13 26.5	49 100.0

Number of Missing Observations: 33

Results: Federal respondents are twice as positive (69%) about the federal capability to provide sufficient care than the state/local respondents (only 33%). Most respondents agree that the federal government can meet at least part of the requirement (88% federal and 74% state/local), but 27% of state/local respondents believe the federal government will be no help at all.

Question #37: How extensive are the existing operational plans and procedures to coordinate local, state, federal, and private locations providing definitive care?

FED Federal by CRPLNS Care Plns & Procedures

FED	Count	Extensiv 1	Moderate 2	Minimal 3	Row Total
FEMA	1	1	1		2 6.3
DoD	2	1	3	1	5 15.6
DVA	3	5	8	5	18 56.3
PHS	4	1	3	1	5 15.6
Other	5		1	1	2 6.3
	Column Total	8 25.0	16 50.0	8 25.0	32 100.0

Number of Missing Observations: 50

STATELOC State/Local by CRPLNS Care Plns & Procedures

STATELOC	Count	Extensiv 1	Moderate 2	Minimal 3	None 4	Don't Know 5	Row Total
StEmgCord	1	1	7	3	1		12 24.5
StMedCord	2	3	8	5		2	18 36.7
LcMedCord	3	2	5	4	1		12 24.5
Other	4		2	4		1	7 14.3
	Column Total	6 12.2	22 44.9	16 32.7	2 4.1	3 6.1	49 100.0

Number of Missing Observations: 33

Results: Most (75%) of federal respondents believe that operational plans and procedures are at least moderately developed for definitive care, while only 57% of state/local respondents believe so - with an additional 33% of state/local respondents believing them to be minimal.

Question #38: How frequently have operational plans and procedures for definitive care been tested or exercised in your city, state or area of responsibility in responding to a catastrophic earthquake or hurricane with approximately 30,000 injuries?

FED Federal by CREX Care Test/Ex

FED	Yearly 1	2yrs 2	5 yrs 3	>5yrs 4	Never 5	Row Total
1 FEMA		1			1	2 6.3
2 DoD	2	1		2		5 15.6
3 DVA	8	3	3		4	18 56.3
4 PHS	2		1	1	1	5 15.6
5 Other					2	2 6.3
Column Total	12 37.5	5 15.6	4 12.5	3 9.4	8 25.0	32 100.0

Number of Missing Observations: 50

State/Local by CREX Care Test/Ex

Count STATELOC	Yearly 1	2yrs 2	5yrs 3	>5yrs 4	Never 5	Row Total
1 StEmgCord	3	3	1	1	4	12 24.5
2 StMedCord	4	1	4	2	7	18 36.7
3 LcMedCord	2	3		1	6	12 24.5
4 Other	1		1	3	2	7 14.3
Column Total	10 20.4	7 14.3	6 12.2	7 14.3	19 38.8	49 100.0

Number of Missing Observations: 33

Results: The results are both good and bad. Good in that 54% federal and 34% state/local respondents test and/or exercise their definitive care plans and procedures at least every two years. However, 34% federal and 53% state/local test/exercise less than every five years. However good the plans and procedures area, for the latter group, they are virtually never practiced and so are not really operational.

Question: Did you provide written comments (re. questions 39-41)

FED Federal by COMMENTS

Comments

FED	Count	Yes 1	No 2	Row Total
FEMA	1	2		2 6.3
DoD	2	5		5 15.6
DVA	3	14	4	18 56.3
PHS	4	5		5 15.6
Other	5	1	1	2 6.3
	Column Total	27 84.4	5 15.6	32 100.0

Number of Missing Observations: 50

State/Local by COMMENTS

Comments

STATELOC	Count	Yes 1	No 2	Row Total
StEmgCord	1	9	3	12 24.5
StMedCord	2	18		18 36.7
LcMedCord	3	11	1	12 24.5
Other	4	7		7 14.3
	Column Total	45 91.8	4 8.2	49 100.0

Number of Missing Observations: 33

Results: While specific written comments do not lend themselves to a data presentation like the above, it is important to note that 84% of the federal respondents and 92% of the state/local respondents provided written comments. This shows the high degree of interest in the subject of MCD in the emergency response community.

CHAPTER 5

DISCUSSION

GENERAL

Of the 101 surveys mailed out, 85 were returned by the cut-off date of March 31, 1995. This was a response rate of 84% which is considered excellent and demonstrates the great interest by respondents in the survey. The results of the survey are discussed below, divided into the survey's sections.

SECTION I: INSTRUCTIONS

This section provided general information to the respondent for completing the survey. Importantly, it introduced two catastrophic disaster scenarios from which the respondent picked the one most likely to occur in his or her geographic area. The scenario served as a reference while completing the survey. Either scenario would result in 30,000 or more injuries, the treatment of which has the focus of the survey.

SECTION II: BACKGROUND

This section was provided to determine general background data of the respondent.

FEDERAL RESPONDENTS (Question 1)

All groups of federal respondents had an excellent response rate

[i.e., FEMA (67%), DOD (86%), DVA (90%) and PHS (71%). This is important not only because it shows a high degree of interest by those directly involved with MCD programs, but also because it ensures an accurate reflection of the interests and views of those surveyed. In some cases, such as PHS and DVA, involvement with MCDs includes regional as well as national staff. However, for FEMA and DOD, this is a headquarters function. While the total federal sample is biased by 56% of the respondents being from the DVA, this is accounted for by dividing (cross tabulating) the responses to each question by each respondent group at the federal, state, or local level. Thus, for any question, the federal (DVA, DOD, FEMA, PHS), state (emergency management or emergency medical director) and local (local medical coordinator) responses are separated and can be readily determined.

STATE/LOCAL RESPONDENTS (Question 2)

State/local professionals surveyed also responded in high numbers, with 89% of the state emergency management directors responding, 72% of the state emergency medical system directors responding, and 89% of local emergency medical system coordinators responding to the survey.

States and localities surveyed were selected because they are among the most vulnerable to an MCD caused by either a catastrophic hurricane or earthquake. The goal was not to obtain responses from <u>every</u> state or locality subject to such disasters, but rather to obtain a representative sample from those geographic areas with the most likelihood. The uniformly high response rate by state and local respondents demonstrates their keen interest in the survey.

A small percentage of respondents believed themselves not to be an emergency or medical director, but belonging to some other grouping in state or local government. This is an acceptable response and the cross tabulation of data accounts for them. They are knowledgeable officials in the area of MCD response and their exact government title is not important for the survey *per se*.

PRIVATE RESPONDENTS (Question 3)

No surveys were mailed to private respondents, hence no respondent answers positively to this question. The focus of this survey is on governmental views concerning MCD response.

NUMBER OF YEARS IN PRESENT POSITION (Question 4)

Respondents to this survey were selected because of their involvement in MCD response. Clearly, both federal and state respondents are highly experienced in this area with 78% federal and 94% state/local respondents having four or more years of experience in the area. Indeed, 68% of state/local respondents have more than 12 years experience. Professionals are not hired for these type of emergency positions only to be quickly rotated out of them. The exception may be DOD with 2 of its 5 respondents having between 2-4 years experience. Given DOD's policy of rotational job assignments, this is understandable and it should be noted that the other 3 DOD respondents surveyed all had 4 or more years in the field.

SCENARIO SELECTED (Question 5)

The survey focused on responding to the consequences of a catastrophic earthquake or hurricane, and specifically to the specter of 30,000 people injured. To assist the respondent in completing the survey, two scenarios were provided which could cause this type of consequence. Most federal respondents (84%) selected the earthquake scenario, while the state/local respondents were evenly divided (49% earthquake, 51% hurricane.) The selection of either scenario is of no consequence *per se*, in that the survey examined the specific response capabilities and capacities in dealing with 30,000 injuries, be they caused by a catastrophic earthquake or hurricane.

SECTION III: MEDICAL RESPONSE

Medical Response was divided into the three component areas of field rescue, lifesaving first aid and casualty clearing.

FIELD RESCUE (QUESTIONS 6-8)

Approximately half of the state/local respondents believe that NDMS and DOD assets and capabilities would not be a source for field rescue. Field rescue is the first of three principle functions in medical response to an MCD. It involves rescuing victims from life threatening situations (collapsed buildings, etc.) This will be a huge task in an MCD with 30,000 injured and one that would need to be accomplished quickly for the highest chance of victim survival.

Respondents at the federal and state/local levels realize that multiple sources of aid will be needed. Local and state resources will be taxed to their fullest. However, 60% of state/local respondents believe that NDMS assets and capabilities will <u>not</u> be a source for field rescue and 50% believe DOD resources will <u>not</u> be a source. These responses are consistent with expectations that only 38% of state/local and 50% of federal respondents believe that federal field rescue resources will arrive in time to meet requirements. These results indicate that because federal field rescue resources are not expected to arrive in time, they are not looked upon as a source of field rescue support at the state or local level.

LIFESAVING FIRST AID (Questions 9-11)

Only 31% of state/local respondents and 47% of federal respondents believe that federal first aid resources will arrive in time to meet requirements. Lifesaving first aid would have to be provided to those rescued, but here as with field rescue, only a minority of state/local respondents and approximately half of the federal respondents believe federal support will arrive in time. While 33% of state/local respondents "don't know", the fact that these highly experienced state and local workers do not know if the federal resources will be in time to meet MCD requirements is troubling.

The lack of confidence in federal first aid resources is also reflected by the 30% of state/local responses stating that only local, state and private resources will be used in lifesaving first aid. Other state/local and federal respondents acknowledge a combination of local, state, federal and private resources will be sources of aid, however they might take up to 72 hours to arrive -- a long time for such type of aid.

CASUALTY CLEARING (Questions 12-14)

Many state/local respondents view the timeliness of federal support for casualty clearing (i.e., triage and medical stabilization) in the same manner they view the other two parts of medical response - either they are unsure whether it will arrive in time (41%) or believe it will not (18%). This uncertainty is at least partially due to the view that 40% of state/local respondents believe it will take more than 48 hours before federal assistance arrives and is operational. Most federal respondents (75%) are more positive and believe federal resources will arrive in time to meet requirements. They also believe (78%) that the resources will be operational in the disaster area within 48 hours after the event.

Most all state/local and federal respondents believe that the sources of casualty clearing will include local and state support but will also include some combination of the federal support listed (i.e., DOD, NDMS, FEMA, DVA), when it finally arrives.

ADEQUACY AND QUALITY OF RESPONSE RESOURCES (Questions 15-18)

Less than one-third of the state/local respondents and approximately half of federal respondents believe that the combined federal, state, and local response resources will meet the needs of an estimated 30,000 injured. However, Federal respondents are highly positive about the quality of federal and state response resources, while state/local respondents are not so positive. Neither group is particularly positive about the quality of local response resources.

Only 29% of the state/local respondents and 44% of federal respondents believe that the combined federal, state, and local medical response resources will meet the needs of an estimated 30,000 injured. Medical response is the first of three response phases. If this phase cannot meet the needs of those injured, the phases of evacuation and definitive care will not be able to either. Each phase is dependent upon the successful completion of the phase that preceded it.

Most federal respondents (88%) believe that the federal quality of response resources will be at least minimally adequate. This positive view begins to drop somewhat when federal respondents considered state resources with 72% of federal respondents believing that these resources will be at least of minimally adequate quality. Confidence in response quality drops further when federal respondents consider local resources quality, with only 47% federal respondents believing these at least minimally adequate. However, only approximately 60% of state/local respondents believe that federal, state or local response resources will be at least minimally adequate.

PLANS AND PROCEDURES (Questions 19-20)

Plans and procedures for coordinating federal, state, local and private medical response to an MCD are generally not highly developed. In addition, while half of all respondents have tested or exercised their plans and procedures at least every 2 years, another third of the federal and 40% of the state/local respondents have never tested or exercised their plans or procedures.

Over 90% of all respondents believe there are at least minimal plans and procedures for coordinating federal, state, local and private medical response. Over 60% of all respondents believe there are moderate levels of plans and procedures with many participating localities. So, while there is at least minimal levels of plans and procedures, additional work needs to be done to ensure at least moderate levels of plans and procedures available.

Approximately 50% of the respondents noted that plans and procedures

are tested or exercised at least every 2 years. However, another 31% federal and 41% state/local have not participated in the testing or exercising of their plans and procedures. It is impossible to validate plans and procedures if tests and exercises are not conducted regularly. Without these tests and exercises, capabilities cannot be assured.

SECTION IV: EVACUATION (Questions 21-29)

In an MCD with 30,000 injures, patient evacuation out of the disaster area will be a necessity. Local medical facilities, personnel and services will be overwhelmed due to the large influx of patients and/or these resources being victims themselves and so unavailable to support the required medical response. In an MCD with so many casualties, only 31% of federal and 26% state/local respondents believe there will be sufficient combined local, state, federal and private resources to meet requirements. This does not mean that patients will not be evacuated, rather they are not expected to be evacuated as quickly as they "should" to optimalize care. Localities, states and DOD are most often sighted as supplying the evacuation resources.

Getting federal evacuation resources into the disaster area is seen as part of the problem. While 71% of the federal respondents believe they will arrive in time, only 45% of state/local respondents believe so, with another 37% not sure. Once having arrived and being operational, most respondents (85% federal, 72% state/local) believe that the quality of the federal evacuation resources will be at least minimally adequate. However, only about half of the respondents believe the state or local evacuation resources will be of minimal or better quality. This lack of quality further degrades the ability of evacuation resources to meet requirements.

Good plans and procedures could maximize the availability of evacuation resources for an MCD response. Of all respondents, 94% believe that evacuation plans and procedures are minimally developed or better, with approximately 50% of all respondents believing them to

be moderately developed or better. However, for evacuation plans and procedures to be ready require that they be tested and exercised regularly. Procedures for moving, handling and handing-off patients between different care providers need to be agreed upon and practiced, so when they are done under the pressure and chaos of an MCD, they already will have been practiced efficiently and effectively in a test or exercise within the past 2 years. Unfortunately, 40% of all respondents have never participated in any test/exercise and another 10% have not participated for over 5 years.

This lack of test/exercise participation is problematic. State and local medical directors and coordinators surveyed should be participating in such activities, yet 50% of the local medical coordinators and approximately 33% of the state emergency directors and state emergency medical directors never have. Participation from federal respondents should be higher too, especially from within DOD. Approximately, 44% of the federal respondents never have participated in any test/exercise with another 9% not participating in over 5 years. It is hard to ensure readiness if testing and exercising is not taking place regularly with participation by key local, state and federal officials.

SECTION V: DEFINITIVE CARE (Question 30-38)

Definitive care is the third and final phase in responding to an MCD. It involves providing the full range of medical services, usually in some type of hospital setting, to victims of an MCD. It can be done in the disaster area if facilities are sufficiently undamaged, equipped and staffed, or it can be done outside the disaster area if patients are evacuated. Importantly, 32% federal and 68% state/local respondents believe that there would be insufficient local, state, federal, and private definitive care resources to meet the requirement resulting from an MCD with 30,000 injured.

Definitive care resources are seen by most respondents as coming from local, state, and federal sources. However, the quality of the definitive care provided is seen by respondents as being varied.

Federal care is viewed as the best, with 88% federal and 66% state/local respondents seeing it as at least of minimal quality and with an additional 27% of state/local respondents not knowing. This is a lot of experienced respondents not knowing the quality of a key component to effective MCD response. Only a little over half of all respondents (60% federal and 55% state/local) believe that state quality will be at least minimally adequate. Local quality is seen as at least minimally adequate by 51% of federal and 69% of the state/local respondents.

There is some concern and a surprising lack of knowledge about federal definitive care resources arriving in time to meet requirements. Approximately 27% of state/local respondents believe that federal resources would not be available in time to meet requirements and an additional 37% do not know. Most respondents believe there are plans and procedures in place with 75% federal and 57% state/local believing them to be moderately developed and an additional 25% federal and 33% state/local believing them minimally developed. But testing and exercising of these plans and procedures are not uniformity high. While 54% federal and 34% state/local respondents report testing and/or exercising within the past 2 years, another 34% federal and 55% state/local report not testing or exercising definitive care plans and procedures within the past 5 years.

The general consensus of respondents is that there is a lot of definitive care resources available at varying levels of quality able to respond to an MCD with 30,000 casualties, albeit insufficient for all those injured. At least some minimal level of plans and procedures exists for utilizing these assets, but in half the state/local areas they have not been tested or exercised in the past 5 years. In addition, there is a surprising lack of knowledge at the state/local levels as to the quality and responsiveness of federal definitive care assets. It is hard to have an effective response program if you do not know what resources you can plan on for support.

CHAPTER 6

CONCLUSIONS

This survey focused on developing baseline information concerning this nation's capabilities to respond to an MCD. As such, it did not focus or critique any one system currently developed or proposed for responding to an MCD. Rather, the survey focused on the perceived requirements and capabilities as understood by those who would be called upon to respond.

Overall, 84% responded to the survey, with high representation in both the federal and state/local groups of respondents. This response rate shows the high degree of interest by federal, state and local emergency professionals in MCD. In addition, both federal and state respondents are highly experienced in this area, with 78% federal and 94% state/local respondents having four or more years of experience in the area. Indeed, 68% of state/local respondents have more than 12 years of experience.

In all three phases of MCD response, (i.e., medical response, patient evacuation and definitive care), concern is expressed that there are not enough resources to meet the requirements created by 30,000 injuries and that non-local resources will not arrive in time. This is especially believed by state/local respondents. The perceived lack of resources is a serious concern to the viability of effective MCD response. Quite simply, this survey indicates that officials believe that there will not be enough resources to do the job.

Medical response consists of three principal functions: field rescue, lifesaving first aid, and casualty clearing (i.e., triage and medical stabilization). During an MCD, all functions under medical response will constitute a huge task.

Concerning field rescue, a majority of the state/local respondents believe both that NDMS resources will not be a source for field rescue and 50% believe that DOD will not be a resource. State/local respondents see state and local resources being used for field rescue with federal resources filling in to a more limited extent when they finally arrive. Approximately 50% of the federal respondents agree that federal resources will not arrive in time or were unsure.

States and localities are seen as initially being on their own concerning lifesaving first aid as well. A majority of state/local and federal respondents do not believe that federal lifesaving first aid resources will arrive in time or they do not know. Respondents acknowledge that a combination of local, state, federal and private resources will eventually be needed to meet the large demand, however federal aid might take up to 72 hours to arrive -- a long time for such assistance to arrive given the immediate need for first aid.

Casualty clearing also is seen by state/local respondents as being at first dependent on state and local resources. Again, either state/local respondents are unsure whether federal resources will arrive in time (41%) or believe they will not arrive in time (18%). Federal respondents are more positive with 75% believing that federal resources will arrive in time to meet requirements.

In an MCD with 30,000 injuries, patient evacuation out of the disaster area will be a necessity -- the second phase of MCD response. Local medical facilities and personnel are expected to be overwhelmed due to the large influx of patients and/or these resources being victims themselves. However, only 31% federal and 26% state/local respondents believe there will be sufficient combined local, state, federal and private evacuation resources to meet requirements and another 50% of all respondents acknowledged there are sufficient resources to only partially meet the requirement. The ability to move patients out of the area is further slowed by the fact that 40% of all respondents have never participated in any evacuation test or exercise and another 10% have not for the last 5 years -- yet these respondents would be the key players planning for and conducting patient evacuation.

Definitive care is the third and final phase in responding to an MCD. It involves providing the full range of medical services, usually in some type of hospital setting, to victims of an MCD. However, 68% of state/local respondents believe that there will be insufficient local, state, federal and private definitive care resources to meet the requirement resulting from an MCD with 30,000 injured. Federal respondents are more positive with only 32% believing there are insufficient resources. The lack of confidence expressed by state/local respondents is of concern, for if their views are correct, there may be a serious lack in response capability.

Responses to this survey center around the perceived lack of resource capability or lack of ability to get the resources to the MCD scene in time to meet requirements. Such perceptions by experienced professionals are cause for serious concern and warrant further review by those at all levels of government responsible for planning and responding to mass casualty disasters.

APPENDICES

ENDNOTES

1. "In the Catastrophic Disaster: Who Will Help the Injured?", *Journal of Civil Defense*, (June, 1991), p. 16.

2. "Are We Ready For An Armenia-Style Earthquake?", *JEMS*, (February 1989), p. 6.

3. *The Federal Response Plan*, Washington D.C., The Federal Emergency Management Agency, (May, 1993).

4. *National Disaster Medical System: Strategic Vision*, U.S. Department of Health and Human Services, Public Health Service, 1994, p. II-4.

5. "Analysis of Medical Needs in Disasters Caused by Earthquake: The Need for a Uniform Injury Reporting Scheme," *Disasters*, (Volume 13, Number 4), p. 365.

6. Noji, Eric. "Medical/Health Planning and Response to Earthquake-Related Building Collapse," *Testimony to the Subcommittee on Science, Research and Technology, Committee On Science, Space and Technology, U.S. House of Representatives*, Washington D.C., (March 15, 1989), p. 3.

7. Sapir, Debarati, G. and Lechat, Michel, F. "Reducing The Impact Of Natural Disasters: Why Aren't We Better Prepared?", *Health Policy And Planning*, {1986, 1(2)], p. 125.

8. *National Disaster Medical System: Strategic Vision*, p. II-3.

9. *National Disaster Medical System: Strategic Vision*, p. II-3.

10. *National Disaster Medical System: Strategic Vision*, p. II-4.

11. Baine, David P. "Readiness Of U.S. Contingency Hospital Systems To Treat War Casualties," *Testimony to Subcommittee on Oversight and Investigations, Committee On Veterans' Affairs, House of Representatives,* Washington D.C., (March 25, 1992), p.5.

NATIONAL DEFENSE UNIVERSITY
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REPLY TO ATTENTION OF: Jeffrey Glick

November 18, 1994

Dear

I am writing to you to ask for your help in an important national survey concerning this Country's ability to respond to a mass casualty disaster. I am currently assigned to the Industrial College of the Armed Forces at the National Defense University in Washington D.C. I have worked at the Federal Emergency Management Agency for the past 12 years and have direct experience in many areas of emergency response. The enclosed survey should take you no more than 15 minutes to complete.

While the United States has been spared from a mass casualty disaster, the threat is ever-present. The enclosed survey requests your opinions on medical response, patient evacuation and definitive care needed as a result of a mass casualty disaster. Please record your answers directly on the survey form by circling the number corresponding to your answer. Return the completed survey form to me in the enclosed pre-addressed envelope. Responses from individual survey participants will not be identified in the report. The results of the survey will be used to provide information about this Country's capability for responding to the medical needs generated by a mass casualty disaster.

I am sending surveys to selected:

- Directors,	State Emergency Management Offices
- Directors,	State Emergency Medical Services Offices
- Coordinators,	Local Emergency Management Agencies
- Officials,	Federal Emergency Management Agency
	Department of Veterans Affairs
	Department of Defense
	Public Health Service,

Let me thank you in advance for all your help. Please return the completed survey forms December 15, 1994, so I can include your answers in the survey's results. Also, if you would like a copy of the final report, please include your address when returning your survey. If you have any questions or comments, I can be reached by phone at (202) 475-1799.

Sincerely,

Jeffrey Glick

NATIONAL DEFENSE UNIVERSITY

MASS CASUALTY DISASTER RESPONSE SURVEY

I. INSTRUCTIONS

Please answer all of the questions in the survey by circling the number of the best answer. As you answer the questions, use the most appropriate catastrophic disaster scenario provided below. Such disasters are thought capable of causing 30,000 or more injuries.

a. Federal officials: Answer the survey in terms of an 8.0 Richter scale earthquake in downtown Memphis, TN.

b. State or local officials: Assume that the center of your largest city has been directly hit by a:

a. Category 4-5 Hurricane, or
b. An earthquake measuring 8.0 on the Richter scale.

Please note the questionnaire is broken down into five parts:

I. Background: Your background
II. Medical Response: Principal medical functions needing to occur in the first few days following a catastrophic earthquake or hurricane
III. Patient Evacuation: Movement of patients out of the disaster area when local medical facilities are overwhelmed.
IV. Definitive Care: Provision of the full range of medical services.
V. Conclusion: Additional comments

II. Your Background

- Describe your current position.

1. Federal Respondent

1. Federal Emergency Management Agency (FEMA) Coordinator
2. Department of Defense (DOD) Coordinator
3. Department of Veteran Affairs (DVA) Coordinator
4. Public Health Service (PHS) Coordinator
5. Other: _____
6. NOT a Federal official

2. State and Local Respondent

1. State Emergency Management Coordinator
2. State Emergency Medical System Coordinator
3. Local Emergency Management System Coordinator
4. Other: _____
5. NOT a state or local official

3. Private Sector Respondent (Volunteer, Non-profit, etc.): ____
_____

4. Number of years at your present and closely related positions.

1. 0-2, 2. 2-4, 3. 4-8, 4. 8-12, 5. More than 12 yrs.

5. Your survey responses are based on the following disaster scenario:

1. Earthquake, 8.0 on the Richter scale
2. Hurricane, category 4-5

III. MEDICAL RESPONSE: NEEDS & CAPABILITIES

A. DEFINITION:

Medical Response consists of three principal functions that need to occur in the first few days following a catastrophic earthquake or hurricane resulting in 30,000 injuries. They are: field rescue, lifesaving first aid, and casualty clearing (triage and medical stabilization.)

B. SOURCES OF RESPONSE:

- Medical Response: Field Rescue

6. If field rescue resources were needed for medical response, would they primarily come from (circle all that apply):

1. Local 2. State 3. DOD 4. National Disaster Medical System (NDMS) 5. DVA 6. FEMA 7. Other Fed. 8. Private

7. If FEDERAL field rescue resources were requested, how many hours do you estimate it would actually take before they arrived and were operational (i.e., performing their mission)?

1. Fed. resources not needed 2. 0-12 hrs. 3. 12-24 hrs.
4. 24-48 hrs. 5. 48-72 hrs. 6. More than 72 hrs.

8. If FEDERAL field rescue resources were needed, do you believe they would arrive in time to meet field rescue requirements?

1. Federal resources not needed 2. WOULD arrive in time
3. Would NOT arrive in time 4. Don't know

- <u>Medical Response: Lifesaving First Aid/Emergency Medical Treatment</u>

9. If lifesaving first aid resources were needed after a mass casualty disaster causing 30,000 injured, would they primarily come from (circle all that apply):

1. Local 2. State 3. DOD 4. NDMS 5. DVA 6. FEMA
7. Other federal department or agency 8. Private

10. If FEDERAL lifesaving first aid resources were requested, how many hours do you estimate it would take before they arrived and were operational (i.e., performing their mission)?

1. Fed. resources not needed 2. 0-12 hrs. 3. 12-24 hrs.
4. 24-48 hrs. 5. 48-72 hrs. 6. More than 72 hrs.

11. If FEDERAL lifesaving first aid resources were needed, would they arrive in time to meet requirements?

1. Federal resources not needed 2. WOULD arrive in time
3. Would NOT arrive in time 4. Don't know

- <u>Medical Response: Casualty Clearing</u>

12. If casualty clearing resources were needed, would they primarily come from:

1. Local 2. State 3. DOD 4. NDMS 5. DVA 6. FEMA
7. Other federal 8. Private

13. If FEDERAL casualty clearing resources were requested, how many hours do you estimate it would take before they arrived and were operational (i.e., performing their mission)?

1. Fed. resources not needed 2. 0-12 hrs. 3. 12-24 hrs.
4. 24-48 hrs. 5. 48-72 hrs. 6. More than 72 hrs.

14. If FEDERAL casualty clearing resources were needed, do you believe they would arrive in time to meet casualty clearing requirements?

1. Federal resources not needed 2. WOULD arrive in time
3. Would NOT arrive in time 4. Don't know

C. QUALITY OF RESPONSE

15. What would be the overall quality (i.e., excellence) of the LOCAL medical response resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very Inadequate 5. Don't know

16. What would be the overall quality of the STATE medical response resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

17. What would be the overall quality of the FEDERAL medical response resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

18. Do you anticipate that there would be sufficient combined local, state, federal, and private medical response resources to meet the needs of 30,000 injured?

1. Yes 2. Partially 3. No

D. PLANS & PROCEDURES

19. Based on your knowledge, how extensive are the existing operational plans and procedures for coordinating local, state, federal, and private medical response resources?

1. Extensive (ALL participating medical response locations)
2. Moderate (MANY participating medical response locations)
3. Minimal (FEW participating medical response locations)
4. None
5. Don't know

20. How frequently have these operational plans and procedures been tested or exercised in your city, state, or area of responsibility for responding to approximately 30,000 injuries in a catastrophic earthquake or hurricane?

1. Yearly 2. Every 2 years 3. Once in past 5 years
4. Less frequently than every 5 years 5. Never (to your knowledge)

IV. PATIENT EVACUATION

A. DEFINITION

Movement of patients out of the disaster area when local medical facilities are overwhelmed.

B. SOURCES OF RESPONSE

21. After a mass casualty disaster, what source(s) do you expect would provide evacuation support (e.g., the vehicles, airplanes, etc. necessary for patient evacuation)? Circle all that apply.

1. Local 2. State 3. DOD 4. Federal (non-DOD)
5. Private (volunteer, etc.)

22. If FEDERAL resources were needed for patient evacuation, how many hours do you estimate it would actually take for them to become operational (i.e., performing their mission)?

1. Federal resources not needed 2. 0-12 hrs. 3. 12-24 hrs.
4. 24-48 hrs. 5. 48-72 hrs. 6. More than 72 hrs.

23. If FEDERAL evacuation resources were needed, do you believe they would actually arrive in time to meet evacuation requirements?

1. Federal resources not needed 2. WOULD arrive in time
3. Would NOT arrive in time 4. Don't know

C. QUALITY OF RESPONSE

24. What would be the overall quality (i.e., excellence) of the LOCAL evacuation resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

25. What would be the overall quality of the STATE evacuation resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

26. What would be the overall quality of the FEDERAL evacuation resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

27. Do you anticipate that there would be sufficient combined local, state, federal, and private evacuation resources to meet the needs of 30,000 injured?

1. Yes 2. Partially 3. No

D. PLANS & PROCEDURES

28. Based on your experience, how extensive are the existing operational plans and procedures coordinating local, state, federal, and private medical resources for evacuation?

1. Extensive (ALL participating evacuation organizations)
2. Moderate (MANY participating evacuation organizations)
3. Minimal (FEW participating evacuation organizations)
4. None
5. Don't know

29. How frequently have these operational plans and procedures been tested or exercised in your city, state or area of responsibility for responding to an catastrophic earthquake or hurricane with approximately 30,000 injured.

1. Yearly 2. Bi-yearly 3. Once in past 5 years 4. Less frequently than every 5 years 5. Never (to your knowledge)

V. DEFINITIVE CARE

A. DEFINITION:

The provision of the full range of medical services, usually in some type of hospital setting, needed for responding to the 30,000 injured in a catastrophic earthquake or hurricane.

B. SOURCES OF CARE

30. After a mass casualty disaster, what source(s) do you expect would provide definitive care (circle all that apply)?

1. Local 2. State 3. DOD 4. DVA 5. NDMS/PHS
6. Other federal 7. Private

31. If FEDERAL definitive care resources were requested, how many hours do you estimate it actually would take them to become operational (i.e., performing their mission)?

1. Federal resources not needed 2. 0-12 hrs. 3. 12-24 hrs.
4. 24-48 hrs. 5. 48-72 hrs. 6. More than 72 hrs.

32. If FEDERAL resources were needed, do you believe they would actually be available in time to meet definitive care requirements of 30,000 injured?

1. Federal resources not needed 2. WOULD be operational in time 3. Would NOT arrive in time 4. Don't know

C. QUALITY OF RESPONSE

33. What would be the overall quality (i.e., excellence) of the LOCAL definitive care resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

34. What would be the overall quality of the STATE definitive care resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

35. What would be the overall quality of the FEDERAL definitive care resources employed?

1. Fully adequate 2. Minimally adequate
3. Inadequate 4. Very inadequate 5. Don't know

36. Do you anticipate there would be sufficient combined local, state, federal, and private resources to meet the needs of 30,000 injured?

1. Yes 2. Partially 3. No

D. PLANS & PROCEDURES

37. How extensive are the existing operational plans and procedures to coordinate local, state, federal, and private locations providing definitive care?

1. Extensive (ALL participating locations)
2. Moderate (SOME participating locations)
3. Minimal (FEW participating locations)
4. None
5. Don't know

38. How frequently have operational plans and procedures for definitive care been tested or exercised in your city, state or area of responsibility in responding to a catastrophic earthquake or hurricane with approximately 30,000 injuries?

1. Yearly 2. Bi-yearly 3. Once in past 5 years 4. Less frequently than every 5 years 5. Never

VI. CONCLUSION

- Please complete the following section using additional paper if needed.

39. From your city's, state's, or area of responsibility's perspective, what do you think are the three major challenges in medically responding to a catastrophic earthquake or hurricane with approximately 30,000 injuries?

40. If improvements are needed in responding to a mass casualty disaster with 30,000 injuries, how would you improve the resources and capabilities of the present medical response community at the local, state, federal, and/or private levels?

41. Other comments: