CHAPTER I

INTRODUCTION

CHAPTER I: INTRODUCTION

From August 1992 through January 1994, the United States suffered a series of natural disasters that were more costly in dollar value terms than in any other similar period in the nation's history. Although loss of life was not as great as had been experienced in some previous disasters, immediate loss of property and the accompanying dislocation produced human suffering on a scale that the United States has rarely seen. Public and private response to these disasters, from the local to the national level, was rapid and largely effective. As expected significant problems were identified that indicated that the nation was not as fully prepared to cope with major catastrophic disaster as might be desired. The experience of the last two years indicates that disasters cannot be considered exceedingly rare events, and the nation needs to improve its response capabilities to continue to handle such future disasters effectively. Improvement is also needed if we hope to cope at all with the larger catastrophic event that many are predicting will occur before too long. If the Los Angeles earthquake had occurred 28 hours later, there would have been such a major calamity in January 1994. Additionally, man made catastrophic disasters are expected to increase as evidenced by the explosion in the World Trade Center.

For these reasons, many of the organizations involved in catastrophic disaster response have started to address improvements. The Office of Emergency Preparedness as the action agent for ESF#8 and NDMS began an assessment of its program with the supporting agencies immediately after the Florida hurricane in 1992. The results of the assessment were used to initiate a process to develop and implement improvements through the NDMS Strategic Vision.

The National Disaster Medical System is a cooperative effort of public and private organizations and individuals to provide emergency medical treatment, casualty evaluation and definitive medical care to victims of catastrophic and man made disasters. Under the Federal Response Plan for disasters, it represents a major part of the Federal government's health and medical response to disasters. The Office of Emergency Preparedness of the U.S. Department of Health and Human Services has the responsibility for administering the National Disaster Medical System in partnership with the Department of Defense, the Department of Veterans Affairs and the Federal Emergency Management Agency. In

January 1994, work groups made up of representatives of these NDMS partner agencies completed the process of reviewing the assessment of NDMS and formulating recommendations for the Strategic Vision. These recommendations were reviewed and approved by the NDMS Senior Policy Group This document is primarily a statement of these recommendations.

This document represents the collaborative work of representatives of the NDMS partner agencies, and the Strategic Vision provides guidance for the continuation of this collaborative effort as the objectives are pursued over the next five years and perhaps beyond. The Strategic Vision establishes an outline for a process for continuing assessment and implementation of improvements. As such, the Strategic Vision is a statement representing a point in an on-going process of self-evaluation and improvement, and is intended to support rather than constrain that process. It is a "working document" to be used by NDMS in realizing its larger goals, and to be reassessed and altered as circumstances require.

Following this Introduction, this document is composed of nine chapters and three appendices. Chapter II, presents a definition of NDMS, a brief history of the program, and a statement of current challenges. The next chapter provides some philosophical considerations supporting the Strategic Vision, the continuing planning process, and the future goals of the program. This discussion forms the basic guidance for interpreting the objectives and the direction of the effort for their implementation.

Chapter IV presents an overview of the Strategic Vision and describes the development and implementation process. This document consists of thirty-three objectives developed by the NDMS work groups. These objectives are grouped under four program areas which entail the major goals for the NDMS program in the future. These program areas are:

- NDMS policy and overall direction;
- Disaster Medical Assistance Team policy and program;
- education, training and exercises; and
- networking Federal, regional, State and local planning and response.

Besides presenting a summary of these four program areas, Chapter IV presents a discussion of the Strategic Vision development process in terms of the anticipated continuation of that process in the realization of the objectives. Chapters V through VIII provide a more detailed discussion of the goals and objectives associated with the four program areas. It is in these chapters that the substance of the Strategic Vision is presented.

Chapter IX presents general guidance for the implementation of the Strategic Vision. As pointed out in this chapter, the implementation process involves reviewing and refining the objectives, deciding on priorities and time frames for completion, and carrying out realization of the objectives. It also involves monitoring the process and continuously reassessing the objectives against current program needs. The planning process does not end with the production of this document, rather, this document is to serve as the beginning of a process to guide NDMS to the future. This chapter also includes a statement of what NDMS expects to gain by implementing the Strategic Vision.

Chapter X presents some conclusions about the Strategic Vision and the activities which led to the development of this document. Appendix material includes a roster of participants in the NDMS work groups which produced the goals, objectives and tasks for the Strategic Vision. This is followed by a schedule of meetings that were held to develop the Strategic Vision. Finally, a tracking chart summarizing the number of tasks and milestones associated with the objectives is presented in the Appendices.

CHAPTER II

HISTORY AND CURRENT CHALLENGE

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In this chapter, NDMS is defined, a brief review of the development of NDMS is described, and a statement of the current status of the program is presented. The challenges confronting NDMS are described and addressed.

A. THE CONCEPT AND MISSION OF NDMS

The National Disaster Medical System is an organizational structure administered by the Federal government to provide emergency medical assistance to States following a catastrophic disaster or other major emergency. It is usually activated when the catastrophic disaster overwhelms both local and State resources. It is designed to supplement other resources and is oriented primarily to large scale disasters in which local medical care capabilities are severely strained or overwhelmed. NDMS has two primary missions:

(1) to supplement State and local medical resources during major domestic natural and man made catastrophic disasters and emergencies; and

(2) to provide backup medical support to the Department of Defense (DoD) and Department of Veterans Affairs (VA) medical systems in providing care for U.S. Armed Forces personnel who become casualties during overseas conventional conflicts.

Although NDMS is administered as a partnership, the Department of Health and Human Services is charged with overall direction of the program. This responsibility is delegated to the DHHS Office of Emergency Preparedness. This office maintains operational control of the program during periods when it is not activated and during peacetime activations Control of the program is transferred to the Department of Defense in wartime support situations.

In peacetime activations which generally consist of domestic natural or man made catastrophic disasters, NDMS has three objectives:

- 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;
- to evacuate patients who cannot be cared for in the affected area to designated locations elsewhere in the nation; and
- to provide hospitalization in Federal hospitals and a voluntary network of non-Federal acute care hospitals that have agreed to accept patients in the event of a national emergency.

To carry out these three objectives, NDMS has three sets of organizational resources

(1) Disaster Medical Assistance Teams and Medical Professionals from DHHS, VA and DoD. Disaster Medical Assistance Teams (DMATs) are voluntary medical manpower units organized and equipped to provide austere medical care in a disaster area or medical services at transfer points or reception sites associated with patient evacuation. Hospitals, volunteer agencies, or health and medical organizations sponsor DMATs and recruit interested medical and paramedical personnel to participate. DMATs are classified into four readiness levels, as follows:

- **Level One:** DMATs that are fully deployable with standardized equipment and supply sets, are self sustaining for up to 72 hours, and are capable and willing to meet the following mission assignments;
  - pre-hospital care,
  - ambulatory care,
  - in-patient care,
  - medical transportation,
  - patient disposition and evacuation,
  - patient administration and processing, and
  - collateral health and medical duties as required.
- **Level Two:** DMATs that are deployable with personnel and person-carried personal equipment and supplies. Primary mission is to augment on-ground Level One teams.

- o **Level Three:** DMATs that have local response capability only.
- o **Level Four:** DMATs with MOU executed in some stage of development but have no response capability.

An activated DMAT generally consists of 35 members, and a team roster may include over one hundred individuals to insure sufficient personnel on activation. Two or three DMATs may be combined to form emergency medical response units with larger treatment capabilities. Figure II-1 shows the location of current Level One DMATs.

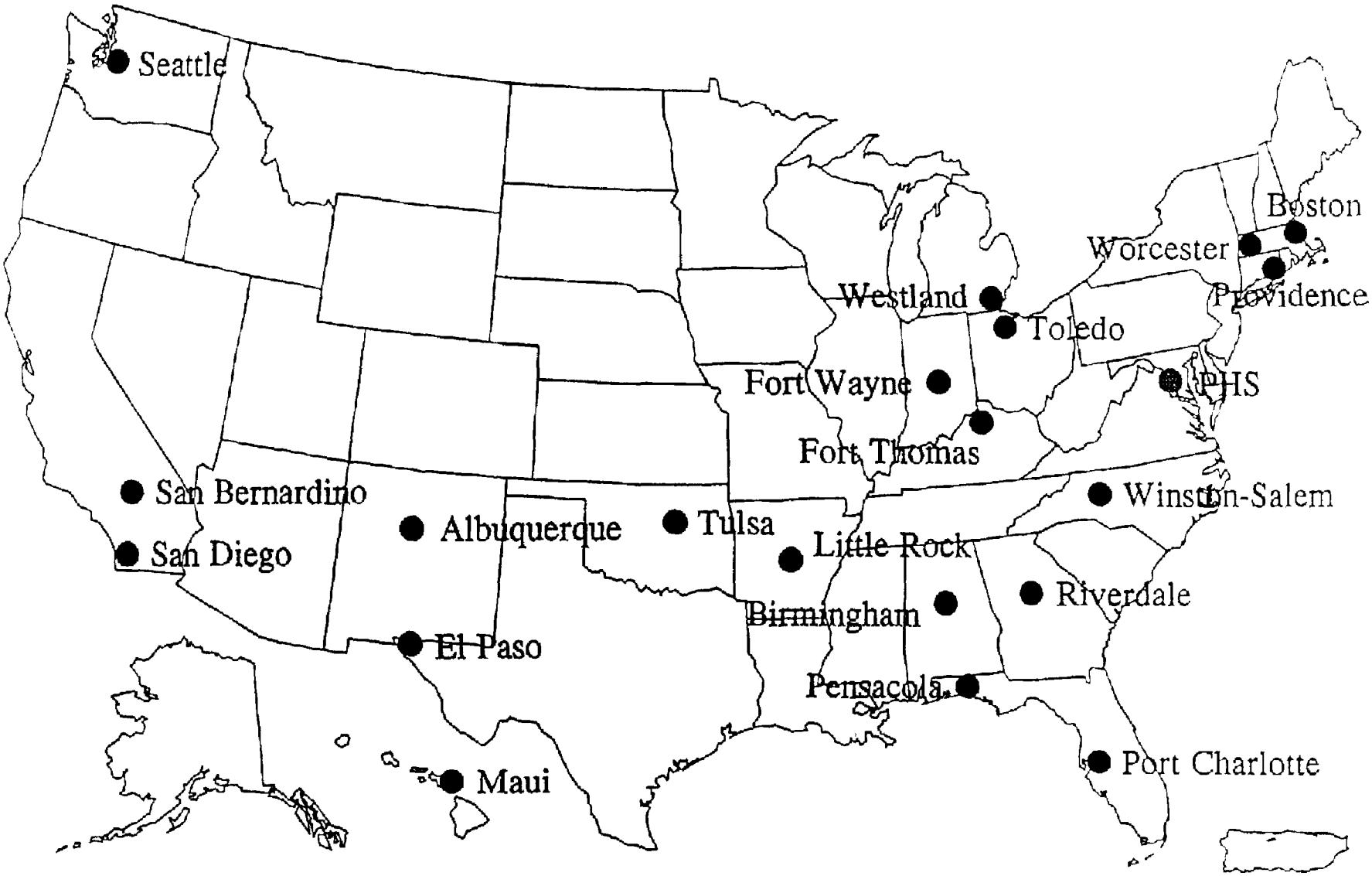
The Office of Emergency Preparedness administers the DMAT program by maintaining memoranda of agreement with sponsors for approved teams, rating readiness levels of teams, maintaining personnel files with the credentials of team members, monitoring and approving training, and supplying teams with certain articles of equipment. Upon activation of NDMS, the Office of Emergency Preparedness establishes an NDMS Operations Support Center which calls up and deploys DMATs, federalizes DMAT personnel for performance of medical tasks outside of their State of licensure, and maintains overall control of DMAT utilization. In the field, DMAT activities are supported and coordinated by Medical Support Units (MSUs). Besides general DMATs, specialized units have been formed for pediatric care, burn care, mental health, disposition of the deceased (Disaster Mortuary Services Teams - DMORTs), and assistance to Urban Search and Rescue units. In addition, field medical and related services are provided by Federal health professionals from DHHS, DoD and VA.

(2) Casualty Evacuation System. Movement of patients from disaster sites to locations where definitive medical care can be provided is administered through the Department of Defense. Casualty tracking is conducted by the Armed Services Medical Regulating Office (ASMRO), and the U.S. Air Force provides airlift through the Air Mobility Command which can be supplemented by civilian resources through the Civil Reserve Air Fleet (CRAF). Other types of transportation, such as specially outfitted AMTRAK trains, can be called into service through this system.

(3) Definitive Medical Care Network. NDMS has enrolled over 110,000 reserve beds in 1,818 participating civilian hospitals to receive casualties from disaster areas DoD and VA can provide additional beds, if required. These hospitals are located in 107 metropolitan areas. Maintaining this network is the responsibility of the Department of Defense and the Department of Veterans Affairs under the current concept of NDMS operations. This administration is performed through liaison offices, Federal Coordinating Centers (FCCs), in 72 DoD and VA facilities around the United States.

Exhibit II-1

READINESS LEVEL-I DMATs



Federal Coordinating Centers control patient distribution within their areas during catastrophic disaster casualty reception situations. Figure II-2 depicts the current FCC locations around the country.

The entire National Disaster Medical System or selected components can be activated in a number of ways. The Governor of a State can request assistance from the President who, in turn, can either declare a disaster or order activation of Federal assistance to that State. Currently, such activations are authorized under the Stafford Act of 1988 and administered through the Federal Response Plan of 1992 which is coordinated by the Federal Emergency Management Agency (FEMA). The Public Health Service Act also authorizes the Secretary of the Department of Health and Human Services to provide emergency medical assistance on request of State or local authorities, and NDMS is an authorized vehicle for such assistance. The Secretary of Defense can also activate NDMS in situations of national emergency. In practice, the Director of the Office of Emergency Preparedness would be the principal operating agent for NDMS in all of these cases.

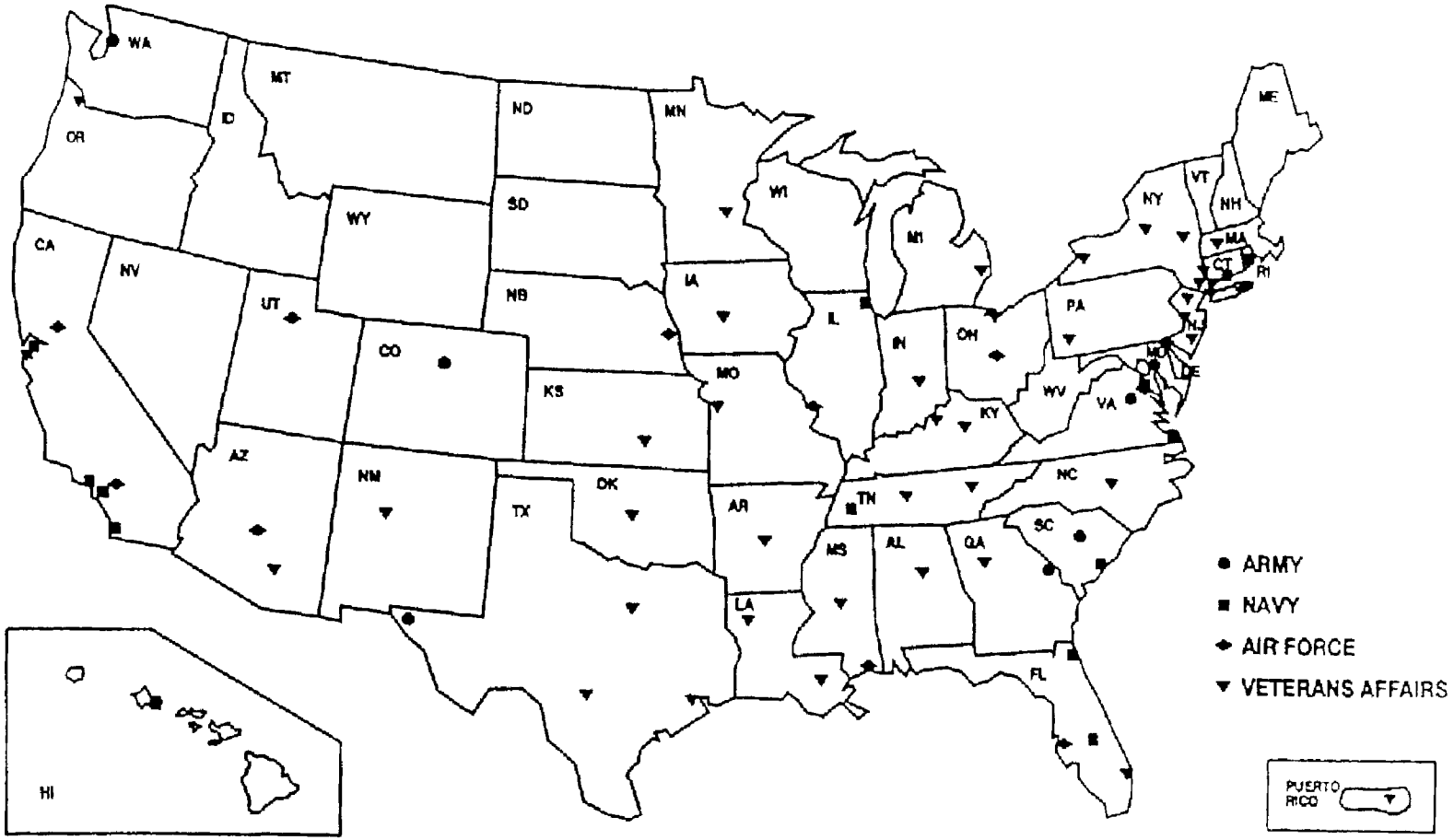
B. THE HISTORICAL DEVELOPMENT OF NDMS

The National Disaster Medical System is relatively young, having its immediate origins in developments since 1980. During this fourteen year period, NDMS has grown considerably. Changes within the Department of Health and Human Services and the concurrent development of the Federal government's overall catastrophic disaster response structure has had a major impact on the program. Along with these recent developments, NDMS still carries many of the traits it acquired in its beginning which reflect Federal policy for national emergencies dating back to the National Security Act of 1947. It has been only in the last five years that the system has been tested by activation in "real world" disasters. The most recent disasters have included team deployments during Hurricane Andrew (15 teams), Hurricane Iniki (seven teams), Hurricane Emily (one team), and the Northridge Earthquake (10 teams). A Management Support Unit (MSU) was activated at each of these disasters.

Exhibit II-2

NATIONAL DISASTER MEDICAL SYSTEM

Federal Coordinating Centers



Currently, the structure of NDMS is as much a product of incremental change and evolution as it is of design. The program also appears to be coming into a period of increased utilization with modifications introduced from results of lessons learned from recent disasters. In this section, that background is reviewed in terms of three historical phases that the program has gone through in the last fourteen years: the development of the basic idea for NDMS, the institutionalization of NDMS as part of the Federal catastrophic disaster response structure, and the confrontation with real world catastrophic disasters.

1. THE SOURCE AND ESTABLISHMENT OF THE NDMS PROGRAM

Although authority for the Secretary of the Department of Health and Human Services and its predecessor organizations to become involved with disaster medical services can be traced back to the National Security Act of 1947, the impetus for NDMS developed in the 1970s. The Disaster Relief Act of 1974 directed the Secretary of DHHS to provide medical response capability to catastrophic disasters. However, a specific program to carry out this responsibility did not begin until 1980. In that year, the Department of Defense initiated the Civilian Military Contingency Hospital System (CMCHS) through which civilian non-Federal hospitals were enlisted to provide reserve beds to treat American military casualties of overseas conflicts if military bed capacity in the United States proved inadequate. At the time, the Department of Defense was shifting some of its military medical capacity to contract sources. CMCHS began to recruit hospitals in 1981 but ran into resistance from interest groups concerned that our government was preparing for nuclear war, even though CMCHS was explicitly designed for non-nuclear, conventional conflicts.

At the same time, Federal medical planners became increasingly concerned that the nation did not have an organized program at the Federal level to deliver a medical response to catastrophic disasters. This concern led to a recommendation to establish a single national system which could provide backup support including medical services to DoD for military contingencies, and to assist State and local authorities overwhelmed in domestic disasters. In December 1981, the President established the Emergency Mobilization Preparedness Board with twelve working groups, one of which was the Principal Working Group on Health (PWGH). Over the next four years, the PWGH initiated actions that resulted in the

announcement of the formation of the National Disaster Medical System in 1984 and the operation of that system as a partnership among DHHS, DoD, VA and FEMA with the signing of an interagency memorandum in 1985.

The PWGH was dissolved in 1985, and in 1987 a new oversight structure was established which is essentially the one that exists today. DHHS was designated as the lead agency in the partnership. Policy and oversight was placed in the hands of an NDMS Senior Policy Group (SPG) made up of the Assistant Secretary for Health of DHHS, the Assistant Secretary of Defense for Health Affairs, the Under Secretary for Health of the Department of Veterans Affairs, and the Director of the Federal Emergency Management Agency. Operational policy was delegated to an NDMS Directorate composed of sub-Secretaries from each of the partner agencies. Operations management was further delegated to an NDMS Directorate Staff consisting of a representative from each agency's office most directly involved with emergency medical response to catastrophic disasters. The Director of the Office of Emergency Preparedness within the Department of Health and Human Services was designated as the Chair of the NDMS Directorate Staff.

By 1988, a series of Executive Orders and department directives authorized NDMS to operate much as it does, today. The program retains a commitment to the partnership concept, but responsibility for overall direction by DHHS has been increased by actions such as the shift in the Chair of the SPG from DoD to DHHS in 1992. This trend was reinforced by the initiation of an integrated Federal response system for catastrophic disasters in 1988 which clearly designated DHHS as the lead agency for health and medical support.

2. INTEGRATION OF NDMS WITH THE FEDERAL RESPONSE PLAN

In 1988, Congress passed and the President signed the Robert T. Stafford Disaster Relief and Assistance Act (Public Law 100-707) which essentially established the integrated Federal disaster response structure that we have, today. It consolidated a series of existing authorities for specialized disaster assistance into one "all hazards" response system. It placed overall direction for Federal disaster response in the hands of the Federal Emergency Management Agency. It firmly reinforced two principles of Federal disaster assistance

policy. First, the Federal role was to assist States and localities with catastrophic disaster response in situations where State and local capacity proves inadequate to handle the situation. Along with this, there is a charge to assist and otherwise insure that State and local preparedness is strengthened. Catastrophic disaster response, like public health, remains a State responsibility.

Second, Federal catastrophic disaster response is aimed at using existing resources, not creating new ones at the Federal level. Federal agencies with existing responsibilities for disaster related programs are "networked" under FEMA direction, rather than creating a new Federal disaster agency. DHHS was assigned responsibility to support FEMA for health, medical and health related human services. Some of these are within NDMS. These services are components of Emergency Support Function #8 of the Federal Response Plan.

Over the next four years, a Federal structure for implementing the Stafford Act was worked out, resulting in the publication of the Federal Response Plan (FRP) in 1992. Under the FRP, twelve Emergency Support Functions (ESFs) were identified with DHHS assigned lead responsibility for ESF #8; health, medical and related human services support. In the Federal Response Plan, sixteen medical support activities are associated with ESF #8, three of which are explicitly identified as NDMS responsibilities and three strongly associated with NDMS. In addition, NDMS partner agencies and other Federal offices are designated support agencies to DHHS in carrying out ESF #8 functions.

The Federal Response Plan also prescribes an organizational structure for Federal coordination and control of catastrophic disaster response situations. FEMA is the agency charged with overall direction of the system. Each agency that has lead responsibility for an ESF is represented on a series of coordination and control groups from the Federal level to on-site at the catastrophic disaster location. This structure is primarily concerned with expeditious routing and response to requests for assistance, and the management and control of Federal response units at all levels.

The National Disaster Medical System, as it currently exists, finds its authority under the Stafford Act/Federal Response Plan, through interagency agreements between partner agencies, and through a series of orders and directives issued on behalf on DHHS. There

are currently 62 Disaster Medical Assistance Teams at various stages of readiness, with approximately 21 rated Response Category One Teams. Over 4,100 individual volunteers are represented by these teams. DoD and VA operate 72 Federal Coordinating Centers, networking over 110,000 beds in 1,818 participating hospitals The U.S. Air Force is responsible for long range transportation for the NDMS system on an "on demand" basis. Most of the growth in the system has taken place in the last few years. For instance, just four years ago, there were only 500 registered volunteers in 10 active DMATs.

Part of this growth has been associated with experience in actual disasters. This experience, too, has primarily occurred in the last few years. This experience with real disaster situations has had a significant impact on the program and the formulation of this document and is briefly reviewed in the next section.

3. RECENT EXPERIENCE OF NDMS IN DISASTER RESPONSE

Since 1989, the National Disaster Medical System has been activated in response to six "real world" disasters that were large enough to activate the Federal Response Plan. It has also been alerted for possible activation in two other major disasters in this same period. There has also been a rise in the number of emergencies that have called for some Federal response in recent years, from 22 in 1988 to 63 in 1993. This experience has tested the concept and performance of NDMS and otherwise led to experience that has stimulated initiatives for improvement. In this section the experience of NDMS in its six major activations is reviewed.

3.1 Hurricane Hugo

Hurricane Hugo first hit the east Caribbean Islands on September 17, 1989. On September 18 the storm cut across the U.S. Virgin Islands (St. Thomas, St. Croix, and St John) with winds of up to 210 mph causing extensive damage before heading toward Puerto Rico and the South Carolina coast. Although there was some damage on the U.S. mainland, the major damage was in the Caribbean, especially on the U.S. possession of St Croix Hurricane Hugo represented the first activation and deployment of the National Disaster Medical System

Beginning on September 29, 1989, two DMATs from New Mexico were deployed on St. Croix to staff a temporary emergency room, clinic and inpatient care facility. These teams were airlifted to the island by the Air National Guard. An NDMS aeromedical evacuation system was established between the U S Virgin Islands and Tampa-St Petersburg, Florida An evacuation link was also established between St. Croix and San Juan, Puerto Rico The DMAT used equipment for a 106-bed field hospital supplied by the Alabama National Guard. This facility took over the burden of patient care from the St. Croix Hospital, which was inoperable after the storm During its week of deployment, the New Mexico DMATs treated 294 patients, admitted 38, and airlifted eight.

On October 7, the New Mexico DMATs were replaced by two teams from the U.S. Public Health Service in Rockville and Bethesda, Maryland. The Maryland DMATs were supplemented and eventually replaced by other treatment teams activated under a number of different programs. In addition to DMATs, the DHHS Office of Emergency Preparedness coordinated other medical assistance including the delivery and control of medical supplies and assistance in reestablishing sanitary and water systems. In addition, the Office of Emergency Preparedness established and operated its emergency command and control structure.

Besides being the first actual deployment of NDMS, Hurricane Hugo provided "lessons learned" which would be reinforced by further experience with disasters in the years to come. These included learning to work in an environment where the normal health services system is severely damaged, and assuming responsibility for many primary care functions that, although not a direct result of disaster injury, are left uncovered by the disruption in existing services. NDMS also gained first hand experience in coping with the complexities of coordinating service delivery with multiple agencies, maintaining communication in a catastrophic disaster environment, and providing transportation in a timely manner. In addition, the experience underlined the importance of locally-focused prior planning for catastrophic disaster response and recovery. In spite of many problems, however, Hurricane Hugo proved that NDMS was a viable tool for actual catastrophic disaster response

3.2 Hurricane Andrew

The most extensive test of the National Disaster Medical System to date came in August and September, 1992. Hurricane Andrew hit south Florida with vigorous force in the early morning hours of Monday, August 24. Winds were sustained at 145 miles per hour with gusts up to 175 miles per hour. This made Hurricane Andrew a Category IV Hurricane. NDMS had already been alerted to the possibility of a disaster, and on August 23, had established a temporary Emergency Operations Center in a hotel in Oklahoma City where most key NDMS personnel were attending an NDMS national conference. Also, the Office of Emergency Preparedness had dispatched an advanced element of its field command operations to Dade County and put several DMATs on alert. On the day the storm went through the area, Florida Emergency Medical Services asked for assistance, and two DMATs and a Management Support Unit (MSU) were activated. They arrived in South Florida on August 25, and were followed over the next week by several other DMATs. ESF#8 was responsible for providing medical care for 1.9 million people below Kendal Avenue due to the State of Florida's resources being overwhelmed. By the end of September, a total of 15 DMATs from eleven States were deployed to South Florida. These teams included nearly 600 temporarily Federalized volunteers and they provided primary health care, emergency medical services, mental health services and health and medical outreach to over 17,000 patients. Of those treated, only three deaths were reported.

Other elements of NDMS were activated in the Florida hurricane. Some casualties were flown out of the area, and DMATs were flown in and out by military airlift. In addition, other Emergency Support Function #8 activities were carried out in coordination with NDMS, such as vector control, sewage, public information, and water contamination control, and health surveillance.

Hurricane Andrew represented a major test of the Federal catastrophic disaster response system. The Federal Response Plan had just been published, and virtually every element in the Plan was put into operation in some way. All the partner agencies in NDMS; DHHS, DoD, VA and FEMA, played a role both on-site in South Florida and at the various levels of coordination including State, regional and national emergency operations centers. Health and medical care was provided through a joint command under the leadership of

DHHS with medical assets from the 44th Medical Brigade of the 82nd Airborne (DoD), VA mobile vans and hospitals, public health service personnel, and DMATs. A new innovation, the Medical Support Unit, was introduced to manage ESF#8 functions including NDMS.

Hurricane Andrew proved that NDMS could work well in a complex response situation that included coordination with a large number of national, regional, State and local organizations and programs. But it also underlined the need for continuing improvement in a number of areas. **Coordination** and **communication** between responding agencies and organizations at all levels from national to local were often strained. Federal assets could not be made available on as timely a basis as the situation often required. The Hurricane Andrew experience also demonstrated that NDMS must be able to provide routine medical care as well as emergency medical services.

Hurricane Andrew introduced the need for a complex, integrated recovery effort that requires coordination at the local, State, and Federal levels. The experience with Hurricane Andrew illustrated the complexity of the Federal response structure and the need for training, standardization, and clear guidance to States and localities to make the response system effective. It also showed that the entire response structure works better if local areas are prepared and response resources are available locally to handle much of the burden of directing the response effort immediately after the catastrophic disaster event. The need for prioritizing risk areas for development of response capabilities was strongly indicated.

The Office of Emergency Preparedness sponsored a major after action conference to help identify some of these "lessons learned" from Hurricane Andrew and identify areas where NDMS could be improved. Recommendations from this after action exercise contributed significantly to the development of this document.

3.3 Hurricane Iniki

On September 11, 1992, Hurricane Iniki passed over the islands of Kauai and Oahu with winds of 130 mph and more. The NDMS control system had already been activated and a Management Support Unit (MSU) had been dispatched to Hawaii. Between September 11 and October 2, when NDMS field operations were terminated, seven DMATs

were deployed and treated 1,552 patients In addition, DMATs participated in evacuation of casualties from Kauai to Oahu. The MSU coordinated the provision of a number of additional services such as back up pharmacy support and assessments of health and hygiene conditions including the acceptability of potable water supplies and environmental safety. DMATs also worked closely with deployed Armed Forces medical units, including relief of Air Force aeromedical personnel at Lihue Airport.

The NDMS capability deployed to Hawaii was coordinated with State disaster officials. Hawaii maintained firm control over recovery operations, so fewer NDMS acquired resources needed to be used than otherwise might have been the case, and those that were used were deployed effectively. However, there was some delay in providing transportation for DMATs and in the management of other resources.

The experience with Iniki showed the importance of strong local preparedness and control of operations. It also showed that NDMS resources, including DMATs, should have a degree of flexibility. Local preparedness, pre-positioning of medical resources as close to potential disaster sites as possible, training and standardization, and flexibility were all underscored as important from the Hurricane Iniki experience.

3.4 Midwest Floods

During the summer 1993, the Mississippi River carried a much higher volume of water than usual and produced significant flooding throughout the midwestern United States. The Federal Response Plan was activated in June and the Director of the Office of Emergency Preparedness at DHHS participated on a number of joint Federal, State, and local committees to respond to the floods in the states that were impacted. Under the Federal Response Plan, Disaster Field Offices (DFOs) were established in nine states with Emergency Support Function (ESF) #8 representation.

All partners to the National Disaster Medical System provided resources for the disaster response as part of the ESF #8 effort. These resources included military units and local VA assets. DHHS provided assistance for water contamination control, environmental health and vector control, sanitary engineering, preventive medicine, and mental health

services Related DHHS social services included assistance in caring for the aged, food and drug supplies, and other support for primary care A specialized Disaster Mortuary Team (DMORT) was activated to assist with problems caused by flooding in cemetery areas.

The experience in the Midwest Floods showed how catastrophic disasters can build and extend over time, as well as the importance of integrating response with recovery plans and activities.

3.5 Hurricane Emily

Almost exactly one year after Hurricane Andrew devastated South Florida, Hurricane Emily threatened the East Coast of the United States The President activated the Federal Response Plan on Sunday, August 29, 1993 and an Emergency Operations Center was established at Raleigh, North Carolina All NDMS partners alerted their locally based assets and DHHS dispatched an advanced party to North Carolina where the hurricane was expected to hit the Nags Head area VA mobilized emergency plans in its Richmond, North Carolina facility DHHS activated its North Carolina DMAT, and DoD supplied air support from Fort Bragg for DHHS to assess the impact area. NDMS also established a Medical Support Unit at Richmond.

Although the storm did touch the Nags Head area and produced considerable flooding, there was little major damage and no loss of life. However, Hurricane Emily illustrated the importance of Federal, State, and local cooperation as well as speed of response In addition, it showed the necessity for having locally positioned response assets and the significant role of NDMS in maintaining such assets.

3.6 Northridge Earthquake

On January 17, 1994 an earthquake occurred in Northridge outside the city of Los Angeles. The President declared a disaster and the FEMA activated the Federal Response Plan The Office of Emergency Preparedness initiated activities under Emergency Support Function #8 including the activation of elements of NDMS. On the day of the earthquake,

two DMATs in southern California were activated and deployed to assist emergency personnel handling the large number of people seeking emergency care at Northridge Hospital. An MSU was established and response elements of VA were activated. Two additional DMATs were flown to March Air Force Base to be ready if needed.

All partners in NDMS provided significant resources in the response to the Northridge earthquake. DHHS activated a total of ten DMATs and a Medical Support Unit (MSU). These teams provided medical services to 5,676 disaster victims including those identified in outreach activities. VA saw an additional 1,165 victims in its Mobile Health Clinics and 19,468 at Disaster Assistance Centers established at its fixed facilities.

The California earthquake illustrated how suddenly a disaster can arise. It also illustrated that many of the problems that have to be dealt with cannot be contended with immediately. Disaster response in events like these, trail off into the recovery period.

California is one of the stronger States in the nation in terms of local disaster preparedness. This quality was evident in the response. Nevertheless, lessons were learned that can improve the system. Most important was the concept that NDMS assets should be under the control of the State and that NDMS assets should, wherever possible, be pre-deployed.

3.7 Other Disasters

Since 1989 there have been two other major disasters for which NDMS was not formally activated. These include the Loma Prieta Earthquake in 1989 and Typhoon Omar in Guam in 1992. NDMS was alerted in both of these, but not formally activated. But all three illustrated areas where potential improvements of disaster response mechanisms are needed. Training, coordination and standardization are important areas. Locally focused preparedness is also crucial, not only for conserving national resources, but for providing fast and effective management of the response effort in potentially life threatening situations.

All of these experiences tested NDMS. They proved that NDMS is a valid concept and a useful disaster catastrophic response resource for the nation. However, they all pointed to areas where improvement could be made. All these experiences have figured significantly into the formation of goals and objectives for the Strategic Vision.

C. THE CURRENT STATUS OF NDMS AND THE CHALLENGE

The National Disaster Medical System currently stands somewhere between youth and maturity. After slightly over a decade of development, it is strong in its design and organization It has proven its effectiveness in several "real world" deployments. Yet, it also shows signs of needing refinement and further strengthening to realize its full potential The goal for the future is to renew NDMS so it can respond more rapidly and effectively to catastrophic disasters of a greater variety and frequency. This goal calls on NDMS to encourage State and local jurisdictions to develop plans and resources which can respond effectively in an emergency and at the same time be prepared to provide direct assistance when required.

The concept for NDMS was developed in the early 1980s and established as a program by 1985. At that time, it was seen as a self-contained system which could potentially meet the health and medical requirements of a catastrophic domestic disaster or military contingency by responding alone. It provided assistance in direct emergency medical care, long range transportation of casualties, and placement of those casualties in available hospital beds across the country. For a catastrophic disaster, other medical requirements were "secondary" to these three. Under Federal disaster philosophy, the role of NDMS was to back up States and localities. They had the primary responsibility for catastrophic disaster response. When required, NDMS could be activated to support the States and local governments. With the more proactive stance of the Clinton Administration, NDMS has been pre-deployed in advance of State requests.

The program was organized so that it could operate in concert with a number of other disaster response programs. But it could also operate as a separate entity if requested by the President, the Secretary of Defense, or the Secretary of the Department of Health and Human Services. It was not systematically dependent on other programs.

NDMS is also a highly interactive program. DHHS provided a "headquarters" home for the program and administrative support, but NDMS was organized and structured as an interagency partnership, created by interagency agreements and governed by a series of interagency committees. Functions of the program were parceled out to the partner agencies along with the responsibility of providing whatever funding support was required. Funding

requirements were originally considered to be minimal, since the program was largely based on networking "voluntary" private sector assets or those which already existed in the Federal government. The only funding for the overall program was a contributory pool established mainly to defray the cost of meetings among the partner agencies. NDMS was not a line item in a Federal department budget.

Although the NDMS program, in its basic structure, has remained largely the same, its operational environment has changed drastically in the last five years. With the passage of the Stafford Act and its implementation in the Federal Response Plan, NDMS became a component of a larger, and growing Federal response system. Although technically still independent, the use of NDMS became increasingly linked with the activation of at least part of the more complex structure orchestrated by the Federal Emergency Management Agency. If nothing else, this significantly increased administration and coordination problems for managing the program. The NDMS partnership addressed this situation when it strengthened the role of DHHS in running the program in 1992. Command and control needed to be more clearly delineated and consolidated in one agency. And that agency needed the systematic resources to develop DMATs, provide training, direct the program, and handle the increased demands on it.

The experience with real world catastrophic disasters since 1989 showed clearly the nature of those demands. When activated for a catastrophic disaster, NDMS does not operate in a vacuum. Catastrophic disasters demand unique organizational responses involving cooperative efforts of numerous public and private agencies and organizations at many different levels: local, State, Federal, and even international. The situation is inevitably complex, and any participating program needs to be solidly organized, funded, managed and singularly focused to operate effectively. In addition, its own resources must be reliably structured, and it must be able to expect similarly well organized response capabilities in the other organizations and entities with which it must act, and on which it depends, in a catastrophic disaster.

NDMS has experienced rapid growth in the last five years. In terms of numbers of DMAT volunteers, the program has had an eight-fold increase in that time. In addition, other demands have been placed on the Office of Emergency Preparedness, such as

involvement in emergencies other than the classic emergency response to catastrophic disasters, including recovery programs, health related social services, and international incidents. The relationship of NDMS to this wider sphere of emergency responsibility is only beginning to be addressed through the objectives of readiness, response, and recovery.

The old idea of health and medical response to disasters being a limited set of program activities aimed at the immediate aftermath of a discrete incident can no longer be taken for granted. Response activities cannot be fully separated from planning, mitigation and recovery. Medical assistance cannot be neatly separated from social and other human services required by victims in a disaster situation. Experience in Hurricane Andrew and the Midwest Floods illustrated this fact.

These factors have produced the current status of the National Disaster Medical System. They also point to the challenges now facing the program. It is these challenges to which the Strategic Vision is addressed.

Significant among these challenges are:

- NDMS receiving official recognition within DHHS and becoming a regularly funded program in the Department of Health and Human Services;
- NDMS achieving full funding for readiness and response requirements;
- NDMS stimulating better organization and planning for disaster response and recovery at the regional, State, and local levels;
- NDMS standardizing equipment and operating procedures for use in catastrophic disasters;
- NDMS developing a fully integrated and effective program of training and exercises,
- NDMS participating with other disaster response organizations to deliver a fully responsive and easy to access program of catastrophic disaster services;
- NDMS contributing to clarifying disaster program information and documentation;
- NDMS increasing the effectiveness of its component activities (DMATs, Federal health care capacity, evacuation and the hospital network) and their ability to operate in coordination with other responses; and

- NDMS strengthening its administrative and policy processes building on participation of partner agencies.

These are the challenges that currently face the National Disaster Medical System. The basic program concept and structure is solid. Yet experiences in catastrophic disaster response and changes in its organizational environment, as well as growth, have presented new concerns for NDMS which impact on its operations now and in the future. It is these concerns that stimulated the development of this document which focuses on the process of identifying, refining and implementing solutions.