

МІНІСТЕРСТВО ОБОРОНИ УКРАЇНИ
ГОЛОВНЕ ВІЙСЬКОВО-МЕДИЧНЕ УПРАВЛІННЯ
УКРАЇНСЬКА ВІЙСЬКОВО-МЕДИЧНА АКАДЕМІЯ

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U. S. A. National Disaster Medical System

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Disaster strikes anytime, anywhere. It takes many forms – a hurricane, an earthquake, a tornado, a flood, a fire or a hazardous spill, an act of nature or an act of terrorism. It builds over days or weeks, or hits suddenly, without warning. Every year, millions of people in whole world face disaster, and its terrifying consequences.

Emergency Situations of the natural or man-made origin are disrupted normal community function, destroyed the life securing structure and generated the large number of the victims. The providing of the Emergency Medical Aid for the large number of the victims in the Disaster area are sophisticated. There are inadequate remedy and medical equipment, inadequate number of the ambulance cars or well equipment vehicle for victims evacuation and inadequate hospital space.

The effects of each disaster are different. Considerations are given to the size of the area involved, the extent of damage, and the effect on community resources. The extent of damage includes the physical injury to persons and damage to property, especially destruction of infrastructure (roadways, bridges, and communication lines). The effects on community resources include the absence of electricity, gas, sanitation, and potable water; the necessity for portable shelters; and the potential for recurrence (eg, earthquakes with aftershocks). These problems are impossible to solve without adequate planning for emergency preparedness and managing. Adequate Emergency planning, managing and medical staffs training are the main task of the new branch of the medicine – Disaster Medicine. Today, the management of humanitarian assistance involves many more and different players, and disasters are recognized as public health priorities in which the health system plays a significant role.

Definition

Disaster Medicine is difficult to conceptualize. It is defined in several ways. The World Health Organization defines a disaster as a “ sudden ecological phenomenon of sufficient magnitude to require external assistance”. The American College of Emergency Physicians states a disaster has occurred “when the destructive effects of man-made forces overwhelm the ability of a given area or community to meet the demand for health care”, or next definition “A disaster is an event that destroys property, includes injury and/or loss life, and affects a large population or area.” Other definition exist, but the common denominator calls for a disruption of such magnitude that the organization, infrastructure, and resources of a community are unable to return to normal operations following the events without assistance.

There are three fundamental aspects of **disaster management**:

- Disaster response.
- Disaster preparedness.
- Disaster mitigation.

These three aspects of disaster management correspond to phase in the so-called “disaster cycle”(Figure1).

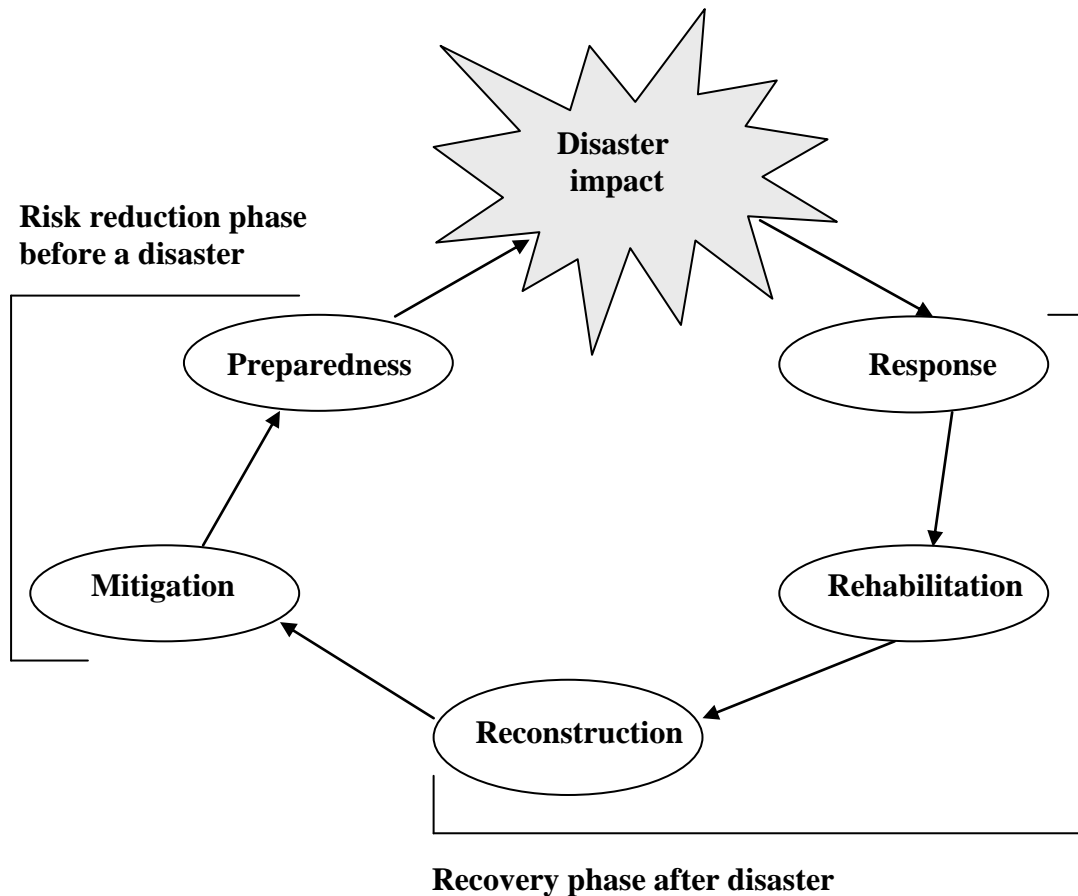


Figure 1. Disaster cycle.

Activities in the aftermath of disaster include response, rehabilitation, and reconstruction.

During the reconstruction phase, the coordination mechanism, project approval, and other decisions are taken in an environment that is much closer to the “normal” situation. Time is no longer the most important factor. The reconstruction period provides an opportunity to implement the health sector’s disaster mitigation programs and to initiate or reinforce disaster preparedness programs.

When a disaster strikes, the general population expects that public service agencies and other branches of the local, state, or federal government will rapidly mobilize to help the community.

A U.S. national emergency, whether from earthquakes, severe weather, industrial accidents, volcanic eruptions, terrorist attacks, or a conventional military conflict, can easily overwhelm the health care resources of any particular area of the nation. The possibility of such a mass casualty emergency in the United States, no matter how remote, requires a coordinated response of the nation's health care system. For this reason the government established the **National Disaster Medical System**.

The Federal Emergency Management Agency (FEMA) was created in 1979 as a means of consolidating a wide variety of disaster and emergency programs. Their initial focus was preparedness, mitigation, and recovery. In 1983 the President of the

United States declared, by executive order, the formation of the **National Disaster Medical System (NDMS)**. FEMA actions related to response would come in 1989. The federal agencies involved in NDMS include the Department of Defense (DoD), Department of Veterans Affairs (DVA), Department of Health and Human Services (DHHS), and Federal Emergency Management Agency .

NDMS was to have two functions:

- Create a system whereby civilian hospital beds could be used in the event of a disaster within the U.S. and create **Disaster Medical Assistance Teams (DMATs)** who could respond to those disasters.
- Representatives from the Department of Veterans Affairs (DVA), the Defense Department (DoD), the Health and Human Services Department (DHHS) and the Federal Emergency Management Agency (FEMA) were tasked with the implementation of this Executive Order with DHHS as the lead agency.

Representatives from each group participated in the development of the NDMS. NDMS was intended to supplement existing state and local capabilities, not replace them. Components included in the NDMS were medical response, patient evacuation, and definitive medical care. It is within the medical response component that the **DMATs** were created. **DMATs** were envisioned as being mobile deployable teams which, under federal auspices, manage large numbers of disaster casualties. The **DMATs** would be sponsored locally and become federalized assets during declared disasters.

The NDMS does not replace state and local disaster planning efforts, rather it supplements and assists where State and local medical resources are overwhelmed and Federal assistance is requested. The NDMS is operated as part of the **Federal Response Plan. Federal Response Plan** describes the policies, planning assumptions, concept of operations, response and recovery actions, and responsibility of 27 Federal department and agencies, including the American Red Cross, that guide Federal operations following Presidential declaration of a major disaster or emergency.

FEMA breaks down **ESF** (Emergency Support Functions) into seventeen (17) groups which manage and coordinate specific categories of assistance common to all disasters. Most states, including Florida, have adopted these same list of ESF's for consistency. Florida has added three ESF's for in state emergency mitigation. Each ESF is headed by a lead organization responsible for coordinating the delivery of goods and services to the disaster area, and is supported by numerous other organizations.

ESF#1 – TRANSPORTATION – Provides or obtains Transportation support - Department of Transportation.

ESF #2 - COMMUNICATIONS - Provides telecommunications, radio and satellite support - Department of Management Services.

ESF #3 - PUBLIC WORKS & ENGINEERING - Provides support in restoration of critical public services, roads and utilities - Department of Transportation.

ESF #4 – FIREFIGHTING - Supports detection and suppression of wildland , rural and urban fires - Department of Insurance, Office of State Fire Marshal.

ESF #5 - INFORMATION & PLANNING - Collects, analyzes and disseminates critical disaster information to State Emergency Response Team members - Department of Community Affairs.

ESF #6 - MASS CARE - Manages temporary sheltering, mass feedings and distribution of essential supplies for disaster victims - American Red Cross.

ESF #7 - RESOURCE SUPPORT - Provides logistical and resource support to other organizations through purchasing, contract, renting and leasing equipment and supplies - Department of Management Services.

ESF #8 - HEALTH & MEDICAL SERVICES - Provides Health, medical care and social services - Department of Health.

ESF #9 - URBAN SEARCH & RESCUE - Locates lost persons and victims trapped in collapses structures and provides immediate medical care - Department of Insurance.

ESF #10 - HAZARDOUS MATERIALS /ENVIRONMENTAL PROTECTION - Responds to actual or potential hazardous materials discharges and other situations threatening the environment - Department of Environmental Protection.

ESF #11 - FOOD and WATER - Secures bulk food, water and ice to support mass care sites - Department of Agriculture and Consumer Services.

ESF #12 - ENERGY - Supports response and recovery from shortages and disruptions in supply and delivery of energy resources - Department of Community Affairs, Public Service Commission.

ESF #13 - MILITARY SUPPORT - Provides military resources to support logistical, medical, transportation and security services - Department of Military Affairs.

ESF #14 - PUBLIC INFORMATION - Disseminates disaster related information to the public - Department of Community Affairs.

ESF #15 - VOLUNTEERS and DONATIONS - Coordinates utilization and distribution of donated goods and services - Department of Community Affairs, Florida Council of Community Volunteers.

ESF #16 - LAW ENFORCEMENT - Coordinates the mobilization of law enforcement and security services - Department of Law Enforcement.

ESF #17 - ANIMAL PROTECTION - Provides rescue, protective care, feeding and identification of animals separated from their owners - Department of Agriculture and Consumer Services.

ESF #18 - PUBLIC SAFETY.

ESF #19 - MUNICIPAL LIAISON.

ESF #20 - SOUTH FLORIDA WATER MANAGEMENT

Thus, the National Disaster Medical System (NDMS) is a joint effort of the Department of Health and Human Services, Department of Defense, Department of Veterans Affairs, Federal Emergency Management Agency, State and local governments, and the private sector, and it is a cooperative asset-sharing program among Federal government agencies, state and local governments, and the private businesses and civilian volunteers to ensure resources are available to provide medical services following a disaster that overwhelms the local health care resources. It is a **Federally coordinated system** that augments the Nation's emergency medical response capability. The overall purpose of the NDMS is to establish a single integrated National medical response capability for assisting State and local authorities in dealing with the medical and health effects of major peacetime disasters and providing support to the military and Veterans Health Administration medical systems in caring for casualties evacuated back to the U.S. from overseas armed conflicts. Circumstances for which NDMS may be activated include: 1) a military contingency or overseas conventional armed conflict involving US forces, 2) a presidential declaration of a disaster, 3) a request for major medical assistance. **Federal Coordinating Centers (FCCs)** recruit hospitals and maintain local non-

Federal hospital participation in the NDMS; assist in the recruitment, training, and support of DMATs; coordinate exercise development and emergency plans with participating hospitals and other local authorities in order to develop patient reception, transportation, and communication plans; and, during system activation, coordinate the reception and distribution of patients being evacuated to the area. Accredited hospitals, usually over 100 beds in size and located in large U.S. metropolitan areas, are encouraged to enter into a voluntary agreement with NDMS. Hospitals agree to commit a number of their acute care beds, subject to availability, for NDMS patients. Because this is a completely voluntary program, hospitals may, upon activation of the system, provide more or fewer beds than the number committed in the agreement. Hospitals that admit NDMS patients will be reimbursed by the Federal government.

The NDMS is designed to care for as many as 100,000 victims of any incident that exceeds the medical care capability of an affected State, region, or Federal health care system. It may be used in a variety of emergency events, such as earthquake, hurricane, industrial disaster, refugee influx, or for military casualties evacuated to the United States.

Major Components of NDMS include

1. Medical Response

The lead responsibility of Health and Human Services (HHS), medical response includes an assessment of health and medical needs, provides medical care personnel including health / medical equipment and supplies by deployment of **Disaster Medical Assistance Teams (DMAT)**. Other services include victim identification / mortuary services utilizing Disaster Mortuary teams (DMORT).

DMAT is a volunteer team organized under the National Disaster Medical System (NDMS) through the U.S. This is a group of professional and paraprofessional medical personnel (supported by a cadre of logistical and administrative staff) designed to provide emergency medical care during a disaster or other event. The medical team is designed to bring the Emergency Department out to the field. They carry all of the advanced life support equipment available in any state-of-the-art Emergency Department and operate under the direction of the National Disaster Medical System. Public Health Service (USPHS) to provide emergency medical care and to augment local medical capabilities during times of any disaster. The teams are typically composed of 36 - 120 medical professionals and support staff organized, trained and prepared to activate as a unit to provide medical and health care to disaster victims.

2. Patient Evacuation

The lead responsibility of the Department of Defense (DOD) which utilized all types of transportation and primary relies on aeromedical evacuation to accomplish this task. Other functions during the medical evacuation include patient reporting, regulating and movement from staging areas or casualty clearing points utilizing assets of the US Air Force and Civil Reserve Air Fleet (CRAF).

3. Definitive Medical Care

By concentrating on major metropolitan areas, which have available air access, an NDMS Federal Coordinating Center, hospital support and patient reception and distribution capabilities, patients are provided definitive medical care. Developed from the Civilian Military Contingency Hospital System, NDMS exists as a key role in coordinating a nationwide medical mutual aid network utilizing both public and private sector assets.

NDMS Lead Organizations are: U.S. Public Health Service; Department of Veteran Affairs; Federal Emergency Management Agency; Department of Defense

The NDMS is designed to provide:

- Medical Assistance to a disaster area in the form of Disaster Medical Assistance Teams, medical supplies and equipment.
- Patient Evacuation for those that cannot be cared for locally, to designated locations throughout the United States.
- Hospitalization in a network of medical care facilities that have agreed to accept patients. The NDMS currently includes 107 metropolitan areas of the nation.

NDMS Statistics

NDMS Coordinating Centers – 72.

Geographic Areas – 107.

Participating Hospitals – 1,818.

Precommitted beds – 110,605.

Individuals federally enrolled in **DMATs** – 5,000.

Information sources

1. Department of Defense: <http://www.defenselink.mil/>
2. Department of Veterans Affairs: <http://www.va.gov/>
3. Federal Emergency Management Agency (FEMA): <http://www.fema.gov/>
4. National Highway Traffic Safety Administration (NHTSA): <http://www.nhtsa.dot.gov/>
5. The Federal Response Plan: <http://www.fema.gov/home/fema/fed1.htm>
6. U.S. Department of Health and Human Services (OEP): <http://oep-ndms.dhhs.gov/>