

II. MEDICAL TEAM DEVELOPMENT

A.



FEMA US&R RESPONSE SYSTEM
TASK FORCE MEDICAL TEAM TRAINING
04/97

MEDICAL TEAM DEVELOPMENT

DISASTER BACKGROUND

■ Increasing National awareness

■ Disasters are NEWSMAKERS!

■ Predictions of MAJOR future

earthquakes.

■ Concern about hurricanes, tornadoes,

terrorist strikes & other collapsed-
structure events

■ Increasing public awareness of the

potentials for disaster response

VIEW GRAPH II A - 1

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A. DISASTER AND THE FEMA US&R RESPONSE SYSTEM
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DISASTER BACKGROUND (continued)

- Increasing public awareness of the potentials for disaster response.
- With the technologic revolution in communications, the news media is now bringing vivid attention to these tragedies into our homes. This close-up view of human misery, together with the in-depth descriptions and critiques of the rescue effort, has focused attention on optimal preparations for disaster response.

DEFINITIONS

- It is important to be sure that we are all talking the same language, so we should establish definitions of a:
 - Hazard
 - Disaster
 - Medical Disaster
 - Multi-Casualty Incident
 - Collapsed-Structure Disaster
- **Hazard**
 - "An event with potential to cause catastrophic damage."
 - Examples:
 - Naturally occurring: earthquakes, hurricanes, fires, droughts.
 - Man-made: war, terrorist strikes.
- **Disaster**
 - "Hazards that impact on human lives, causing adverse physical, social, economic or even political effects that exceed the ability to rapidly and effectively respond."

 - Examples:
 - Tornado striking an urban area.
 - The Exxon Valdez oil spill (may be a "property-

only" or "environment-only" disaster).

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DEFINITIONS (continued)

■ **Medical Disaster**

- "A disaster subset where physical and/or psychologic injuries exceed the medical response capabilities of the affected community"
- This may also be a major economic/property disaster."
- Examples:
 - Bhopal (India) toxic gas.
 - Armenian earthquake.

■ **Multi-Casualty Incident (MCI)**

- "An event requiring recruitment of additional resources to meet the response needs."
- This is a stepped-up local response or a response using nearby Mutual Aid resources.
- Example:
 - School bus accident.

■ **Collapsed-Structure Disaster**

- "A disaster involving compromised structures with known or suspected human entrapments."
- Examples:
 - Earthquakes, major train accidents, tornadoes, isolated structural failure, cave-ins, hurricanes, bombings, etc.

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INHERENT RESPONSE PROBLEMS

- The catastrophic disaster setting has many variables that impact on the responder: chaos, loss of all services, disruption of government/health-care, large number of injured and dead.
- Perhaps the most formidable type of disaster one could respond to is a collapsed-structure disaster (CSD), and since this is the topic of our course, we will review, in some detail, the hazards in and obstacles to effective response.
 - Sudden onset and effects.
 - Often unpredictable onset. Especially for earthquakes, tornadoes, flash floods and terrorist strikes.
 - Unpredictable results.
- Details and important variables (time of day, type of building construction, types of injuries, effect on medical care system, effect on transportation, communication, etc.) are usually unpredictable and must be determined post-event.
- Mitigation and preparation for response at the local government level is variable at best .
- May be no or poorly functioning local disaster management center and structure. Hopefully this is improving as planners nationally become more educated and committed to this necessity, and as ICS and other management tools become more widespread.
- Ability to rapidly respond is affected. Loss of transportation and communications systems, utilities, etc. negatively impact on response services.
- Presumed loss of any possible local support function at the disaster scene: power sources, telephones, shelter, food, potable water.
- Hazardous materials, further structural collapse (esp. with earthquake aftershocks), gas leaks and other explosive hazards, etc. all must be considered.

- Inadequate local medical system.

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MEDICAL RESPONSE OBSTACLES

- Loss of Basic Services.
- Medical System Chaos.
- Examples:
 - Presumed lack of surviving or un-overwhelmed medical backup for the response teams.
 - Possible medical chaos at the site.
 - Expected severe critical incident stress in survivors and rescuers.
- Non-selective victim process.
- Victims may be young infants, very elderly, prior severe medical problems, etc.
- Inherent delay in treatment.
- Unusual medical problems.
- "Race Against Time."
- Medical care must be prompt if effective response is to occur.
- High risks for rescue personnel.

RISKS TO US&R RESPONSE PERSONNEL

- Long hours/intense physical work.
 - Austere living conditions.
 - Potential hazmat exposures.
 - Risk of secondary collapse.
-
- Other dangers (methane, explosions, accidents, etc.)

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■ Obstacles

- Loss of basic services
- Medical system chaos
- Non-selective victim process
- Inherent delay in treatment
- Unusual medical problems
- "Race against time"
- High risks for rescue personnel

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■ Risks...

- Psychological stress during the response.

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A. DISASTER AND THE FEMA US&R RESPONSE SYSTEM (continued)

BRIEF HISTORY OF UNITED STATES US&R

- US&R has a relatively short (1980's to present) history:
 - 1985: Mexico City earthquake (OFDA response).
 - 1986: El Salvador earthquake (OFDA response).
 - 1988: Armenian earthquake (OFDA response).
 - 1989: Charleston, SC hurricane (FEMA response).
 - 1989: Loma Prieta, CA earthquake (CAL OES/FEMA)
 - 1990: Philippines earthquake (OFDA response).
 - 1991: Hurricane Andrew, Hurricane Iniki (FEMA).
 - 1991- 96: Other hurricane deployments (FEMA).
 - 1993: World Trade Center Bombing (New York City).
 - 1994: Northridge Earthquake (FEMA/State/Local).
 - 1995: Oklahoma City Bombing (FEMA/Local).

- Multiple isolated structural collapses:
 - Kansas City Hyatt Skywalk.
 - Brownsville, TX department store.
 - Bridgeport, Conn. construction site.
 - New York City building collapse, etc.
 - Puerto Rico gas explosion.

- Through these and many less infamous events nationally, the need for a specialized response was clearly identified and considerable experience was gained in testing response capabilities.

REQUIREMENTS FOR AN EFFECTIVE US&R RESPONSE

- Assumptions (or recognized "Realities") upon which the systems must be based:
 - Must be rapidly deployable .
 - Incidence of rescuing live survivors drops of rapidly - "Golden Twenty-four to Forty-eight Hours."
 - Response teams must be self-supporting. This is to optimize their effectiveness and to minimize their drain on the local surviving resources and on relief supplies delivered to the disaster - power sources, tent shelter, etc.

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REQUIREMENTS FOR AN EFFECTIVE US&R RESPONSE **(continued)**

- The issues of basic task force support (food, water, power, tents, etc. have been addressed in the FEMA development process.
- The task force must also be medically "self-sufficient".
- Local medical system may be compromised/overwhelmed and so unable to provide adequate support.
- This medical self-sufficiency is vitally important because disaster response, esp. that involving confined space rescue, is inherently risky and yet done primarily by volunteers.
- Sophisticated medical back-up is therefore essential.
- FEMA, DoD, OFDA and other federal agencies involved in developing US&R Capabilities "signed-off" early on the concept of providing this back-up.
- Must be integrated into the existing disaster management structure.
- This is important for safety, effectiveness, politics, patient care and evacuation, etc.
- Integration is also important for obtaining vital logistical support, especially transportation.
- Importance of being prepared: medically, protective gear, survival ability.
- Assume that you will be completely isolated - "compartmentalized disaster" - as reported in SF earthquake, where sources noted 1 city block away medical personnel were standing around but no care was available where it was needed.

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A. DISASTER AND THE FEMA US&R RESPONSE SYSTEM (continued)

URBAN SEARCH & RESCUE - GENERAL DEFINITION

- "The science of responding, locating, reaching, medically treating and safely extricating victims entrapped by collapsed structures.

US&R - MEDICAL GOAL

- "To recover a live patient in a manner that maximizes odds of full recovery to his/her pre-entrapment status."

RESPONSE "REALITIES"

- Limitations on response resources:
 - Financial: who's paying for it?
 - Logistics: size and payload limits of the plane; numbers and abilities of support personnel and equipment; safety; etc.
 - Personnel: number, qualified?, type, availability.
 - Politics: bringing an outside unit into a stressed locale.
- These limitations have helped shape the response system development.
- With all of this as a background, FEMA became involved in the US&R field.

FEMA US&R HISTORY

- Development history:
 - Pre 1989... Mitigation and Recovery Resource, NOT Response.
 - FEMA traditionally was a mitigation and recovery resource, not a response resource.
 - 1989... Hurricane Hugo and Loma Prieta Earthquake increased pressure for them to change Congressional/ Presidential mandate to develop a

- response capability.
1990... Development process began.

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FEMA US&R HISTORY (continued)

- FEMA US&R Development
 - 1/90 General planning meeting in Seattle.
 - Invitations were extended to individuals and organizations with nationally recognized expertise in collapsed-structure and related response.
 - 5/90 Advisory Group meeting to set up Work Groups.
 - Work Groups were developed for each component of the task force.
 - 7/90 Work Group meetings started.
 - 12/90 Work Groups finalized products.
 - 1/91 US&R Task Force System Description was published by FEMA.
 - 5/91 Task Force applications were solicited.
 - 8/91 Technical Review Committee meeting.
 - This committee evaluated the applications from the sponsoring organizations.
 - 9/91 Grants announced to selected Task Forces.
 - 4/92 Operation System Description and Mission Operational Procedures finished.
 - 7/92 Training developed.
 - 92 - Present Implementation of training and mobilization/field exercises.
 - This review points out the "infancy" of the system and the accomplishment of designing and implementing such a comprehensive system in such a short time.
 - This was done by a national consensus of "operational level" experts, and the system will continue to evolve.
-
- Medical aspect continues to be developed through the Medical Working Group.

- Input from each task force Medical Team through the Medical Review Group.

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TASK FORCE OVERVIEW

- 62 member unit designed to arrive quickly and to safely and effectively perform US&R as defined earlier.
- The science of responding, locating, reaching, medically treating and safely extricating victims entrapped by collapsed structures.
- Capabilities:
 - 24-hour operation.
 - Multiple disciplines:
 - management.
 - search (technical and canine).
 - rescue.
 - medical.
 - technical.
- Organized under the Incident Management System.
- Mission: to assist the local population.
- Management
 - Role includes interacting with the local government (through Incident Manager), defining the needs to be met by the task force, planning the response, coordinating the task force teams, assuring logistical support.
- Search
 - Comprised of specially trained canines (detect humans by air scent) and their handlers; and also technical search capabilities (acoustic devices, remote cameras, fiberoptic scopes, etc.)
- Rescue
 - Comprised of personnel trained and equipped to penetrate heavy debris to reach and extricate trapped victims.

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■ 62-member unit

■ Designed to arrive quickly

and to safely

■ Multi-disciplinary:

- Management

■ Can effectively perform urban

search and rescue operations.

• Medical

• Technical

■ Organized under the Incident

Management System

■ Mission: To assist the local

population

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A. DISASTER AND THE FEMA US&R RESPONSE SYSTEM

TASK FORCE OVERVIEW (continued)

- Medical
 - Provides medical support to both the task force personnel and the victims.
 - Will be covered in great detail during the remainder of the course.

- Technical
 - Comprised of experts trained and equipped to provide expertise in:
 - structural safety.
 - communications.
 - heavy equipment and rigging.
 - hazardous materials.
 - logistics.
 - technical information.

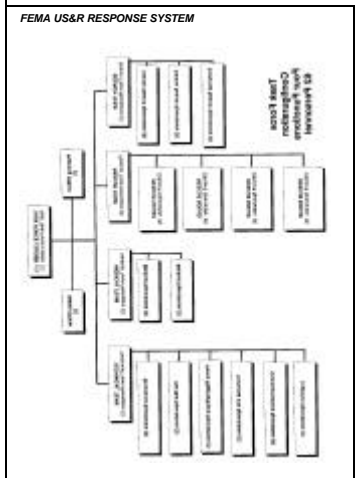
- Safety
 - To oversee safety aspects of all task force activities (i.e., in transit, Base of Ops, worksites, demob).

- Organizational structure of the task force.
 - Just as the task force integrates with on-scene managers and other responders through the ICS, the task force is also organized and operates under the ICS structure.

- Standard Operating Procedures.
 - Many of these have been developed for the task force response, including briefings, logistics support, etc. - refer to system description and operating procedures and general task force orientation.

SUMMARY OF TASK FORCE DEVELOPMENT

- The achieved objective was to provide sophisticated capabilities for each component of the TF. This same objective was applied in the development of the medical component. We have been fortunate in the development process thus far because the cost and logistical impediments have been



more manageable than those for other disaster medical developmental efforts:

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SUMMARY OF TASK FORCE DEVELOPMENT (continued)

- The cost, while significant, is small compared to that of the search (\$20K for one acoustic device) and rescue (power tools, etc.) components.
- Logistics (transportation, moving the large cache, power supply, housing, food, etc.) have developed by nonmedical groups familiar with the tasks.
- The process started with a strong sense of what was needed, based on past responses (mines, collapsed buildings, OFDA earthquake experiences, other tactical responses, etc.)
- The risk to the volunteers rescuers was recognized as very high, so the strong and sincere commitment was made ("by the powers that be") to provide responders with the best possible medical back-up.

MEDICAL TEAM OVERVIEW

- Medical Team's mission:
 - Care for task force personnel.
 - Care for victims.

MEDICAL TEAM COMPOSITION

- Six-person team:
 - two Medical Team Managers.
 - four Medical Team Specialists.
- Personnel:
 - Medical Team Managers: Emergency Medical Physicians with pre-hospital experience.
 - Medical Team Specialists: Experienced paramedics or equivalent.

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PRIORITIES OF THE MEDICAL TEAM

- First priority:
 - Task force personnel (including support personnel and canines).
 - "Take care of your own" - Sounds self-serving but is vitally important; it is to the credit of the federal and state programs involved in US&R development that they signed on early to the concept of caring as well as possible for the volunteers who perhaps have the riskiest roles in collapsed structure response.
 - This includes other on-scene rescuers and support personnel and search team canines - two lectures devoted to these subjects later in the course.

- Second priority:
 - Victims directly encountered by the task force.
 - This is the focus of the skill stations and patient-care scenarios in this course.

- Third priority:
 - Other victims as indicated.
 - This objective cannot interfere with first and second priorities (i.e. It is important not to become a free-standing medical resource/ ambulatory care center - this would interfere with primary functions).

MEDICAL TEAM OBJECTIVES

- To provide a wide range of medical care, including medical/trauma/pediatrics.

- Medical care for task force and victims (adults and peds, wide range of expected medical and trauma problems, sophisticated care for complicated medical conditions).

- We do not expect to be providing "Golden hour" trauma management except in the case of a task force member being critically injured.

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■ To provide wide range of medical care

• Medical

• Trauma

• Pediatric

■ To provide basic canine

veterinary care

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■ Task force personnel

• support personnel

• canines

- To provide basic canine veterinary care.

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II. MEDICAL TEAM DEVELOPMENT

A. DISASTER AND THE FEMA US&R RESPONSE SYSTEM (continued)

MEDICAL TEAM STRUCTURE AND FUNCTION

- Doctors and paramedics — Mode of operation:
 - "Medical control M.D./Paramedic" model
 - Mutual respect.

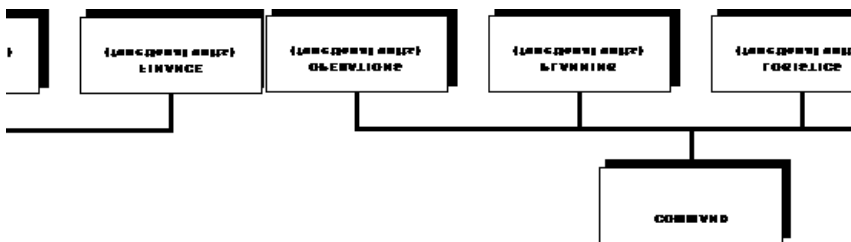
- This means maintaining a collegial atmosphere and close interaction between the physicians and paramedics, utilizing the strengths of each group — avoiding the stereotypical relationship in between medics and EMS physicians.

INCIDENT MANAGEMENT SYSTEM - "ICS"

- Allows effective management of many response organizations.

- This has become the accepted way "to do business" throughout the emergency response community. The Incident Command System (ICS) name is often replaced by Incident Management System (IMS).

- Incident Management System components:
 - ICS is a system designed to allow effective management of many and varied response entities. It has essentially five major components:
 - Command.
 - Operations.
 - Planning.
 - Logistics/Support.
 - Finance.



■ Doctors and paramedics:
• "Medical control M.D./Paramedic" model
■ MUTUAL respect

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TASK FORCE ORGANIZATIONAL CHART

- Interactions on the task force are organized along the same Incident Command or Management System guidelines.

- The Medical Team "fits into" the ICS model by filling three primary roles:
 - Logistics/support: the medical care for task force and other response personnel.
 - Operational: the medical care for rescued and other victims.
 - Plans: providing input to optimize the Medical Team's support and operational functions.

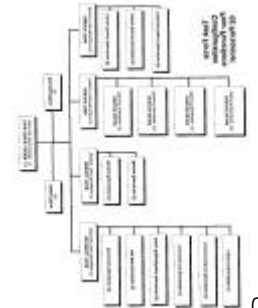
- Expectations of the Medical Team (as part of the system):
 - Logistical support.
 - Technical support.
 - Relevant information.

CAPABILITIES OF THE MEDICAL TEAM CACHE

- Sophisticated care over the full range of medical problems.

- Equipped and trained to provide quality medical care equivalent to that practiced in the Emergency Department.

- 24-hour operations:
 - Start operations at initial mobilization site, end when return to final demobilization site.
 - Ready to provide immediate care at ALL times
 - Adequate cache for: 10 critical, 15 moderate, 25 minor patients.
 - Then revert to "best care under the circumstances."
 - To do this requires an extensive cache.



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SUMMARY OF MEDICAL CARE CONCEPT

- Quality Medical Care in an austere environment, not "austere medical care."

- Limitations:
 - Many of the factors related to everyday EMS.
 - Limited equip./supplies for hazmat care.
 - Lack of Hospital-based back-up.

SUMMARY

- A "disaster" by definition is beyond regular management by available resources. The objective in designing components of a disaster response is not to try to manage everything (impossible) but to attain a pre-set target for your response resource. For the FEMA Medical Teams, the target is to essentially be an island of medical excellence within a potential sea of medical chaos.

■ Limitations...

• Limited equipment and supplies
for haz mat patients

• Lack of hospital-based back up

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION

INTRODUCTION

- This section reviews the information necessary to understand and organize a Medical Team.

FEDERAL RESPONSE PLAN

- General information:
 - Federal plan to be used in providing all federal aid in a declared disaster in the U.S.
 - FEMA is the federal agency "in charge" of the plan and its execution.

- Emergency Support Functions (ESFS):
 - This structure groups federal resources by disaster response function.
 - Each ESF has a designated "lead" (or primary) agency and multiple supporting agencies.
 - Functions designed to supplement, not supplant, local resources.

- Emergency Support Functions (ESFS)
 - ESF-1 Transportation
 - ESF-2 Communication
 - ESF-3 Public Works and Engineering
 - ESF-4 Firefighting
 - ESF-5 Information and Planning
 - ESF-6 Mass Care
 - ESF-7 Resource Support
 - ESF-8 Health and Medical Support
 - ESF-9 Urban Search and Rescue
 - ESF-10 Hazardous Materials
 - ESF-11 Food
 - ESF-12 Energy

- The two that concern the Medical Team are ESF-8 and ESF-9.

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION (continued)

"PRIORITY ESFs"

- Four ESFs considered top priority in a disaster:
 - ESF-4 Fire Suppression
 - ESF-8 Health and Medical
 - ESF-9 Urban Search and Rescue
 - ESF-10 Hazmat Control

 - ESF-9 — Urban Search and Rescue.
 - FEMA and other agencies - lead.
 - Department of Defense - support.

 - DOD Role.
 - Transportation.

 - FEMA role.
 - Historically, US&R System developed in response to the DoD lack of heavy US&R capability.
 - Other agencies - support FEMA.

 - ESF-8 — Medical.
 - US Public Health Service is lead agency.
 - Many other agencies provide support.

 - ESF-8 Scope.
 - Assessment of health/medical needs.
 - Health surveillance.
 - Medical care personnel.
 - Health/medical equipment and supplies.
 - Patient evacuation.
 - In-hospital care.
 - Food/drug/medical device safety.
 - Worker health/safety.
 - Radiologic/chemical/biologic hazards.
 - Mental health.
 - Public health information.
 - Vector control.
-
- Potable water / waste water and solid waste disposal.
 - Victim identification/mortuary services.

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■ ESF-9 — Urban Search & Rescue	
■ FEMA role	
• US&R Response System	
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• Support FEMA	
■ ESF-8 — Health & Medical Support	
■ Scope:	
• Assessment of health/medical needs	
• Health surveillance	
• Medical Care Personnel	
• Health/medical equipment/supplies	
• Patient evacuation	
• In-hospital care	
• Food/drug/medical device safety	
• Worker health/safety	

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION (continued)

NATIONAL DISASTER MEDICAL SYSTEM (NDMS)

- Designed to provide much of the support required by the Scope of ESF-8.
- NDMS — A "Nationwide mutual aid system" for:
 - Disaster Medical Assistance Teams (DMATs): Care on-site.
 - Patient evacuation system.
 - Definitive (in-hospital) medical care.
- Traditional DMAT concept.
 - Disaster site clearing and staging.
 - Airport reception.
- Specialized DMATs.
 - Ability to provide advanced and specialized care to victims within the disaster area.
 - Precludes necessity of long distance evacuation.
 - Provides critical medical care as soon as possible.
- Specialized DMATs.
 - Burn.
 - Confined-space.
 - Critical care.
 - Dialysis.
 - Hazmat decontamination.
 - Mental health.
 - Mortuary.
 - Pediatric.
 - Trauma.

NDMS EVENTUAL GOAL

- Goal of ESF-8 through NDMS is to have the ability to provide reasonably advanced medical care quickly (beginning at the time victims are located/ entrapped and to have the ability to provide a continuum of sophisticated medical care through the transport phase until the definitive care is completed.

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■ DISASTER MEDICAL ASSISTANCE

TEAMS (DMATS)

■ Specialities:

- Burn
- Confined-space
- Critical care
- Dialysis
- Hazmat Decontamination Teams
- Mental Health
- Mortuary
- Pediatric

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B. MEDICAL TEAM ORGANIZATION (continued)

DMAT PERSONNEL

- Upon federalization, members have federal coverage for:
 - Licensure/certification under authority of the US Public Health Service (so they may cross state lines to practice) .
 - Liability coverage under the Federal Tort Claims Act.
 - Workmen Compensation coverage as a federal employee.
 - Compensation for deployed response as task force members.
- FEMA US&R medical teams are special DMATs.
 - On "permanent loan" from ESF-8 to ESF-9.
 - Upon deployment, the team becomes federalized under FEMA and NDMS (USPHS).
 - USPHS oversees the adequacy and quality of the medical component: the qualifications and medical training of the personnel come under their jurisdiction.
- Licensure and liability issues are addressed as for all DMATs. The medical team responds as an integral part of the FEMA US&R task force.
- FEMA is responsible for US&R and survival training/preparedness.

NDMS ENROLLMENT - REQUIRED STEPS

- Memorandum of Understanding (MOU) with NDMS by Task Force Sponsoring Agency.
- Complete:
 - NDMS Enrollment (Form SF-171).
 - NDMS Oath of Office (Form SF-61).
 - NDMS Declaration of Appointment (Form SF-61-B).
 - Appointment Affidavits.
 - NDMS Volunteer Agreement.
 - Selective Service Declaration.
 - Obtain NDMS Identification Card.

 ■ "Special DMATs"...

 ■ On permanent loan from

ESF-8 to ESF-9

 ■ Medical qualifications and

 medical training under
 US Public Health Service

 ■ Urban Search & Rescue

 preparedness training under
 FEMA

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B. MEDICAL TEAM ORGANIZATION (continued)

NDMS ENROLLMENT - REQUIRED STEPS (continued)

- NDMS benefits:
 - Licensure/certification.
 - Liability coverage when acting within "Scope of Practice."

- Scope of practice.
 - Federal Disaster Declaration: Medical Team members are USPHS employees so scope of practice is within that which they are adequately trained and certified within the home jurisdiction - The doctors/medical director have a major role in training/certifying medics.

- Non-Federal Disaster
 - Response other than as fed. disaster: Scope of practice is within the jurisdiction in which Medical Team is responding ("Receiving EMS Jurisdiction").

REQUIREMENTS FOR AN EFFECTIVE US&R AND CSM RESPONSE

- Assumptions (or recognized "realities") upon which the systems must be based:
 - Must be rapidly deployable.
 - Incidence of rescuing live survivors drops of rapidly - "Golden Twenty-four to Forty-eight Hours"
 - Response teams must be self-supporting:
 - To optimize their effectiveness/minimize their drain on the local surviving resources and on relief supplies delivered to the disaster.
 - Must be medically "self-sufficient":
 - Local medical system may be compromised/overwhelmed and so unable to provide adequate support.
 - Relatively sophisticated medical capability.

Error! FEMA US&R RESPONSE SYSTEM

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■ US&R medical response requirements...

- Rapidly deployable
- Self-supporting
- Relatively sophisticated capability

Integrated into the disaster response structure

• Prepared:

- medical equipment
- protective capability
- survival ability

Error!

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B. MEDICAL TEAM ORGANIZATION (continued)

REQUIREMENTS FOR AN EFFECTIVE US&R AND CSM RESPONSE (continued)

- Disaster response, especially that involving confined space rescue, is inherently risky and yet done primarily by volunteers. Sophisticated medical back-up is therefore essential. FEMA, OFDA and other federal agencies involved in developing US&R capabilities "signed-off" early on the concept of providing this back-up.
 - Must be integrated into the existing disaster management structure (probably one of the primary obstacles to effective disaster medical care in the past).
 - Importance of this - safety, effectiveness, politics, patient care and evacuation, etc.

- Preparedness:
 - Medical equipment.
 - Protective capability.

COMPARTMENTALIZATION

- Assume that you will be completely isolated - "compartmentalized disaster" - as reported in SF earthquake, where sources noted one city block away medical personnel were standing around but no care not delivered where it was needed.

TASK FORCE CAPABILITIES

- Capabilities of task force:
 - 24-hour operation.
 - Multiple disciplines.
 - Organized under the ICS.
 - Mission — to assist the local rescue effort.

- The objective is to provide sophisticated capabilities by each component of the task force, including the Medical Team.

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TASK FORCE MEDICAL TEAM TRAINING 04/97
■ Capabilities... <ul style="list-style-type: none">• 24-hour operation• Multi-disciplinary• Organized under the
Incident Management System
■ Mission: <ul style="list-style-type: none">• To assist the local population• Provide sophisticated capabilities

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION (continued)

TASK FORCE CAPABILITIES (continued)

- The cost/logistical impediments have been more manageable than those for other disaster medical developmental efforts:
 - The cost, while significant, is small compared to that of the search and rescue components.
 - Logistics (transportation, moving the large cache, power supply, housing, food, etc.) were developed by nonmedical groups familiar with the tasks.
 - The program started with a strong sense of what was needed, based on past responses (earthquake experiences, terrorist activities, hurricanes, etc.)
 - The risk to the volunteers rescuers was recognized as very high, so the strong and sincere commitment was made (FEMA) to provide task force members with the best possible medical back-up.

TASK FORCE MEDICAL TEAM

- Mission:
 - Care for task force personnel.
 - Care for victims.
- Medical team personnel:
 - Medical Team personnel (3:1 back-up:response ratio)
 - Medical Team Managers (2 response, 6 total)
- Emergency physicians:
 - Residency-trained and/or board certified.
 - Actively practicing emergency medicine.
 - Significant experience with pre-hospital medical care or,
 - Current ACLS, ATLS and PALS (or equivalent).
 - Practicing emergency med/pre-hospital medical care.
- Medical Specialists (4 response, 12 total):
 - Paramedic (or equivalent) meeting National Registry of EMT-Paramedic standards.
 - Actively practicing pre-hospital care or,
 - Registered nurse with approved pre-hospital certification.

- Actively practicing pre-hospital care.

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION (continued)

MEDICAL TEAM FUNCTION

- Medical Control MD/Paramedic model.
- Mutual respect.
- No "national" protocols.
- Protocols/Standing Orders to be developed by individual Medical Team based on local system and laws.

MEDICAL DIRECTOR POSITION/RESPONSIBILITY

- Medical Director:
 - Organizational/development position.
 - Not a response position on deployed task force.
 - Assisted by the Medical Team Coordinator.
- Organizes the Medical Team.
- Organizes the medical cache.
- Ensures personnel meet/maintain requirements
- Determines Team protocols, scope of practice of medics, and other medical practice issues.
- Ensures participation in drills/exercises.
- Ensures demobilization and post-mission activities are performed.

MEDICAL TEAM CACHE

- Medical Team Capabilities:
 - Equipped to provide quality medical care equivalent to that practiced in the Emergency Department.
 - Numbers: 10 critical, 15 moderate, 25 minor, then revert to "best care under the circumstances." To do this

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TASK FORCE MEDICAL TEAM TRAINING 04/97

■ Function...
• Doctors and paramedics: <ul style="list-style-type: none">- "Medical control MD/Paramedic" model
• MUTUAL respect
• No "national" protocols
• Local practices/procedures to be incorporated

requires an extensive cache.

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION (continued)

MEDICAL TEAM CACHE (continued)

- Meds/equipment/supplies:
 - Airway supplies.
 - IV fluids.
 - Wide range of medications.
 - Immobilization equipment.
 - Extrication equipment
 - Monitoring capability.
 - Trauma intervention.
 - Miscellaneous.

- Acquisition.
 - Purchase and organization.
 - Expensive outlay.
 - Need agreements to replace perishable (shelf-life) items.
 - Agreements to acquire quickly at time of deployment.
 - Must be very specific about equipment and time element.
 - Important to exercise the agreement to test meeting the 6-hour deployment window.
 - Supplies must be acquired, packed and present at Point of Departure within the 6-hour window.

- Storage requirements.
 - Available for immediate local deployment.
 - Accessible 24 hrs/day.
 - Clean/dry/temperature-controlled/ electricity.
 - Regular check of equipment.
 - Regular recharging electrical equipment.
 - Checking and replacing "outdates."

- Packaging issues.
 - Use secure boxes.
 - Determine and label weights and cubes.
 - Identify all "Hazmat" containers.
 - Develop list of med/equipment location to allow "fast packing" upon deployment.

FEMA US&R RESPONSE SYSTEM	
FEMA US&R RESPONSE SYSTEM	
TASK FORCE MEDICAL TEAM TRAINING	04/97
■ Acquisition Options...	
• Purchase and organize it:	
- Expensive	
- Need mechanism to	
replace perishables	
• Agreements to acquire quickly at deployment:	
- Very specific about time element	
- Must "exercise" the agreement	
TASK FORCE MEDICAL TEAM TRAINING	04/97
FEMA US&R RESPONSE SYSTEM	
TASK FORCE MEDICAL TEAM TRAINING	04/97
■ Airway supplies	
■ IV fluids	
■ Wide range of meds	
■ Immobilization equipment	
■ Extrication equipment	
■ Storage Requirements...	
■ Monitoring capability	
■ Trauma intervention	
■ Miscellaneous	
• Accessible 24 hours/secure	
• Clean/dry/temperature control	

II. MEDICAL TEAM DEVELOPMENT
B. MEDICAL TEAM ORGANIZATION (continued)

CACHE MANAGEMENT "ON INCIDENT"

- Backpacks designed to allow:
 - 24-hour operation.
 - Care from initial mobilization to final demobilization.
 - Ability to provide immediate care at all times.

- Cache.
 - Extensive amount of meds/equipment.
 - Sophisticated/expensive equipment.
 - Cache distributions and expenditures must be tracked.
 - Extensive and expensive.

- Usefulness depends upon Medical Team Members:
 - Tracking its distribution/expenditure.
 - Keeping equipment available/operational.

- Narcotics accountability.
 - Close narcotics accountability must be maintained, especially since they will be distributed among Medical Team personnel.

- Maintaining "fixed medical assets."
 - Items essential to continued medical team function (monitoring equipment, etc.).
 - Not to be "handed off" with patients.

- Maintaining a reserve of essential "expendable medical assets."
 - To assure medical care for task force personnel.

- Cache management strategy.
 - Use T-cards for equipment tracking, minimally.
 - Record expenditures.
 - Assign specialist as cache manager/ logistics liaison.

- Exercising the cache.
 - Mobilization process (acquisition, packaging and transport to Point of Departure).
 - Operations involving medical care for task force personnel should be simulated.
 - Confined-space scenarios should be tested.

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■ Extensive and expensive

- Usefulness of it depends on YQL...
 - Tracking its distribution/expenditure
 - Keeping it available and operative

- Cache Management Strategy...
 - Use T-card system, minimally
 - Record expenditures
 - Assign specialist as cache

manager/logistics liaison

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II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

INTRODUCTION

- Many governmental/medical/voluntary organizations and individuals may respond to a collapsed-structure disaster. The Medical Team members must understand who these groups are and how to interact with them.
- The many tasks of the Medical Team during a response will be reviewed in a sequential context of a US&R deployment.
- Disaster background.
 - As a review, it is important to remember that disasters of the type we are discussing are major newsmakers.
 - The public expects a significant response and so many organizations have developed some "capacity" to provide emergency services.
- Definition:
 - A disaster by definition is a hazard whose impact on human being exceeds the local ability to effectively control the damage.

MEDICAL RESPONSE

- For both local and "outside" medical help, significant response obstacles exist.
- Obstacles:
 - Loss of basic services.
 - Medical system chaos.
 - Non-selective victim process.
 - Inherent delay to treatment.
 - Unusual medical problems.
 - "Race against time."
 - High risks for response personnel.
- Resources
 - Within this difficult context, there will still be a very widespread response by many people, both professionals and spontaneous volunteers, to

■ Background...
• Increasing national awareness
• Disasters are NEWSMAKERS!
• Predictions of MAJOR future earthquakes
• Concern about hurricanes, tornadoes, terrorist strikes and other
• Increasing public awareness of the potentials for

provide help.

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

MEDICAL RESPONSE (continued)

- Types of disaster response resources:
 - Local population/bystander response.
 - Bystanders disorganized but eager to help; often with little medical/rescue knowledge.
 - Will include local medical personnel.
 - Important resource and must be managed efficiently.

- Remember that the response doesn't occur in a vacuum and so don't ignore the volunteers. If they are alienated and not enlisted, they often do what they feel is best, including disappearing with patients before triage and orderly dispersal of patients takes place.

- Education and training of this potential resource is an important aspect of a community's Emergency Action Planning (Los Angeles City Fire Department's Emergency Response Team program is an example of this important approach).

- Local organized response resources.

- There are multiple important types of response. (These include medical resources.)
 - local general responders.
 - Fire suppression, law enforcement, utilities, shelter, crowd care (Red Cross) and others.
 - Local medical response.
 - Local surviving EMS.
 - Local hospitals.
 - Local medical organizations.

- Local Medical response is very important and must deal with the initial mass casualty care, triage, etc.

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DISASTER RESPONSE RESOURCES

- Categories...

- Local population/uninjured bystanders

- Local "organized" responders

- Mutual aid/state resources/

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

MEDICAL RESPONSE (continued)

- This traditional field disaster response emphasizes minimal, austere care - appropriate for first responders with overwhelming numbers of patients, few resources and immediate evacuation to intact medical facilities. It is, however, a different response scenario from the US&R Medical Teams, which are sophisticated units that expect less of a "mass care" scenario, but more critically injured yet salvageable patients.

- Hospital and extensive field medical care also not covered by this course, although many of the topics and approaches described in this course for providing critical care in confined spaces is easily adaptable to effective field disaster medical response.

MUTUAL AID / STATE RESOURCES

- Similar to local resources.
 - Extremely variable from locale to locale and state to state.
 - May include Medical/EMS capabilities.

- Important to discretely assess the true capability of these entities before incorporating them into your contingency plans.

- "Outside" medical and rescue teams:
 - Volunteer teams from the U.S.
 - Foreign teams (through the Office of U.S Foreign Disaster Assistance).
 - Extremely variable capabilities.
 - Assess their capabilities carefully.

FEDERAL RESOURCES

- With the vast amount of federal resources that exist, a major disaster will mobilize many of these to the disaster area. We will review only the one's most important to the function

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DISASTER RESPONSE RESOURCES

■ "Outside" medical/rescue teams

• Volunteer teams from U.S.

• Foreign teams

• Extremely variable capabilities

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of the US&R Task Force Medical Team.

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II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

MEDICAL RESPONSE (continued)

- Organized through the Federal Response Plan, which is a federal plan to be used in providing all federal aid in a declared disaster in the U.S.
- ESF-8 — Medical.
 - Department of Health and Human Resources / US Public Health Service is Lead Agency.
 - Many other agencies provide support (Defense, Agriculture, etc.).
 - Many of ESF-8's responsibilities were mentioned in an earlier discussion. Their function in disaster site medical response must be well understood.
- National Disaster Medical System (NDMS). A "Nationwide Mutual Aid System" for:
 - Field medical care: Disaster Medical Assistance Teams (DMATs).
 - Patient evacuation system: May involve DMATs.
 - Definitive (in-hospital) medical care.
- Traditional DMAT concept.
 - Disaster site clearing and staging.
 - Airport reception.
 - These are the primary medical resource of NDMS and should be expected to arrive in the disaster area within days of the disaster.
 - Advanced DMAT Elements (ADEs) may arrive within the first 12 hours.
 - This may very well become the medical resource to which you transfer your patients.
- Specialized DMATs. As discussed earlier, these have evolved to provide specialized medical care within the disaster area. They include:

<ul style="list-style-type: none"> • Burn. • Critical care. • Hazmat decontamination. • Mortuary. • Trauma. 	<ul style="list-style-type: none"> • Confined-space. • Dialysis. • Mental health. • Pediatric.
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NATIONAL DISASTER MEDICAL SYSTEM
(NDMS)

■ A Nationwide mutual aid system for:

• Field medical care

(Disaster Medical Assistance
Teams)

• Patient evacuation

(Disaster Medical Assistance
Teams)

• Definitive medical care

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

MEDICAL RESPONSE (continued)

- The US&R Medical Team may interact with these resources, especially if US&R personnel require treatment.

- ESF-9 — Urban Search and Rescue.
 - FEMA: lead agency.
 - Department of Defense (DoD): support agency.
 - Provides "light" search and rescue, military manpower.
 - Provides support for Heavy US&R (transport, etc.).
 - Other Agencies: support function.

- FEMA US&R medical teams.
 - US&R Medical Teams will be operating in the disaster area with other task forces.

- HOW TO "COPE"...
 - The probability is, therefore, that your US&R response organization will be interacting with many different entities at many different levels.

- IST — Incident Management Team
 - A rapidly deployable multi-disciplinary team designed to support the task forces and to facilitate their integration into the local emergency management structure.
 - The IST includes a Medical Support Officer.
 - May provide much of the info/integration function.

INCIDENT MANAGEMENT SYSTEM (IMS)

- To coordinate effectively, the Incident Command System (ICS) has been developed. Also referred to as the "Incident Command System."
 - This is a management and organizational format that effectively integrates large numbers and types of response groups into the overall response.
 - The Task Force is designed to integrate into the local structure: "To support the local rescue effort"; under the local command of the on-scene Incident

- Command.
- All FEMA US&R task force interaction and planning is or should be within the ICS organizational structure. The structure has been fielded under a variety of disaster settings and has been found to be effective.

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

INCIDENT MANAGEMENT SYSTEM (IMS) (continued)

- The Medical Team function within IMS:
 - The Medical Team must also operate through this structure, with the assistance of the Task Force Leader:
 - Determine the available medical resources.
 - Determine their true capabilities.
 - Develop reliable communication with them as indicated.
 - Much of this may be established by the IST.

ACTIVATION

- Assessment of incident
 - Begin assembling medical intelligence about the site (process of intelligence gathering continues throughout the response — use the Medical Action Plan).
 - Adjust the medical cache if indicated.
- Medical cache appropriated and shipped to Point of Departure (POD).
 - One Med Team member assigned to assure cache operational readiness.
 - Acquire controlled substances and meds not in cache.
 - Review meds for expiration dates.
 - Check function of equipment.
 - Assure prompt shipment to POD.
- Complete DMAT Federal Appointment Process:
 - Oath of Office administered (SF-61).
 - Declaration of Appointee (SF-61B).
 - Forms FAXed to NDMS (301) 443-5140.
 - Hard copy sent via mail.
- Assure adequate personal gear/meds/eye wear.
 - Very important to assure personal preparedness.
 - Assure gear is appropriate for climate.
- Responder information form collected (from files).

- Medical Team function in IMS
 - Interact through the TF Leader
 - Determine available medical resources
 - Determine their TRUE medical capabilities
 - Establish communication with them as indicated

- Assessment of incident
 - Begin assembling medical intelligence about the site (adjust the medical cache if indicated)
 - Medical cache appropriated and shipped to Point of Departure (POD)
 - One Medical Team Member assigned to assure cache operation readiness

- Personal ID cards
 - FEMA
 - NDMS

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

POINT OF DEPARTURE

- Medical Team Manager:
 - Meet assigned personnel.
 - Assure they are adequately prepared (personal gear, meds, eye wear, no acute medical illnesses, etc.)

- Provide a more detailed briefing:
 - Additional incident information.
 - Review specific tasks for team members.

- Medical Team tasks:
 - Review each task force member's responder info form during personnel check-in.
 - Clarify any health issues on the forms.
 - Inquire about acute medical problems.
 - Perform brief physical evaluation (check-in procedures).
 - Assure 14-day supply of medications.
 - Assure extra eye wear if needed.
 - Problems brought to TFL for resolution.

- Assess canines.
 - Do this in conjunction with Search Team Manager.
 - Check canine health forms for appropriate inoculations.
 - Assure canines are currently healthy.

- Assembly of medical cache.
 - Final response packaging.
 - Provide medical packs to Med Team members: to be carried throughout the mission.
 - One Med Team member will be assigned role of Medical Team cache manager.
 - Responsible for drug accountability and medical logistics and coordinates with Logistics Specialists.
 - Assist with loading of all equipment.

- Participate in task force briefings
 - Provide medical information pertinent to disaster site.
 - Health and safety reminders to task force personnel.
 - Brief education about expected stress and the effects on

FEMA US&R RESPONSE SYSTEM

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- Medical Team:
 - Review each task force member's

responder information form during
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- Clarify any health issues on forms
- Inquire about medical problems

- Assure 14 day supply of meds

- Assure extra eyewear if needed

- Medical Team Manager:
 - Assess canine

(with Search Team Manager)

- Meet assigned personnel
- Health forms/appropriate inoculations

- Current health

Provide a more detailed briefing:

- Incident information

- Specific tasks for Medical

Team members

personnel. Emphasize that this is an expected NORMAL response.

- Other tasks as assigned by Task Force Leader.

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

IN TRANSIT

- Review task force Medical Procedures.
- Get to know your Task Force members.
- Monitor mental and physical conditions of task force personnel.
- Encourage rest during travel.

ARRIVAL AND ON-SITE OPERATIONS

- Assist with unloading of equipment.
- Medical intelligence gathering (Medical Action Plan):
 - Environmental/hazmat threats.
 - Victim characteristics.
 - Type/function of collapsed structures.
 - Surviving medical systems.
 - Other available resources.
 - Transfer of patients (destination, method and procedures).
 - Processing of deceased.
 - Evacuation process for task force personnel.
 - Supply/resupply resources.
- Brief local officials and establish liaison with IMS and medical resources. Important function to be coordinated through the Task Force Leader (if IST is not available).
- Medical Team Fact Sheet useful in summarizing Medical Team capabilities/ limitations for local Incident Manager and others.
 - Public health issues
 - Set-up of Medical Treatment Section.
 - Assess food and fluids for safety, nutritional value, etc.
 - Bring problems to the attention of Logistics and Safety.

FEMA US&R RESPONSE SYSTEM	
FEMA US&R RESPONSE SYSTEM	
TASK FORCE MEDICAL TEAM TRAINING	0497
■ On-site operations (continued)	
• Brief/establish liaison with ICS	
and medical resources	
• Use Medical Team Fact Sheet	
• Assess Base of Ops set-up	
• Medical Team work schedule	
TASK FORCE MEDICAL TEAM TRAINING	0497
• Maintaining/tracking equipment	
• Monitor mental/physical conditions	
of task forcemembers	
On-site operations	
• Assist with unloading of equipment	
• Medical intelligence collection	
• Environmental/Hazmat threats	
• Victim characteristics	
• Type/function of structures	
• Surviving medical systems	
• Other available resources	
TASK FORCE MEDICAL TEAM TRAINING	0497
• Transfer of patients	
• Processing of deceased	
• Evac process for TF personnel	
• Supply/resupply resources	

- Finalize work schedules and assignments.

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

ARRIVAL AND ON-SITE OPERATIONS (continued)

- Maintaining/tracking equipment:
 - Charging/clean-up/maintenance.
 - Accountability.
 - Resupply.

- Monitor mental/physical conditions of task force personnel.

PROVISION OF MEDICAL CARE — MEDICAL CARE "COVERAGE"

- Search and reconnaissance team.
 - Mobile.
 - Nine-person team.
 - Includes one medical Specialist.
 - Has communication with Base of Operations.

- Rescue sites.
 - Organize Medical Treatment Section at Base of Ops.
 - Be prepared to provide treatment within the collapsed structure.

- Medical care in other areas with task force and support personnel.

- Priorities in medical care:
 - First — task force personnel and other rescuers.
 - Second — victims rescued by US&R task force.
 - Third — other victims, if possible.

- Medical care tasks.
 - Evaluation.
 - Treatment.
 - Immobilization.
 - Extrication.
 - Transfer of disaster victims.
 - Evacuation of injured task force personnel.

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■ **Tasks:**

• Evaluation

• Treatment

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

DOCUMENTATION

- Important area that must not be neglected in the "heat of the battle."
- Documentation for task force personnel:
 - Patient Care Form.
 - U.S. Department of Labor Form CA-1.
 - Other forms per individual task force sponsoring organization.
 - Task Force Injury/Illness Log.
- Documentation of victim care:
 - Patient Care Form.
 - Local triage tag.
 - Patient Referral Form.
- Patient Care Form.
 - Important to use this to pass on information for the patient's ongoing medical care and to retain a record for later review.



OTHER TASKS AS ASSIGNED BY TASK FORCE LEADER

- Medical Team personnel may be called upon to perform tasks completely unrelated to medicine.

DEMOBILIZATION

- Re-evaluate task force's capabilities (in conjunction with Task Force Leader) for re-deployment if needed.
- In addition:
 - Equipment packaging and cleaning.
 - Clean-up of Base of Operations.
 - Preparation for departure of Medical Team.
 - Other tasks as assigned by Task Force Leader.
 - Continued capability to care for task force personnel until

Error! FEMA US&R RESPONSE SYSTEM

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- Demobilization
 - Re-evaluate Medical Team/task force capabilities
 - Equipment packaging/cleaning
 - Clean-up Base of Ops
 - Preparation for departure
 - Medical Personnel
 - Task Force
 - Other tasks as assigned
 - Continue medical care capability

UNTIL REACHING FINAL
 DESTINATION

- reaching final destination.
Assist in coordinating a mission review session.

II. MEDICAL TEAM DEVELOPMENT
C. DISASTER RESPONSE

POST-MISSION

- Assure follow-up care for any injured task force member.
- Debriefing and documentation of mission actions.
- Medical Cache cleaning and resupply.
- Assist in task force mission critique.
- Task force Incident Stress Debriefing.
- Information to US Public Health Service in Rockville, MD.
Information for US PHS:
 - Name and social security number of each Medical Team member on the response.
 - Date and time the mission was terminated and demobilization was completed.
 - Complete and submit an After-Action Summary to PHS highlighting "lessons learned" and recommendations for improvement of future missions.

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■ Post-mission
■ Information for US PHS
• Assure follow-up care for injured
• task force members Name and social security # of each
Medical Team member
• Debriefing and documentation
of actions
• Date and time mission terminated
• Medical cache cleaning and After-action summary
resupply
• Highlighting "lessons learned"
• Assist in mission critique
• Recommendations for future missions
• Incident stress debriefing
missions
• Info to US Public Health Service

FEMA US&R RESPONSE SYSTEM

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II. MEDICAL TEAM DEVELOPMENT

D. FUTURE DEVELOPMENT/TRAINING/EXERCISE

INTRODUCTION

- The preceding discussions, work stations and patient-care scenarios have covered many of the specifics of collapsed-structure response and confined-space medical care and have allowed the participants to apply the material in simulated responses.
- This course helps the participants to reach an "operational" level of expertise. Further training and exercise is necessary to retain and expand this knowledge base.

PRESENT STATE

- FEMA US&R Response System being implemented.
- Task forces selected and development grants awarded.
- Task forces being organized and cache acquisition in progress.
- Task Force Leaders orientation completed.
- Medical Team cache specified but further packaging development and cache development is necessary.
- Further training being developed for each task force element (similar to this course).

FUTURE DIRECTIONS

- Development:
 - Medical cache better defined.
 - Evolution of Task Force and Medical Team procedures after evaluation through exercises and responses.
 - Evolution of role with NDMS and other DMATs.

- Future directions

- Development:

- Medical cache better defined

- Further evolution of task force

- and Medical Team procedures

- Evolution of role with NDMS

II. MEDICAL TEAM DEVELOPMENT
D. FUTURE DEVELOPMENT/TRAINING/EXERCISE

FUTURE DIRECTIONS (continued)

- Research:
 - Improved knowledge of Crush Syndrome and other disaster-related medical conditions.
 - Further experience and training to develop more effective ways to maneuver and care for patients in confined spaces.
 - Further experience in disaster response and providing medical care in this setting.
 - Application of knowledge from related fields (EMS, wilderness medicine, etc.)
 - New equipment:
 - Miniaturization of electronics.
 - Evolution of more versatile/durable equipment.

 - Education:
 - Hazmat training.
 - Other US&R subjects (Rescue Systems I and II, etc.).
 - Disaster conferences run by the medical and rescue communities.

 - Training:
 - Vary patient scenarios.
 - Difficult patient positions.
 - Exercise in triage/mass care.
 - Vary injuries, esp. ones amenable/requiring pre-hospital recognition/intervention.
 - Include hazmat exposures and other unusual but possible situations.

 - Exercises:
 - Include all functions in the exercise "test":
 - Mobilization and cache acquisition.
 - Deployment of personnel and equipment.
 - Logistical support ability ("survival"): food, water, camp set-up, etc.
-
- Coordination with Search and Rescue elements in patient recovery.
 - Provision of medical care.

<ul style="list-style-type: none"> ■ Improved knowledge of 	<p>medical entities</p>
<ul style="list-style-type: none"> ■ Improved confined-space care 	
<ul style="list-style-type: none"> ■ Advances in providing disaster 	<p>medical care</p>
<ul style="list-style-type: none"> ■ Applications from related fields 	<p>(EMS, Wilderness Medicine, etc.)</p>
<ul style="list-style-type: none"> ■ New equipment; miniature/ 	<p>versatile/durable</p>
<p>FEMA US&R RESPONSE SYSTEM</p> <p>TASK FORCE MEDICAL TEAM TRAINING 04/97</p>	
<ul style="list-style-type: none"> ■ Vary the patient scenarios: 	
<ul style="list-style-type: none"> • Difficult positions 	
<ul style="list-style-type: none"> • Different injuries 	
<ul style="list-style-type: none"> • Exercise triage/mass care 	
<ul style="list-style-type: none"> • Hazmat and other unusual 	<p>problems</p>

II. MEDICAL TEAM DEVELOPMENT
D. FUTURE DEVELOPMENT/TRAINING/EXERCISE

FUTURE DIRECTIONS (continued)

- Exercise realism:
 - Outdoors "rubble" situations
 - Reality cues: noise, dust, heat or rain, etc.
 - Include training exercises with the non-medical components of your US&R resource.
 - Important to use established task force procedures during exercises.
 - Use the medical cache.

- Exercising the medical cache.
 - Makes the scenario "real".
 - Forces personnel to perform under "real-time" and "real-manpower" circumstances.
 - Familiarizes personnel with equipment/where stored.
 - Allows check of equipment's performance status and medication outdates.

- Exercise as a verification process
 - Cache acquisition/packaging complete.
 - Team member medical credentialling.
 - NDMS enrollment (ID card).
 - Personal equipment/meds.
 - Immunizations and medical clearance (review of Responder Information Sheet).

- Evaluation process.
 - Necessary for further development/improvement of individual task force and of the system.
 - Develop evaluation process prior to exercise.
 - Record as much as possible.
 - Share info as much as possible.

TASK FORCE MEDICAL TEAM TRAINING 04/97

■ Exercises realism:

- "Real" rubble
- "Reality cues" (noise, dust, etc.)
- Train with other task force Medical Teams
- Follow established procedures
- Use the cache

■ Using the medical cache:

- Makes scenario "real"
- Forces "real-time" and "real man-power" considerations