NEIGHBORHOOD EMERGENCY RESPONSE TEAM

Participant Training Manual

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ACKNOWLEDGEMENTS

The Community Emergency Response Team (CERT) concept was developed and implemented by the City of Los Angeles Fire Department (LAFD) in 1985. They recognized that citizens would very likely be on their own during the early stages of a catastrophic disaster. Accordingly, LAFD decided that some basic training in disaster survival and rescue skills would improve the ability of citizens to survive and to safely help others until responders or other assistance could arrive.

The training model that the LAFD initiated was adopted by other fire departments around the country, including communities where the major threat is hurricanes rather than earthquakes. Building on this development, in 1994 the Federal Emergency Management Agency (FEMA) expanded the CERT materials to make them applicable to all hazards and made the program available to communities nationwide. Since that time, thousands of dedicated trainers, organizations, and citizens have embraced the responsibility to learn new skills and become prepared to execute safe and effective emergency response. We salute you.

This Manual was developed from materials found in the CERT curriculum and the original manual of the Neighborhood Emergency Response Team in San Francisco.

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WELCOME and COURSE GUIDELINES

Welcome to the NERT training program. The SFFD is very happy that you have decided to take this important step in preparing yourself and our City for a disaster. Volunteering 20 hours is no small commitment. We know there are many other things you can do with your time and you have our sincere appreciation.

Here are some guidelines and frequently asked questions about the basic training course and beyond.

- Qualification and Requirements
  - You must be a San Francisco resident, or work in a physical location in San Francisco to be eligible to take NERT. Exceptions can be made for commuter students enrolled in a San Francisco College or University.
  - You must provide your legal name on paperwork. SF Residents must provide a home address. You have the option to provide a work address so that we can identify the NERT near the area you spend most time. Attendees residing outside of SF must provide both home and work addresses.
  - All participants must fill out all paperwork included in the course. This includes:
    - Enrollment Sheet (class 1)
    - Agreement of Understanding (class 1)
    - Code of Conduct (Class 1)
    - Disaster Service Worker VP (DSW) (class 5 or upon request)
  - No new students may join after the first two sessions of any series are complete
- Attendance
  - *It is very important for participants to attend all sessions in order to gain the full scope and benefit of the training. This includes not arriving late or leaving early.*
- Make-Up sessions
  - You may be allowed to make up a session should the need arise.
  - Contact the NERT training office well in advance of attending at sffdnert@sfgov.org to arrange a makeup. Include your full name, the location where you are enrolled and the session which you would like to attend. You can find the schedule of locations on the web page http://sf-fire.org/training-schedule-registration
  - Students have 6 months to complete all classes

COMMUNITY PREPAREDNESS

NERT is a critical program in the effort to engage everyone in San Francisco in making our neighborhoods safer, more prepared, and more resilient when incidents occur.

Community-based preparedness planning allows us all to prepare for and respond to anticipated disruptions and potential hazards following a disaster. As individuals, we can prepare our homes and families to cope during that critical period. Through pre-event planning, neighborhoods and worksites can also work together to help reduce injuries, loss of lives, and property damage. Neighborhood preparedness will enhance the ability of individuals and neighborhoods to reduce their emergency needs and to manage their existing resources until professional assistance becomes available.

Studies of behavior following disasters have shown that groups working together in the disaster period perform more effectively if there has been prior planning and training for disaster response. These studies also show that organized grassroots efforts may be more successful if they are woven into the social and political fabric of the community—neighborhood associations, schools, workplaces, places of worship, and other existing organizations.

Effective response therefore requires comprehensive planning and coordination of all who will be involved—government, volunteer groups, private businesses, schools, and community organizations. With training and information, individuals and community groups can be prepared to serve as a crucial resource capable of performing many of the emergency functions needed in the immediate post-disaster period. The NERT Program is designed to train individuals to be assets to help communities prepare for effective disaster response.

WHEN DISASTER STRIKES

The damage caused by natural disasters, such as earthquakes, storms, and flooding, or from manmade/technological events such as explosions or hazardous materials accidents can affect all aspects of a city, from government services to private enterprise to civic activities. These events:

- Severely restrict or overwhelm our response resources, communications, transportation, and utilities
- Leave many individuals and neighborhoods cut off from outside support

Damaged roads and disrupted communications systems may restrict the access of emergency response agencies into critically affected areas. Thus, for the initial period immediately following a disaster—often up to 3 days **or longer**—individuals, households, and neighborhoods may need to rely on their own resources for:

- Food
- Water
- First aid
- Shelter

Individual preparedness, planning, survival skills, and mutual aid within neighborhoods and worksites during this initial period are essential measures in coping with the aftermath of a disaster. **What you do today will have a critical impact on the quality of your survival and your ability to help others safely and effectively**. By learning about the likely hazards in your community and your City's plans and protocols, understanding hazard-specific protective actions and response skills, assembling important emergency supplies, and mitigating potential hazards in your home, you will be more resilient to any disruptive event. You will be an important asset to your family, neighbors, and other members of your community.

ABOUT NEIGHBORHOOD EMERGENCY RESPONSE TEAM (NERT)

The Loma Prieta earthquake and aftermath of October 17, 1989 demonstrated the importance of civilian volunteers during a disaster. At the Marina fire, volunteers assisted the Department in those labor-intensive operations such as leading hose lines by hand over great distances to supply water from the Bay to the fire site.

In a larger scale disaster, the use of volunteers may be even more widespread and more necessary. With this in mind, the San Francisco Fire Department has undertaken a program of civilian emergency response training. The intention of this training is to give volunteers a higher level of basic skills in firefighting, search and rescue, disaster medicine, and preparedness.

If available, emergency services personnel are the best trained and equipped to handle emergencies. Following a catastrophic disaster, however, you and the community may be on your own for a period of time because of the size of the area affected, lost communications, and unpassable roads.

NERT Basic Training is designed to prepare you to help yourself and to help others in the event of a catastrophic disaster. Because emergency services personnel will not be able to help everyone immediately, you can make a difference by using your NERT training to save lives of those around you and protect property.

This training covers basic skills that are important to know in a disaster when emergency services are not available. With training and practice, and by working as a team, you will be able to protect yourself and do the greatest good for the greatest number after a disaster.

NERT trained volunteers will be utilized in three specific ways. Neighborhood Emergency Response Team members will be:

1. Better prepared in self-sufficiency following a disaster.
2. Able to provide emergency assistance to their family and immediate neighbors.
3. Able to work as a team in their neighborhood in the event of a major disaster.

HOW NERTS OPERATE

As each NERT is organized and trained in accordance with standard operating procedures developed by the sponsoring agency, its members select an Incident Commander/Team Leader (IC/TL) and an alternate and identify a meeting location, or staging area, to be used in the event of a disaster.

The staging area is where the fire department and other services will interact with NERTs. Having a centralized contact point makes it possible to communicate damage assessments and allocate volunteer resources more effectively. This is true for all NERTs, whether active in a neighborhood, workplace, school, college/university campus, or other venue.

Damage from disasters may vary considerably from one location to another. In an actual disaster, NERTs are deployed progressively and as needs dictate. Members are taught to assess their own needs and the needs of those in their immediate environment first.

NERT members who encounter no need in their immediate area then report to their staging area, where they take on assigned roles based on overall area needs. Members who find themselves in a heavily affected location send runners to staging areas to get help from available resources. Ham and other radio links also may be used to increase communication capabilities and coordination.

The NERT Program can provide an effective first-response capability. Acting as individuals first, then later as members of teams, trained NERT volunteers can fan out within their assigned areas, extinguishing small fires, turning off natural gas at damaged homes, performing light search and rescue, and rendering basic medical treatment. NERTs also act as effective “eyes and ears” for uniformed emergency responders. Trained volunteers also offer an important potential workforce to service organizations in non-hazardous functions such as shelter support, crowd control, and evacuation.

COURSE OVERVIEW AND OBJECTIVES

The purpose of the *Neighborhood Emergency Response Team (NERT) Basic Training* is to provide the individuals who complete this course with the basic skills that they will need to respond to their community's immediate needs in the aftermath of a disaster, when emergency services are not immediately available. By working together, NERT members can assist in saving lives and protecting property using the basic techniques in this course. The target audience for this course is individuals who desire the skills and knowledge required to prepare for and respond to a disaster.

Overall Course Objectives

Upon completing this course, the participants should be able to:

1. Describe the types of hazards that are most likely to affect their homes, workplaces, and neighborhoods.
2. Take steps to prepare themselves and their families for a disaster.
3. Describe the functions of NERTs and their role in immediate response.
4. Identify and reduce (mitigate) potential hazards in their homes, workplaces, and neighborhoods.
5. Work as a team to apply basic fire suppression strategies, resources, and safety measures to extinguish a pan fire.
6. Apply techniques for opening airways, controlling bleeding, and treating for shock.
7. Conduct triage under simulated disaster conditions.
8. Perform head-to-toe patient assessments.
9. Select and set up a treatment area.
10. Employ basic treatments for various injuries and apply splints to suspected fractures and sprains.
11. Identify planning and size-up requirements for any potential response situations including providing medical assistance, search and rescue and basic fire suppression.
12. Describe the most common techniques for searching a structure.
13. Work as a team to apply safe techniques for debris removal and survivor extrication.
14. Describe ways to protect rescuers during search and rescue operations.
15. Describe the post-disaster emotional environment and the steps that rescuers can take to relieve their own stressors and those of disaster survivors.
16. Describe the NERT organization at the staging area command post and the documentation requirements.

In addition to the overall course objectives listed above, each unit has specific objectives.

COURSE AGENDA

Unit	Topics
1	**Disaster Preparedness** • Introductions and Course Overview • Protection for Disaster Workers • Community Preparedness: Roles and Responsibilities • Hazards and Their Potential Impact • Impact on the Infrastructure • Home and Workplace Preparedness ▪ Personal Planning ▪ Supplies and kits • Reducing the Impact of Hazards Through Mitigation • NERT in Disaster • NERT roles in non-disaster • Unit Summary
2	**Fire Safety, Utility Controls, Common Hazardous Materials & Terrorism Awareness** • Introduction and Unit Overview • Rescuer Safety • Utilities • Fire Chemistry ▪ NERT Size up ▪ Fire Size up Considerations ▪ Fire behavior ▪ Firefighting Resources • Hazardous Materials • What Is Terrorism? ▪ NERTs and Terrorist Incidents • Unit Summary

Unit	Topics

3	**Disaster Medical Operations — Part 1 & 2**
	• Introduction and Unit Overview
	• Rescuer Precautions
	  ▪ Public Health Considerations
	  ▪ Pandemic Flu
	• Treating Life-Threatening Conditions
	  ▪ Triage
	  ▪ Functions of Disaster Medical Operations
	  ▪ Establishing Medical Treatment Areas
	• Conducting Head-to-Toe Assessments
	• Treating Fractures, Dislocations, Sprains, and Strains
	• Treating Burns
	• Wound Care
	• Nasal Bleeding
	• Bites and Stings
	• Treating Cold-Related Injuries
	• Treating Heat-Related Injuries
	• Triage activity
	• Unit Summary

4	**Light Search and Rescue Operations** • Introduction and Unit Overview • Light search and rescue • Heavy rescue resources • Safety and Size-Up During Search and Rescue Operations • Building types & hazards • Structural damage assessment • Forcible Entry • Conducting Interior and Exterior Search Operations • Search markings • Lifting heavy objects • Conducting Rescue Operations • Survivor carries • Search & rescue activity • Unit Summary

Unit	Topics

5	**NERT Organization and Disaster Psychology**
	• Introduction and Unit Overview
	• Response Overview
	  ▪ Federal
	  ▪ Local
	  ▪ SFFD
	• NERT Organization – ICS roles and Documentation
	• NERT Communications
	• NERT Mobilization
	• Activity: ICS Tabletop
	  ▪ Staging area command post operations
	  ▪ Incident prioritization
	• Disaster Trauma
	  ▪ Working with Survivors' Trauma
	  ▪ Personal considerations
	  ▪ Team Well-Being
	  ▪ Stress management tools
	• NERT Volunteer neighborhood involvement
	• ALERT (SFPD)
	• Unit Summary

6	**Course Review, Final Exam, SF Resources and Disaster Simulation** • Course Summary • San Francisco Resources • Additional Training for NERTs • Emergency and non-emergency roles for NERTs • Final Exam • Hands-on skills activity • Graduation

AFTER NERT BASIC TRAINING

Upon completion of the NERT Basic Training course, you may receive a certificate. You may also be issued a card from the SFFD to identify you as an emergency response team member during disaster response. This is an official government ID for participation and response and should be treated as such. However, it should not be used to request favor or access, nor does it replace a State ID/Driver's license as an official means of identification. If this ID is lost or stolen, a police report should be filed.

You should maintain your SFFD issued NERT safety equipment and have these items available for use during a disaster. Additionally, you should create a response backpack (NERT go-bag) with additional items you will need such as goggles, some snack bars, first aid supplies and a flashlight.

Training in disaster response should not be a one-time event. Awareness, commitment, and skills must be reinforced through follow-up training and repeated practice to maintain the edge necessary for effective response in the face of a disaster. To maintain your skill level and continually improve performance, you and your team members should participate in continuing supplemental training when offered. Working through practice disaster scenarios with other volunteers will provide opportunities not only for extended practice but also for valuable networking with NERTs in the local area.

UNIT 1: DISASTER PREPAREDNESS

In this unit you will learn about:

- **Roles and Responsibilities for Community Preparedness:** How everyone in a community has a role in disaster preparedness and response.
- **Elements of Disasters and Their Impact on the Infrastructure:** The potential effect of extreme emergencies and disasters on transportation; electrical service; telephone communication; availability of food, water, shelter and fuel; and emergency services.
- **Personal Preparedness:** How you can prepare in advance to improve the quality of your survival and to reduce the damage from hazards.
- **Reducing Impact through Mitigation: Using '**Earthquake Eyes' to identify and mitigate safety hazards in our work and home environments.
- **Protection for Disaster Workers:** Laws that protect disaster workers from liability.
- **GOALS:**
  - ☐ To prepare your family and home to survive any disaster
  - ☐ To protect yourself first so that you will be able to help others.
  - ☐ To know the San Francisco Alerts & Warning resources
  - ☐ To assist family and neighbors during time of disaster.
  - ☐ To plan to work as part of an emergency response team

UNIT INTRODUCTION AND UNIT OVERVIEW

Setting the Stage

According to a 1990 U.S. Geological Survey study, there is a 67% chance of a major earthquake occurring in the Bay Area within the next 30 years. There are also other possible disasters that could occur such as conflagrations, tsunamis, transportation accidents, civil disturbances, pandemic, terrorist activity, or war.

The damage caused by natural disasters and manmade events can be extensive. While emergency services personnel are the best trained and equipped to handle emergencies, they may not be immediately available in a catastrophic disaster. In such a situation, members of the community may be on their own for several days or longer. They may have to rely on their own resources for food, water, first aid, and shelter, and neighbors or coworkers may have to provide immediate assistance to those who are hurt or need other help.

Neighborhood Emergency Response Teams (NERTs) respond in the period immediately after a disaster when response resources are overwhelmed or delayed.

NERTs can:

- Assist emergency services personnel when requested in accordance with standard operating procedures developed by the sponsoring agency and by area of training. The Sponsoring Agency in San Francisco is the San Francisco Fire Department (SFFD).
- Assume some of the same functions as emergency services personnel following a disaster

While NERTs are a valuable asset in emergency response, NERTs are not trained to perform all of the functions or respond to the same degree as professional responders. NERTs are a bridge to professional responders until they can arrive.

This training covers basic skills that are important to know in a disaster when emergency services are not immediately available. By learning how to work as a team, neighbors and coworkers will be able to do the greatest good for the greatest number after a disaster.

Unit Objectives

At the end of this unit, you should be able to:

- Identify the roles and responsibilities for community preparedness, to include government, community leaders from all sectors, and the public.
- Describe the types of hazards most likely to affect your community and their potential impact on people, health, and infrastructure.
- Undertake personal preparedness and surroundings mitigation actions.
- Describe the NERT principles and protections for disaster volunteers

NERT Registration Paperwork

- Student Registration Sheet
  Provide personal data about home and work
- Agreement of Understanding
  Waiver required to participate
- Volunteer Code of Conduct
  Agree to terms of code of conduct of the SF Fire Department for volunteers
- Disaster Service Worker Volunteer Program Registration [submit in Class 5]
  Registration for enrolls you in the State program that provides basic liability coverage for volunteers affiliated with an authorized supervising agency acting in a disaster within the scope of their training.

Exercise: Introductions (5 minutes)

Instructions: Meet new participants in your training Cadre

Introduce yourself to at least 2 people in this course that you did not know before you came to the class.

As a NERT member, you will be relying on your fellow trained volunteers in response. Plan to work with each other throughout this course. Teamwork and

Protection for Disaster Workers

The Good Samaritan Law

This law is found in California Health and Safety Code § 1799.102, and it states, in relevant part, “No person who in good faith, and not for compensation, renders *emergency care at the scene of an emergency* shall be liable for any civil damages resulting from any act or omission.”

Federal Volunteer Protection Act of 1997/2017

Public Law 105-19 aims to promote volunteerism by limiting, and in many cases eliminating, a volunteer's risk of tort liability when acting for nonprofit organizations or government entities.

People who volunteer to assist nonprofit organizations or government agencies or programs run the risk that their actions, while well-intentioned, may cause harm to another. However, if those actions are deemed negligent, the volunteer may face civil liability for damages caused by the negligent conduct.

Volunteer Organization Protection Act of 2017 (H.R. 2432) amends the Volunteer Protection Act of 1997 to expand liability protections to volunteer nonprofit organizations for harm caused by an act or omission of a volunteer on behalf of the organization.

Disaster Service Worker Volunteer Program, CA (DSWVP)

The Disaster Service Worker Volunteer Program (DSWVP) was created as the result of legislation to provide workers' compensation benefits to registered Disaster Service Worker (DSW) volunteers who are injured while participating in authorized disaster-related activities, including pre-approved training.

Disaster service, as defined for the Program, is designed to aid in the response and recovery phases in a disaster or emergency. It does not include the day-to-day emergency response activities typically associated with, for example, law enforcement, fire services or emergency medical services

NERT Basic Training Course Overview

NERT Basic Training is provided in six units:

- Unit 1: Disaster Preparedness
- Unit 2: Fire Safety and Utility Control; Hazardous Materials & Terrorism Awareness
- Unit 3: Disaster Medical Operations
- Unit 4: Light Search and Rescue Operations
- Unit 5: NERT Organization and Command Post Operations; Disaster Psychology
- Unit 6: Course Review, Final Exam and Hands-on Exercise

NERT Principles

- Make decisions and take actions that "do the most good for the most people"
- NERTs don't get hurt

COMMUNITY PREPAREDNESS: ROLES AND RESPONSIBILITIES

Community preparedness is a key priority in lessening the impact of disasters. It is critical that all community members take steps to prepare in advance of an event.

Effective community preparedness addresses the unique attributes of the community:

- The threat and hazards profile and vulnerabilities of the area
- The existing infrastructure
- Resources and skills within the community
- The population composition of the community

Effective community preparedness also engages the whole community:

- Government leaders and the public sector
- Community leaders from the private and civic sectors
- The public

Government

Government has the responsibility to develop, test, and refine emergency operations plans, ensure emergency responders have adequate skills and resources, and provide services to protect and assist its residents. In meeting these challenges, government also has the responsibility to involve the community in the planning process, to incorporate community resources in the plans, to provide reliable, actionable information, and to encourage training, practicing, and volunteer programs.

Government emergency service providers include:

- Emergency Management
- Law Enforcement
- Fire and Rescue
- Emergency Medical Services
- Public Health Services
- Public Works
- Human Services

Community Leaders

Community leaders from the private and civic sectors have a responsibility to participate in community preparedness. Their responsibilities include:

- Participating on the local collaborative planning council to provide insights and perspectives reflecting their industry or the constituency they service, for example, people with disabilities, local schools, communities with language or cultural differences, small businesses, the economically disadvantaged, communities of faith
- Identifying and integrating appropriate resources into government plans
- Ensuring facilities, staff, and customers or population served are prepared, trained, and practiced in preparedness actions

The Public

The public also has a responsibility for preparedness. All members of the community should:

- Learn about community alerts and warnings, evacuation routes, and how to get critical information
- Take training in preparedness, first aid, and response skills
- Practice skills and personal plans through periodic drills in multiple settings
- Network and be able to help others
- Participate in community feedback opportunities
- Report suspicious activity
- Volunteer

Engaging the Whole Community

The phrase “whole community” appears a lot in preparedness materials, as it is one of the guiding principles. It means two things:

- Involving people in the development of preparedness documents.
- Ensuring their roles and responsibilities are reflected in the content of the materials.

Despite advances in technology, a functioning community is based on complex and interdependent systems driven by human forces. Government and community leaders must together to ensure emergency plans more effectively reflect the community, including the specific population composition, the hazard profile, and the infrastructure.

HAZARDS AND THEIR POTENTIAL IMPACT

Types of Disasters

Disasters can be:

- Natural (e.g., earthquakes, wildfires, floods, extreme heat, hurricanes, landslides, thunderstorms, tornadoes, tsunamis, volcanic eruptions, winter storms)
- Technological (e. g., hazardous material spill, nuclear power plant accident)
- Intentional (terrorism using chemical, biological, radiological, nuclear, or explosive weapons)

Key Elements of Disasters

Regardless of the event, disasters have several key elements in common:

- They are relatively unexpected, with little or no warning or opportunity to prepare.
- Available personnel and emergency services may be overwhelmed initially by demands for their services.
- Lives, health, and the environment are endangered.

In the immediate aftermath of a disaster, needs are often greater than professional emergency services personnel can provide. In these instances, trained volunteers become a vital link in the emergency service chain.

Understanding Local Hazard Vulnerability

Assessing your community's vulnerability to hazards allows the community to prioritize preparedness measures and to target effective actions for the appropriate hazard. To assess your community's vulnerability to hazards, it is useful to:

- Identify the most common disasters that occur
- Identify possible hazards with most severe impact
- Consider recent and/or historical impacts
- Identify susceptible locations in the community for specific hazards: people, buildings, infrastructure
- Consider what to expect for disruption of services and length of restoration

Earthquakes

An earthquake is a sudden and violent shaking of the ground, sometimes causing great destruction, as a result of movements within the earth's crust or volcanic action. It is the release of stored energy in the Earth as one rock surface moves against another.

The moment magnitude scale (MMS) is used by seismologists to measure the size of

earthquakes. The scale was developed in the 1970s to succeed the 1930s-era Richter magnitude scale.

The Ring of Fire is a major area in the basin of the Pacific Ocean where a large number of earthquakes and volcanic eruptions occur. San Francisco is located on the Ring of Fire.

The San Andreas Fault and 6 other significant fault zones are present in the Bay Area: the Calaveras, Concord-Green Valley, Greenville, Hayward, Rodgers Creek, and San Gregorio Faults. In the last half of the 1800's, potentially damaging earthquakes (magnitude 6.0 or greater) occurred in the San Francisco Bay Area at an average rate of once every four years. However, seismicity rates dropped dramatically after the 1906 earthquake: scientists believe the large stress release of the 1906 earthquake also relieved stresses on faults throughout the Bay Area. Seismic activity was very low until the 1989 Loma Prieta (6.9 magnitude) earthquake. The level of seismic activity has not yet returned to that of the late 1800's, but as stresses continue to build scientists expect more frequent and stronger earthquakes in the future.[1]
A great resource for more information can be found at the Association for Bay Area Government's (ABAG) website. http://resilience.abag.ca.gov/earthquakes/

Fire after Earthquake

Fire has long been recognized as a major hazard following earthquakes. Before the 20th Century, earthquakes would often upset burning candles, lamps, stoves and fireplaces (with dangerous fuels common). Today in the US ruptured gas lines and arcing electrical wires are the most common sources of ignition. In addition to providing chances for ignition, earthquakes can block access to firefighting equipment, and damage fire-fighting water supplies, making fighting the blazes, of which there might be many across a city, especially challenging.

The most famous earthquake-initiated fires in US history burned much of the City of San Francisco in 1906. Up to 90% of building damage, after the earthquake, was attributed to the fires and the crude firefighting techniques employed in an effort to contain the blaze.[2]

Preparing your home and controlling utilities after earthquake can play an important role in decreasing the risk of fire after earthquake. (Mitigation will be covered in Unit 1 and utility control is in Unit 2).

[1] Source: USGS.GOV Website

[2] https://pnsn.org/outreach/earthquakehazards/fire

DURING AN EMERGENCY

Protective Actions

Because many disasters occur with little or no warning, individuals need to have the knowledge and skills to take immediate protective actions in the first critical moments after a disaster has occurred, before you have instruction from authorities. While the specific action to take is based on the disaster type, the amount of warning, whether you are inside, outside, or driving, and the amount of training you have, the following list provides a good overview of the protective actions you should be familiar with. These should be your objectives in assessing your post-event environment.

- Assess situation. When something occurs without notice, take a few seconds to assess the situation to determine the most effective next steps. Identify the type of event and whether air or a building structure has been compromised.
    - Decide to stay or change locations. In some instances you should stay where you are (if you are inside and an event has occurred outside, you may need to stay inside) and in other circumstances you should change location (if you are inside and the event is inside, you may need to evacuate the building). All disasters have unique attributes, so it is important for you to realize that you need to evaluate the circumstances to determine the best course of action.
- Staying or changing location is a critical early decision in disasters. If you are not in immediate danger, you should stay where you are and get more information before taking your next steps. Thinking through the likely hazards in your community and where you might be when an event occurs may help you visualize your response. While you may need to make the first, immediate decision to stay inside or go outside, or to shelter in place by sealing a room without authoritative instruction, it is important that you listen to local authorities when that information is provided. If experts tell you to evacuate from your location, LEAVE!
    - Seek clean air and protect breathing passages. Regardless of the type of disaster, clean air is a critical need. Actions to protect your breathing passages and seek clean air may include covering your mouth with a cloth or mask, vacating the building, or sheltering in place by sealing an internal room while the airborne contaminant dissipates.
- Protect yourself from debris and signal rescuers if trapped. Protecting yourself from falling or precarious debris is a critical protective action. If you become trapped, protect your airways, bang on an object, or blow a whistle. Yelling should be a last resort. Remove contaminants.
    - If contaminants have been released into the area or you have contacted liquid or solid contaminants, it is critical that you remove the contaminants as quickly as possible. Remove contaminated clothing and wash with soap and water starting at the head and working toward the feet.
- Practice good hygiene. Good hygiene is a preventive measure for spreading disease, and it’s important to be mindful of hygiene in a post-disaster environment. Clean drinking water and sanitation are important protective actions

What to Do During an Earthquake[3]

If You Are Inside A Building:

- Drop down onto your hands and knees so the earthquake doesn't knock you down. Drop to the ground (before the earthquake drops you!)
- Cover your head and neck with your arms to protect yourself from falling debris.
- If you are in danger from falling objects, and you can move safely, crawl for additional cover under a sturdy desk or table.
- If no sturdy shelter is nearby, crawl away from windows, next to an interior wall. Stay away from glass, windows, outside doors and walls, and anything that could fall, such as light fixtures or furniture.
- Hold on to any sturdy covering so you can move with it until the shaking stops.
- Stay where you are until the shaking stops. Do not run outside. Do not get in a doorway as this does not provide protection from falling or flying objects, and you may not be able to remain standing.
- If getting safely to the floor to take cover won't be possible:
- If getting safely to the floor will be difficult, actions before an earthquake to secure or remove items that can fall or become projectiles should be a priority to create spaces.
- Identify an away from windows and objects that could fall on you. The Earthquake Country Alliance advises getting as low as possible to the floor. People who use wheelchairs or other mobility devices should lock their wheels, bend over, and remain seated until the shaking stops. Protect your head and neck with your arms, a pillow, a book, or whatever is available.
- Studies of injuries and deaths caused by earthquakes over the last several decades show that you are much more likely to be injured by falling or flying objects (TVs, lamps, glass, bookcases, etc.) than to die in a collapsed building. "Drop, Cover, and Hold On" (as described above) will protect you from most of these injuries.

If You Are in Bed When You Feel the Shaking:

- If you are in bed: Stay in bed and Cover your head and neck with a pillow. At night, hazards and debris are difficult to see and avoid; attempts to move in the dark result in more injuries than remaining in bed.

If You Are Outside When You Feel the Shaking:

- If you are outdoors when the shaking starts, move away from buildings, streetlights, and utility wires. Once in the open, "Drop, Cover, and Hold On." Stay there until the shaking stops.

If You Are in A Moving Vehicle When You Feel the Shaking:

- It is difficult to control a vehicle during the shaking. If you are in a moving vehicle, stop as quickly and safely as possible and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires. Proceed cautiously after the shaking. Avoid roads, bridges, or ramps that the earthquake may have damaged.

[3] https://www.ready.gov/earthquakes

IMPACT ON INFRASTRUCTURE

Examples of Possible Impact from Damage to Infrastructure

Damage to . . .	Possible Effects
Transportation	Inability to assess damage accurately
	Ambulances prevented from reaching survivors
	Police prevented from reaching areas of civil unrest
	Fire departments prevented from getting to fires
	Flow of needed supplies (food, water, etc.) is interrupted
	Roads are closed and/or impassable
Structures	Damaged critical facilities (e.g., hospitals, fire stations, police precincts, airports) unable to function normally
	Increased risk of damage from falling debris
Communication Systems	Survivors unable to call for help
	Coordination of services is hampered
	Families and friends cannot communicate
Utilities	Loss of service
	Increased risk of fire or electrical shock
	Limited access to fuel, e.g., pumps that may not work
	Loss of contact between survivors and service providers
Water Service	Medical facilities hampered
	Inadequate water flow, which results in notice to boil water and hampered firefighting capabilities
	Increased risk to public health
Fuel Supplies	Increased risk of fire or explosion from fuel line rupture
	Risk of asphyxiation
Financial Services	ATM machines do not work
	Credit card systems inoperable

Results of Damage to the Infrastructure

Each instance of damage to the infrastructure may severely restrict the abilities of police, fire, and emergency medical services in that disaster.

Because emergency services personnel are likely to have inadequate resources to meet the public's needs, those resources must be applied according to the highest-priority need.

- Police will address incidences of grave public safety.
- Firefighters will suppress major fires and conduct technical rescue.
- Fire EMS personnel will handle life-threatening injuries. You should be aware, however, that NERTs will also handle life-threatening injuries until EMS units become available.

Lower -priority needs will have to be met in other ways.

Hazards Related to Structure Type

It is important to know what type of damage to expect from the main types of structures in the community. Engineered buildings, such as most high-rise buildings, have performed well in most types of disasters. During earthquakes and high-wind events (e.g., tornadoes, hurricanes), older high-rise buildings, however, are more susceptible to damage from:

- Broken glass
- Falling panels
- Collapsing walkways and stairways

Cantilever Effect: This collapse occurs when one or more walls have failed, and the other end of the floor is still attached to the other bearing wall. Voids will be sporadic throughout the debris.

Pancake Effect: Destruction of the load bearing walls will cause the floor supports to fail, dropping the floors and the roof on top of each other. Voids will be created between the floors, where there is debris allowing for spacing between floors

Keep in mind that age, type of construction, and type of disaster are major factors in potential damage to detached homes and garages. (Building structures and types will be covered in session 4).

Utility shutoffs may need to be addressed. (Utility control will be covered in Unit 2 of the training.)

Local Alerts & Warning Systems

Outdoor Public Warning System (OPWS)

The City's Outdoor Public Warning System is designed to alert residents and visitors of San Francisco about possible danger. Specific emergency announcements can be broadcast over any (or more) of the 109 sirens which are located on poles and on top of buildings throughout all neighborhoods in San Francisco, Treasure Island, and Yerba Buena. As of December 2019, the system is shut down for an upgrade that may take up to two years.

> Here is a link to more information about the siren shutdown:
> https://sfdem.org/sirenshutdown

Emergency Alerting System (EAS)

The Emergency Alert System (EAS) is a national public warning system that requires broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service (SDARS) providers, and direct broadcast satellite (DBS) providers to provide the communications capability to the President to address the American public during a national emergency. The system also may be used by state and local authorities to deliver important emergency information, such as AMBER alerts and weather information targeted to specific areas. Messages are preceded by a high-pitched alert tone.

ALERTSF.ORG

AlertSF is a text-based notification system for San Francisco. AlertSF will send alerts regarding emergencies disrupting vehicular/pedestrian traffic, watches and warnings for tsunamis, flooding, and Citywide post-disaster information to your registered wireless devices and email accounts.

You will receive time-sensitive messages wherever you specify, such as your home, mobile or business phones, email address, text messages and more. You pick where, you pick how. Visit the website www.alertsf.org to register or text alertsf to 888777 on cellular phone.

Other Emergencies

Tsunami

A tsunami or tidal wave, also known as a seismic sea wave, is a **series of waves** in a water body caused by the displacement of a large volume of water, generally in an ocean or a large lake. Earthquakes, volcanic eruptions and other underwater explosions (including detonations of underwater nuclear devices), landslides, meteorite impacts and other disturbances above or below water all have the potential to generate a tsunami. Unlike normal ocean waves, a tsunami is generated by the displacement of water.

Local Tsunami

This is a tsunami where its destructive effects are experienced on coasts within 100 km (62 miles) from the source of the tsunami. In such cases, the travel time for the tsunami is generally less than one hour. A local tsunami is usually generated by an earthquake but can also be caused by a landslide or a pyroclastic flow from a volcanic eruption.

Locally generated tsunamis are especially dangerous. This type of tsunami may reach a nearby shore in less than ten minutes. In such cases, there is not sufficient time for a Tsunami Warning Center or for local authorities to issue an official tsunami warning. Coastal residents and users should therefore take life-saving action as indicated on the sign based on the shaking of the ground, which is a warning that a tsunami may be imminent. The type of earthquakes generated locally make this unlikely but not impossible.

Regional Tsunami

A tsunami capable of destruction in a area which lies between 100 km - 1,000 km (62-620 miles) from the source of the tsunami. Regional tsunamis can take between 1-3 hours to reach the affected shoreline. The most destructive tsunamis can be local or regional.

Distant Tsunami

Also referred to as a tele-tsunami or ocean-wide tsunami, distant tsunamis originate from a faraway source, more than 1000 km (620 miles) and generally take more than 3 hours to arrive at affected coasts.

When a tsunami is formed, the waves generally radiate and move in opposite directions. In this case, a local tsunami can impact on coastlines which are close to the tsunami source. The waves which are moving in other directions away from the source of the tsunami, can continue to travel across entire ocean basins as distant tsunamis with sufficient energy to cause additional casualties and destruction on far away shores.

These types of tsunamis allow more time for the Warning Centre to collect data and issue precise bulletins, and for local officials to communicate warning information and alert the vulnerable populations.

Inundation zones[4]
Inundation zones in San Francisco include Ocean Beach, the Marina Green, the Embarcadero and part of Bayview.

What to do
There are two types of tsunami warnings: official and natural. Both are important. You may not get both. Respond immediately to whichever you receive first.

- Stay out of the water and away from beaches and waterways.
- Follow evacuation signs or go as high or far inland (away from the water) as possible.
- Get more information from radio, television, or your mobile device (text or data).

Natural Tsunami Warning

- A strong or long earthquake
- A loud roar (like a train or an airplane) from the ocean
- Unusual ocean behavior. The ocean could look like a fast-rising flood or a wall of water or it could drain away suddenly like a very low, low tide.

Official Tsunami Warning and Alert levels[5]
Official tsunami warnings are broadcast through radio, television, and wireless emergency alerts. They may also come through outdoor sirens, officials, text message alerts, and telephone notifications.

- **Tsunami Warning** – A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours. GET TO HIGH GROUND.

- **Tsunami Advisory** – A tsunami advisory is issued when a tsunami with the potential to generate strong currents or waves dangerous to those in or very near the water is imminent, expected, or occurring. The threat may continue for several hours after initial arrival, but significant inundation is not expected for areas under an advisory. STAY OUT OF WATER AND AWAY FROM BEACHES.

- **Tsunami Watch** – A tsunami watch is issued when a tsunami may later impact the watch area. The watch may be upgraded to a warning or advisory or canceled based on updated information and analysis. Emergency management officials and the public should prepare to act. STAY TUNED FOR MORE INFORMATION AND BE PREPARED TO ACT

- **Tsunami Information Statement** – A tsunami information statement is issued when an earthquake or tsunami has occurred of interest to the message recipients. In most cases, information statements are issued to indicate there is no threat of a destructive basin-wide tsunami and to prevent unnecessary evacuations.

[4] http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/SanFrancisco
[5] National Weather Service https://www.tsunami.gov/?page=message_definitions

Power Outage

Safety Tips[6]:

- Only use flashlights or lanterns for emergency lighting, candles can cause fires.
- Keep refrigerator and freezer doors closed. Most food requiring refrigeration can be kept safely in a closed refrigerator for several hours. An unopened refrigerator will keep food cold for about 4 hours. A full freezer will keep the temperature for about 48 hours. Throw away any food that has been exposed to temperatures 40° F (4° C) for 2 hours or more or that has an unusual odor, color or texture. When in doubt, throw it out!
- Take steps to remain cool if it is hot outside. In intense heat when the power may be off for a long time, consider going to a movie theater, shopping mall or "cooling shelter" that may be open in your community. If you remain at home, move to the lowest level of your home, since cool air falls. Wear lightweight, light-colored clothing. Drink plenty of water, even if you do not feel thirsty.
- Put on layers of warm clothing if it is cold outside. Never burn charcoal for heating or cooking indoors. Never use your oven as a source of heat. If the power may be out for a prolonged period, plan to go to another location (the home of a relative or friend, or a public facility) that has heat to keep warm.
- Turn off or disconnect appliances and other equipment in case of a power "surge" that can damage computers and other devices. Consider adding surge protectors.
- If you are considering purchasing a generator for your home, consult an electrician or engineer before purchasing and installing.
- Only use generators away from your home and NEVER run a generator inside a home or garage or connect it to your home's electrical system.

Storms and Flooding

Safety Tips

- Turn Around, Don't Drown! ®
- Avoid walking or driving through flood waters.
- Do not drive over bridges that are over fast-moving floodwaters. Floodwaters can scour foundation material from around the footings and make the bridge unstable.
- Just 6 inches of moving water can knock you down, and one foot of moving water can sweep your vehicle away.
- If there is a chance of flash flooding, move immediately to higher ground.
- If floodwaters rise around your car but the water is not moving, abandon the car and move to higher ground. Do not leave the car and enter moving water.
- Return home only when authorities say it is safe.
- Be aware of areas where floodwaters have receded and watch out for debris.
- Avoid standing water as it may be electrically charged from underground or downed power lines.
- Avoid contact with flood water as it may contain sewage and other contaminates.

[6] https://www.ready.gov/power-outages

Home and Workplace Preparedness

FEMA conducts a national household survey to measure the public's attitudes, perceptions, and actions taken for personal preparedness. Research findings provide some interesting insights on public expectations and beliefs. Data for the 2009 survey include:

- Only 50% of the public is familiar with the alerts and warning systems in their community.
- Importance of family and community members in the first 72 hours of a disaster: 70% of people report an expectation to rely on household members, and 49% say they will rely on people in their neighborhood.
- Nearly 30% indicate that a primary reason they have not taken steps to prepare is the expectation that fire, police, or other emergency personnel will help them.
- Only 40% of people nationwide think there is a likelihood of a natural disaster ever occurring in their community.
- Fifty-three percent indicate confidence in ability to respond in the first 5 minutes of a sudden natural disaster, but only 20% report confidence in ability to respond to a terrorist attack.
- Preparedness differs according to age, education, income, language and culture, disabilities and abilities, experience, and other factors.

Preparing for a Disaster

Many preparedness actions are useful in any type of emergency, and some are specific to a particular type of disaster. A critical first step to preparedness is to understand the hazards in your community and to learn about local alerts and warning systems, evacuation routes, and sheltering plans. It is also important to familiarize yourself with hazards in other areas when you are traveling and may experience a type of hazard you are not as familiar with.

Regardless of the type of disaster, important elements of disaster preparedness include:

- Having the skills to evaluate the situation quickly and to take effective action to protect yourself
- Having a family disaster plan and practicing the plan with drills
- Assembling supplies in multiple locations
- Reducing the impact of hazards through mitigation practices
- Getting involved by participating in training and volunteer programs

It is also always important to address specific needs for yourself and people you know, including any access or functional needs, considerations for pets and service animals, and transportation.

More information on preparedness is available online.

Web Resources

URL	Description
www.ready.gov/	FEMA's national Web site for disaster preparedness. Excellent general advice and a good place to start.
https://www.fema.gov/pdf/areyouready/areyouready_full.pdf	*Are You Ready?* is a 200-page FEMA publication that provides a step-by-step approach to disaster preparedness and specific information by disaster type.
www.pandemicflu.gov	The Centers for Disease Control and Prevention (CDC) established this Web site as a hub for national information on pandemic influenza.
https://www.sf72.org/	SF72 is SF's website for emergency preparedness. You'll find information about what to do in an emergency, simple steps to get connected, and useful guides to help you get prepared.

Developing a Disaster Plan

In addition to knowing immediate protective actions that you may need to take; an emergency plan can mean the difference between life and death in a disaster. For example:

- Where will you meet family members? You should have a location outside the house and another location outside the neighborhood.
- Identify an out-of-state "check-in contact."
- Plan for all possibilities: extended stay, shelter-in-place, or evacuation.
- How will you escape buildings where you spend time: your home, workplace, school, place of worship?
- What route (and several alternatives) will you use to evacuate? Do you have transportation?

Family safety is the most important factor when disaster strikes. To make the best decision regarding your family's safety, you should always first consider what is best given the situation. It is also essential that you practice your plan with your family — evacuating the home and contacting all family members using your "check-in contact." Practicing your plan now will improve your performance when it matters most.

To Get Started.

- **Meet with your family.**
  - Discuss the types of disasters that could occur.
  - Explain how to prepare and respond.
  - Discuss what to do if advised to evacuate.
  - Practice what you have discussed.
- **Plan how your family will stay in contact if separated by disaster.**
  - Pick two meeting places:
    - A location a safe distance from your home in case of fire
    - A place outside your neighborhood in case you can't return home
- **Choose an out-of-State friend as a "check-in contact" for everyone to call.**
    - Make sure that the person selected understands that they are your out-of- State contact in case of emergency and what you would expect of them should such an emergency arise.
    - Give your "check-in contact" person a list of pertinent people to contact. Be sure to include phone numbers!
    - Periodically practice using your local and out-of-State contacts as if it were an emergency.
- **Complete the following steps.**
  - Post emergency telephone numbers by every phone.
  - Show responsible family members how and when to shut off water, gas, and electricity at main switches.
  - Install a smoke alarm on each level of your home, especially near bedrooms; test

them monthly and change the batteries two times each year. (For older models, change batteries when you change your clocks in the spring and fall.)

- **Meet with your neighbors and network.**
  - Plan how the neighborhood could work together after a disaster. Know your neighbors' skills (medical, technical).
  - Consider how you could help neighbors who have special needs, such as elderly or disabled persons.
  - Make plans for childcare in case parents can't get home.
  - Talk to your child's school. Learn their plans.

In Case of Emergency…Activate Plan

- Text or call your "check-in"
- Update your status on social media
- Update your outgoing Voicemail to reflect your current status
- Go to your meeting place if needed

Create an Escape Plan

1. Draw a floor plan of your home. ...
2. Include all possible emergency exits. ...
3. Mark two ways out of every room. ...
4. Identify anyone who needs help to escape...
5. Choose a meeting place outside. ...
6. Instruct your family/roommates to call the fire department from a neighbor's home.

Home Activity: Evacuate!

Escape Planning

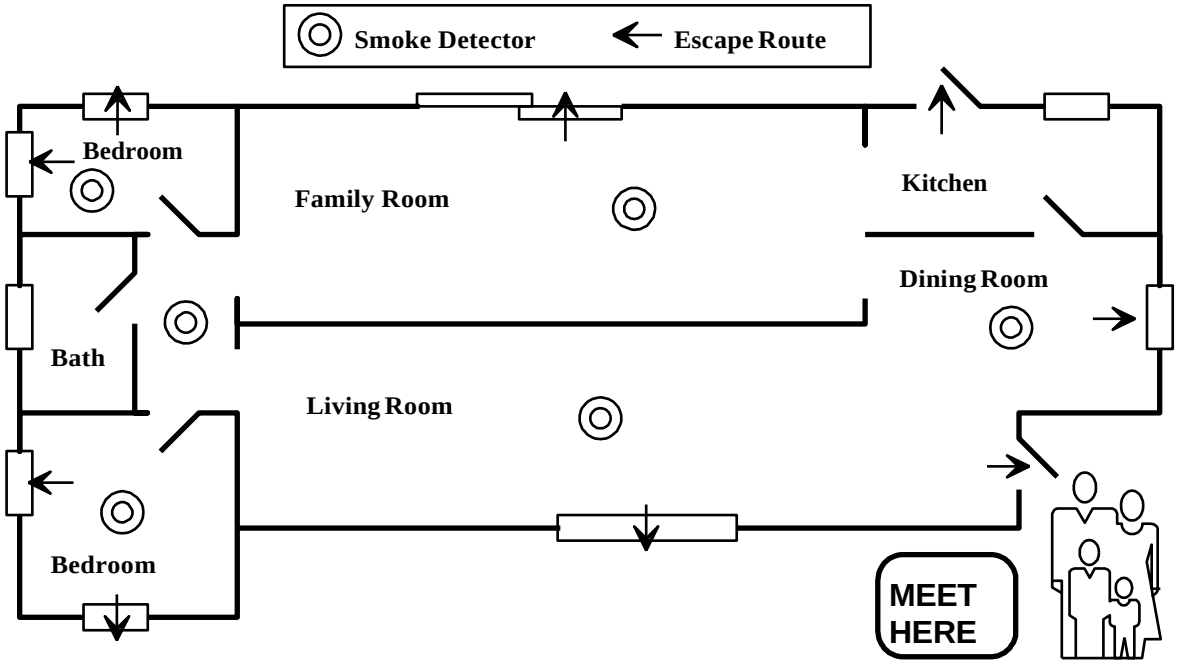
Develop an escape plan that provides for escape from every room:

- Consider the needs of children and individuals with disabilities.
- Inform all family members or office coworkers of the plan.
- Run practice escape drills.

Practice your plans:

- Conduct family fire drills.
- Follow the local evacuation routes

Escape Plan



Sample family escape plan with arrows showing an escape route from every room in the home and a family meeting place outside the home

It is important to have an escape plan that:

- Includes escape from every room of the house or every area of the workplace
- Considers the needs of children and individuals with disabilities

In most cases, homeowners won't have smoke alarms in every room, but it is important to have a smoke alarm at least on every level of the house.

Review Your Plan

Nothing ever stays the same. That's why it's important to take time to update your personal Emergency Preparedness Plan at least every year. You never know when an emergency will occur. An up-to-date plan will make sure you and those you care about will be able to take quick action to keep everyone as safe as possible.

Carefully review your plan. Think about changes in your residence, children's' school, staff, job, out-of-state contact's situation, etc. All these can affect your plan. Update as needed.

Assembling and Storing Disaster Supplies

You can cope best by preparing for disaster before it strikes. One way to prepare is to assemble disaster supplies in multiple locations. After disaster strikes, you won't have time to shop or search for supplies. But if you've gathered supplies in advance, you and your family can endure an evacuation or home confinement.

Storing your Supplies

Since you do not know where you will be when an emergency occurs, prepare supplies for home, work and vehicles.

- Home: Keep this kit in a designated place and have it ready in case you have to leave your home quickly. Make sure all family members know where the kit is kept.
- Work: Be prepared to shelter at work for at least 24 hours. Your work kit should include food, water and other necessities like medicines, as well as comfortable walking shoes, stored in a "grab and go" case.
- Vehicle: In case you are stranded, keep a kit of emergency supplies in your car.

To Prepare Your Kit

1. Review the checklist on the next few pages.
2. Gather the supplies from the list. Remember that many households already have many of the items needed for your kits. These items can be assembled in appropriate locations for quick access in an emergency but used under normal circumstances whenever needed. For example, keep a wrench in your kit to shut off gas at the meter in an emergency, but use the wrench for everyday tasks, too. Just be sure to return it to the emergency kit.
3. Place the supplies you're apt to need for an evacuation in an easy-to-carry container aka a GO-Bag. These supplies are listed with an asterisk (*).

WATER

To fill your own bottles, store water in plastic containers such as soft drink bottles.

- Look for the triangular recycling symbol with a number 1 on the bottom of the bottle as those are best for water storage. Avoid using containers that will decompose or break, such as plastic milk jugs or glass bottles.
- Wash the bottle with soap and warm water, fill with water from your tap, and store in a cool, dark area away from direct sunlight.
- Replace your emergency water every 6 months by repeating the process; like food and batteries, water does expire!

Keep in mind that a normally active person needs to drink at least 2 quarts of water each day. Hot environments and intense physical activity can double that requirement. Children, nursing mothers, and ill people will need more. If you purchase bottled water, there is an expiration date on the bottle to indicate when to replace the bottles.

- Store 1 gallon of water per person per day (2 quarts for drinking, 2 quarts for food preparation and sanitation). *
- Keep a 3-5-day supply of water for each person in your household.

If you have questions about the quality of the water, purify it before drinking. You can heat water to a rolling boil for 1 minute or use commercial purification tablets to purify the water. You can also use regular household liquid chlorine bleach if it is pure 5.25% sodium hypochlorite. (Do not use perfumed bleach!)

Ratios for Purifying Water with Bleach

Water Quantity	Bleach Added
1 Quart	2 Drops
1 Gallon	8 Drops
5 Gallons	1/2 Teaspoon

Note: If water is cloudy, double the recommended dosage of bleach.

After adding bleach, shake— or stir the water container and let it stand 30-60 minutes before drinking.

Food

- Store a 3-5-day supply of nonperishable food. Select foods that require no refrigeration, preparation, or cooking and little or no water. If you must heat food, pack a can of Sterno®. Select food items that are compact and lightweight. Avoid salty foods if possible as they increase thirst. Include a selection of the following foods in your disaster supply kit. Check food and water expiration dates twice a year. Rotation is key to avoiding spoils so choose foods you will eat or can donate to a local food drive. Ready-to-eat canned meats, fruits, and vegetables
- Canned juices, milk, soup (if powdered, store extra water)
- Staples— sugar, salt, pepper
- High-energy foods— peanut butter, jelly, crackers, granola/protein bars*, trail mix*
- Foods for infants, elderly persons, or persons on special diets
- Comfort and stress foods— cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags

Kitchen Items

- Manual can opener
- Mess kits or paper cups, plates, and plastic utensils
- All-purpose knife
- Household liquid bleach to treat drinking water
- Aluminum foil and plastic wrap
- Re-sealing plastic bags
- If food must be cooked, small cooking stove (to be used OUTSIDE) and a can of cooking fuel

First Aid Kit*

Assemble a first aid kit for your home and one for each car. (Note: This kit is not intended to supplement or replace a NERT member responder supply kit!) A first aid kit should include:

- First aid manual
- Sterile adhesive bandages in assorted sizes
- Two-inch sterile gauze pads (4-6)
- Four-inch sterile gauze pads (4-6)
- Hypoallergenic adhesive tape
- Triangular bandages (3)
- Needle
- Moistened towelettes
- Antibacterial ointment
- Thermometer
- Tongue blades (2)
-
- Tube of petroleum jelly or other lubricant
- Assorted sizes of safety pins
- Cleaning agent/soap
- Non-latex exam gloves (2 pairs)
- Cotton balls
- Sunscreen
- Three-inch sterile roller bandages (3 rolls)
- Four-inch sterile roller bandages (3 rolls)
- Scissors
- Tweezers
- Hot and cold compress
- Nonprescription Drugs
- Aspirin or non-aspirin pain reliever
- Antidiarrhea medication
- Antacid (for stomach upset)
- Allergy medication and if necessary, epinephrine
- Laxative
- Vitamins
- Activated charcoal (used if advised by the Poison Control Center

Tools and Supplies

- Emergency preparedness manual*
- Battery-operated weather radio and extra batteries*
- Flashlight and extra batteries*
- Fire extinguisher: small canister, ABC type
- Tube tent
- Pliers
- Duct tape
- Compass*
- Matches in a waterproof container
- Plastic storage containers
- Signal flare(s)*
- Paper, pencil*
- Needles, thread
- Work gloves
- Medicine dropper
- Non-sparking shutoff wrench to turn off household gas and water
- Whistle
- Plastic sheeting
- Landline telephone
- Fuel for vehicle and generator

Sanitation

- Toilet paper, towelettes*
- Soap, liquid detergent*
- Feminine supplies*
- Personal hygiene items*
- Plastic garbage bags, ties (for personal sanitation uses)
- Plastic bucket with tight lid
- Disinfectant
- Liquid hand sanitizer
- Household chlorine bleach

Pet Supplies

- Medications and medical records (stored in a waterproof container) and a first aid kit
- Current photos of your pets in case they get lost
- Information on feeding schedules, medical conditions, behavior problems, and the name and number of your veterinarian in case you must foster or board your pets
- Sturdy leashes, harnesses, and/or carriers to transport pets safely and ensure that your animals can't escape
- Food, potable water, bowls, cat litter and pan, and can opener
- Pet beds and toys, if easily transportable

Clothing and Bedding

Include at least one complete change of clothing and footwear per person (and remember to change for the different seasons!).

- Sturdy shoes or boots*
- Rain gear*
- Blankets or sleeping bags*
- Hat and gloves*
- Thermal underwear*
- Sunglasses*

Household Documents and Contact Numbers*

- Personal identification, cash (including change) or traveler's checks, and a credit card
- Copies of important documents:
  - birth certificate, marriage license
  - driver's license
  - Social Security card, Passport
  - wills, deeds
  - inventory of household goods, insurance papers
  - contracts, bank and credit card account numbers, stocks/bonds.
  - immunization records

  Be sure to store these in a watertight container.
- Emergency contact list and other important phone numbers
- Map of the area and phone numbers of places you could go
- An extra set of car keys and house keys
- Copies of prescriptions and/or original prescription bottles

Special Items

Remember family members with special needs, such as infants and elderly or those with disabilities.

For Baby*

- Formula
- Diapers
- Bottles
- Powdered milk
- Medications

For All Family Members

- Heart and high blood pressure medication*
- Insulin*
- Other prescription drugs*
- Denture needs*
- Contact lenses and supplies*
- Extra eyeglasses*
- Entertainment - games and books
- Cash in small bills
- Keep gas tank half full

*Items marked with an asterisk are recommended for evacuation.

Commodity Points of Distribution

A Point of Distribution or POD is where the public goes to pick up emergency supplies following a disaster. The need for a POD is based on lack of infrastructure to support normal distribution of food, water, or other supplies.

A POD should accommodate vehicle, pedestrian, mass transit traffic, or a combination of all three. You should plan for how you will get to a POD and then how you will carry items you may receive.

Reducing the Impact of Hazards Through Mitigation

In addition to managing the impact that a disaster would have on you and your family by assembling disaster supplies, mitigation will also help. Mitigation is the reduction of loss of life and property by lessening the impact of disasters. Mitigation includes any activities that prevent an emergency, reduce the likelihood of occurrence, or reduce the damaging effects of unavoidable hazards. Mitigation can include structural changes, non-structural measures, and purchasing appropriate insurance.

Structural Hazards

HAZARDS FROM HOME FIXTURES

Some of the hazards include:

- Gas line ruptures from water heaters or ranges displaced by shaking, water, or wind
- Damage from falling books, dishes, or other cabinet contents
- Risk of injury or electric shock from displaced appliances and office equipment
- Fire from faulty wiring, overloaded plugs, frayed electrical cords

It is also important to know how and when to turn off utilities safely. (Utility shutoffs will be covered in Unit 2).

STRUCTURAL CHANGES

Some mitigation measures require a bigger investment to address structural changes to reduce the impact of disasters. Depending on the likely hazards in your area, these may include:

- Bolt house to foundations.
- Install plywood
- Strap mobile homes to their slabs.
- Raise utilities (above the level of flood risk).
- Build a safe room*.

You can learn more about San Francisco's retrofit ordinances and support from the Earthquake Safety Implementation Program (ESIO) http://sfgov.org/esip/ managed by the Office of Recovery and Capital Planning. Phone: (415) 554-4925.

*See sheltering section page 1-31

Non-structural Mitigation

Non-structural hazard mitigation includes relatively simple actions you can take to

prevent home furnishings and appliances from causing damage or injuries during any event that might cause them to shift. Use **'Earthquake Eyes'** to identify non-structural hazards in your surroundings.

In addition to structural hazards, everyone has non-structural hazards in their neighborhood, homes, or workplaces. Fixtures and items within a home, garage, or workplace can pose a hazard during or after a disaster. Reducing hazards is an important part of personal preparedness.

Examples of non-structural hazard mitigation include:

- Anchor heavy furniture.
- Secure appliances and office equipment.
- Install hurricane storm shutters.
- Secure cabinet doors with childproof fasteners.
- Locate and label gas, electricity, and water shutoffs.
- Secure water heaters and have flexible gas lines installed.

Personal Insurance

You should ensure your homeowner's/renter's policy provides adequate coverage and covers appropriate hazards in your area. In addition, homeowner's insurance does not automatically cover damage caused by flooding or earthquake, so it is important to know your risks.

Visit the National Flood Insurance Program website, www.floodsmart.gov, and/or the California Earthquake Authority website, https://www.earthquakeauthority.com/, to learn more. Then consult with your Insurance Agent.

FORTIFYING YOUR HOME

Type of Hazard	Sample Precautions
Structural	– Bolt older houses to the foundation. – Install trusses or hurricane straps to reinforce the roof. – Strap propane tanks and chimneys. – Strap mobile homes to their concrete pads. – Raise utilities (above the level of flood risk). – Ask a professional to check the foundation, roof connectors, chimney, etc.
Non-Structural	– Anchor such furniture as bookshelves, hutches, and grandfather clocks to the wall. – Secure appliances and office equipment in place with industrial-strength Velcro®. – Install hurricane storm shutters to protect windows. – Secure cabinet doors with childproof fasteners. – Locate and label shutoffs for gas, electricity, and water before disasters occur. After a disaster, shut off the utilities as needed to prevent fires and other risks. Store a non-sparking shutoff wrench where it will be immediately available. – Teach all home occupants, including children who are old enough to handle the responsibility, when and how to shut off the important utilities. – Secure water heaters to the wall to safeguard against a ruptured gas line or loose electrical wires.

Remember that different non-structural hazards pose different threats, depending on the disaster. A few examples are provided below. For more information: “Learn about the Different Types of Disasters and Hazards” at www.fema.gov/hazard/index.shtm

SHELTERING

There are different types of sheltering, and different types are appropriate for different disasters.

Shelter in place

Sealing a room. Sealing a room is a way to protect yourself from contaminants in the air for a short period of time until the contaminants dissipate. You should identify an internal room in your home, at work, or other locations where you spend a great deal of time. If sheltering-in-place is needed, you will be in this room for only a few hours, but it is important that you be able to seal the room quickly. Storing specific items in the room is helpful. You should have snacks and water; a battery-operated radio, a flashlight, and pre-cut plastic sheeting and duct tape to seal off vents and door and window openings.

Shelter for extended stay

Sheltering for an extended stay means that you would stay where you are for several days or, in the case of a pandemic, you may be asked to limit your time outside the home for up to 2 weeks. It is important to store emergency supplies for these possibilities.

'Safe Enough to Stay' is an initiative developed in a partnership between the Department of Building Inspection (DBI) and the San Francisco Bay Area Planning and Urban Research Association (SPUR) to temporarily alter building codes for damage due to widespread disaster that results in massive displacement. It is recommended that you take steps now to ensure that, after a major earthquake, you can "stay in place" — i.e., stay in your own homes while it is being repaired. See more at https://bit.ly/2hXa1fU.

Mass care/community shelter

These are congregate care facilities that house many people in one location. These shelters often provide water, food, medicine, and basic sanitary facilities but, if possible, you should take your 3-day disaster supplies kit (go-bag) with you so that you will be sure to have the supplies you require.

Safe Room

Please note, a safe room is NOT the same as a shelter-in-place location. A safe room requires significant fortification in order for the room to provide protection against extremely high winds. More information is available at www.fema.gov/plan/prevent/saferoom/index.shtm

Animals[7]

While fulfilling your duties as a NERT member, be aware that pet owner/guardians may put themselves in danger when faced with an emergency that could affect their animals. These pet owner/guardians may not be willing to comply with orders or requests until they know that their pet issues can be resolved. Our experience has shown that many people treat their pets as members of their family and will not evacuate without them.

BEFORE DISASTER STRIKES

IDENTIFY YOUR PET

- Keep your pet's license current.
- Make sure that collar and identification tags are worn at all times.
- Consider having a safe, permanent microchip implanted in your pet. This type of ID cannot fall off or be removed. Most veterinarians offer micro chipping services to their customers.
- Keep a photo of your pet in your personal go-kit.

CRATE TRAIN YOUR PET

Train your pet to enter his/her carrier or crate at your command. Try putting your pet's favorite treat in his/her carrier and sounding a bell at the same time. Repeat this process every day, until your pet comes running at the sound of the bell. Continue this routine often enough to keep it fresh in your pet's mind. This training will be extremely helpful when locating a frightened animal. Also, make sure your pet is comfortable being handled.

PREPARE A FIRST AID KIT

Include any special medications prescribed by your veterinarian

SECURE BIRD CAGES AND AQUARIUMS

Because these items may move and/or break during a disaster; securing them on low stands or tables is advisable. Tighten the latch on your birdcage so that the door cannot be shaken or open easily.

CREATE A PET DISASTER KIT

A prepared disaster kit, kept in a safe and easily accessible place, will enable you to provide immediate care to your pet in an emergency. A calm, well-trained pet, which is either on leash, or in a carrier, will be more welcome wherever you go.

- Sturdy crate and/or pet carrier.

[7] Information provided in this section is from the San Francisco Animal Care & Control website

- Identification tags and collars and leashes.
- Food and water (a 7-day supply for each pet) and non-spill bowls.
- Litter box and litter.
- Manual can opener and plastic lid.
- Copy of your pet's vaccination history.
- Recent photos of each pet.
- Pet First-Aid book; Pet First-Aid kit.
- Phone number of your local animal shelter (**Animal Care and Control (415) 554-6364**
- Large plastic bags for pet cleanup

IN CASE OF DISASTER

EVACUATION

Red Cross shelters may not accept pets. Prepare a list of back up arrangements, such as homes of friends and family, hotels that allow pets, boarding facilities, veterinarians and/or shelters. ***It is generally not recommended that you leave your pet behind during an evacuation. If you must, follow these guidelines to help ensure your pet's safety.***

- Post a highly visible sign in a window to let rescue workers know who you left behind.
- Leave plenty of water in a large, open container that cannot be tipped over.
- Leave plenty of food in timed feeders (check local pet supply stores)
- Do not tie or cage your pet! The chances for survival are greater

IF YOUR PET IS LOST

Immediately call or visit the nearest animal shelter to report your missing pet.

When it is safe, return to your neighborhood to post or distribute "Lost Pet" posters. Be sure to include your name, home address phone number and a photo.

Continue to search the area for your pet. A frightened animal can stay hidden for days.

IF YOU FIND A LOST PET

Notify your local animal shelter as soon as possible. Be prepared to give a description of the animal. Include breed, color, and sex and the location where the animal was found. Remember that sick and/or injured animals can become unpredictable from fear and pain and should be handled only by professionals with proper equipment.

GET TRAINED, STAY INVOLVED!

Preparedness requires active participation from all.

- Start the process by talking to your friends and family about the hazards in your area and what steps you all need to take to be able to help each other in a crisis – large or small.
- Ask about emergency planning at your workplace, your schools, your place of worship, and other social settings.
- Take training to acquire the skills you need to help others and keep your skills current through refresher training and practice.
- Your continued participation in the NERT Program will provide training, practice, and the connection with others to develop teams.
- Plan also to participate in drills and exercises with your family and neighbors and at your workplace, school, place of worship, and community-organized events. The more you practice, the better prepared you will be to take effective action when a disaster happens.
- Talk to your friends and family about volunteering, too. Volunteering to help your community through NERT and other activities is a great experience to share!

NERT Disaster Response

As described earlier in this unit, NERTs respond in the period immediately after a disaster when professional response resources are overwhelmed or delayed.

NERTs assist emergency response personnel when requested in accordance with standard operating procedures developed by the sponsoring agency, the SFFD. Working as a team, members assume some of the same functions as emergency response personnel.

It was pointed out that, while NERTs are a valuable asset in emergency response, NERTs are not trained to perform all of the functions or respond to the same degree as professional responders. NERTs are a bridge to professional responders until they can arrive.

NERTs respond after a disaster by:

- Locating and turning off utilities, if safe to do so (Session 2)
- Extinguishing small fires (Session 2)
- Treating life-threatening injuries until professional assistance can be obtained (Session 3)
- Conducting light search and rescue operations (Session 4)
- Establishing a neighborhood command post to coordinate with the SFFD (Session 5)
- Helping disaster survivors cope with their emotional stressors (Session 5)

There is a distinction between how a NERT member responds to a disaster as an individual and how that member responds as part of a team.

A NERT member's first responsibility is personal and family safety. Only after personal and family safety is secured is it possible and pertinent to respond in a group capacity to do what is necessary for the community as a whole. (Session 1)

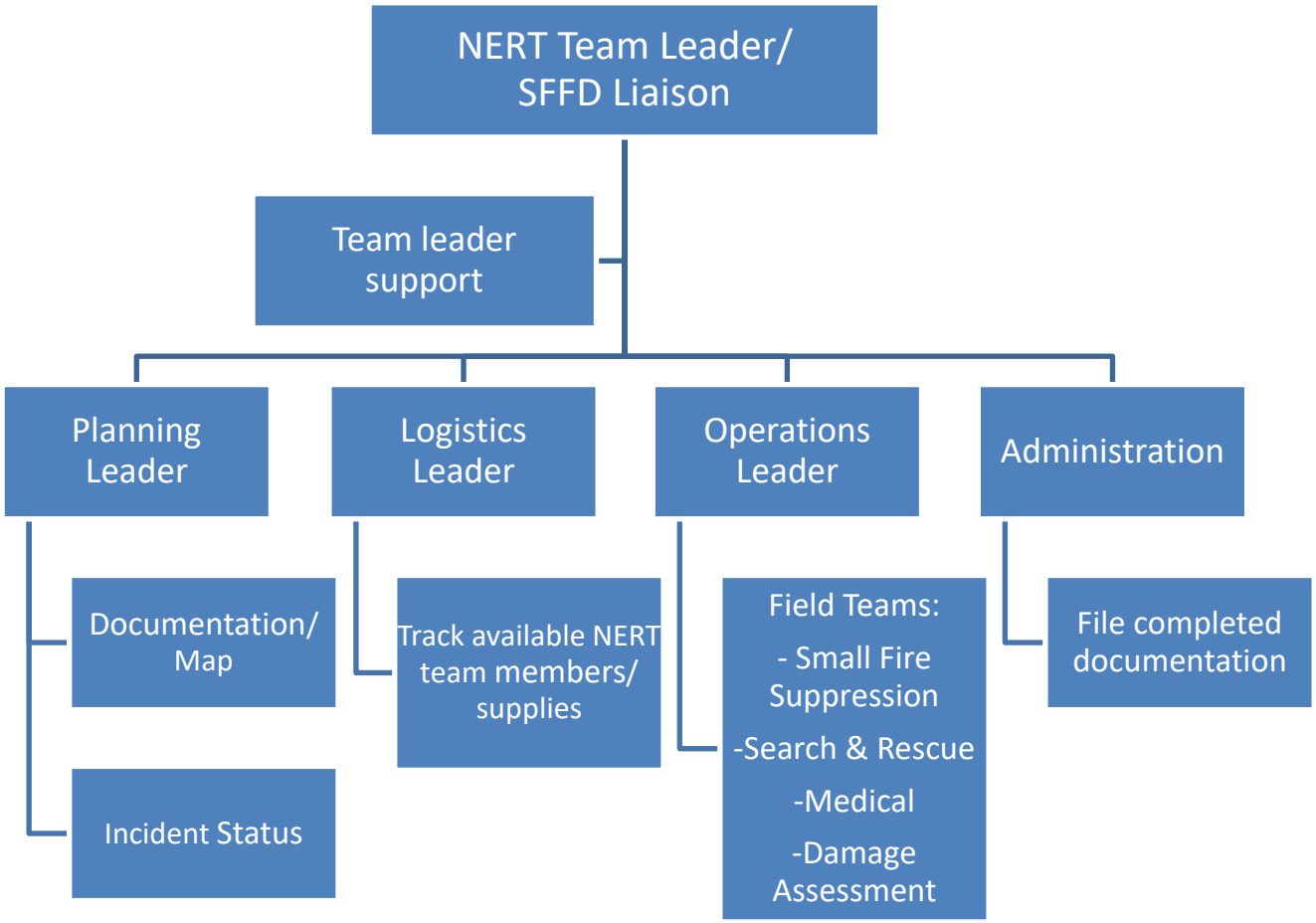
In the NERT response, the team members report to the pre-identified meeting location — or staging area – select a leader (and an alternate) and— to begin response in the event of disaster. NERT members gather to organize and receive tasking assignments. Runners may be identified to serve as a communication link between the staging area and the SFFD Battalion Fire Station or with NERT members working in the field. (Session 5)

In this way, NERT members can provide first for their own well-being and that of their family and, once appropriate, serve as part of the NERT responding to the disaster in the community.

In all instances, it is critical that NERT members stay within the limits of their training when providing disaster relief.

NERT NEIGHBORHOOD COMMAND POST ORGANIZATION

The chart below shows the basic NERT command structure. No matter which function NERT members are assigned to, effective NERTs require teamwork. NERT organization and team operations will be covered in detail in Session 5.



CERT/NERT IN ACTION

Across the country, CERTs continue to be activated in a wide range of disaster and emergency support operations. For these efforts, CERT members and teams are receiving Federal, State, and local recognition for their response assistance.

In 2016, NERT received a FEMA Individual and Community Preparedness Award at the White House in recognition of our partnership with you, the community, to get our City prepared.

For brief profiles of how CERTs have assisted in actual emergencies all over the country, you can find stories in past Newsletters on the FEMA site https://bit.ly/2I1ptoA

Pre-DISASTER ROLES

NERT trained residents are a valuable asset for the community before any disaster. You can volunteer with non-emergency projects and roles such as:

- Distributing preparedness materials to neighbors and telling them about NERT
- Staffing preparedness displays at health fairs, street fairs, and other special events
- Assisting with the installation of smoke alarms with the Red Cross
- Fundraising for projects that augment the existing NERT program
- Leading your neighborhood team or assisting a neighborhood coordinator
- Organizing your block to become disaster ready
- Identifying your neighbors who might need assistance during an emergency or disaster and keeping that list with your neighborhood team.
- Staying trained and ready. **Minimum training required is to recertify every two years by attending class 5 & 6**. In addition, NERT Training Day takes place on the third Saturday of every month.

ADDITIONAL TRAINING FOR NERTS

After completing basic NERT training, many NERT members seek to expand and improve their skills — through continuing training modules offered locally, courses offered through the American Red Cross, or programs from other sources.

SFFD and our partners offer the following training at no cost to NERT graduates unless indicated.

- Psychological First Aid for volunteer responders
- Drinking water post Disaster with the SF Public Utilities Commission (SFPUC)
- Gas and Electric Safety with Pacific Gas & Electric (PG&E)
- Ham Radio Licensing (for a fee)
- Ham Radio operation and emergency communication
- SF Police Department Auxiliary Law Enforcement Response Team (ALERT) with the SF Police Department
- American Heart Association CPR/First Aid (for a fee)
- Map Your Block – train to bring your neighbors together in preparedness

There are also Independent Study (IS) courses available online from the Federal Emergency Management Agency (FEMA) that will be of interest to NERT members. Some of these include:

- IS-100.a Introduction to Incident Command System
- IS-200.a ICS for Single Resources and Initial Action Incidents
- IS-700.a National Incident Management System (NIMS), An Introduction
- IS-800.b National Response Framework, An Introduction

For a complete listing and access to FEMA Independent Study courses, visit https://training.fema.gov/is/crslist.aspx

Unit Summary

- Personal preparedness should be tailored to the hazards in your community, and should include:
  - knowing community alerts, warnings, and plans
  - Developing household plans and conducting drills to practice
  - Assembling disaster supplies in multiple locations
  - Reducing hazards in the home
  - Encouraging others to prepare and volunteering to help your community
- Everyone in the community has the ability and responsibility to prepare for disasters.
- The keys to NERT effectiveness are in:
  - Familiarity with the types of events that are high risk for the area and the types of damage that can occur as a result
  - Adequate preparation for each event and its aftermath
  - Practice through refreshers and simulations
- CERTs across the US have proven themselves invaluable in the areas in which they were tested. They can be invaluable in this community as well.

HOMEWORK ASSIGNMENT

The next unit will cover fire safety, hazardous materials, utilities and terrorism awareness. Before the next session, you should:

1. Review the detailed information in Unit 1: Disaster Preparedness.
2. Read and familiarize yourself with Unit 2: fire safety, utility control, Hazardous material and Unit 8 in the Participant Manual
3. Discuss preparedness with family and friends
4. Make a communications plan, including an out-of-State “check-in contact”
5. Begin to assemble supplies in multiple locations
6. Examine your home for hazards and identify ways to prevent potential injury
7. Begin to read Chapter 6, NERT Organization.

UNIT 2: FIRE SAFETY, UTILITY CONTROL & HAZARDOUS MATERIAL

In this unit you will learn about:

- **SFFD:** Who we are, and our disaster limitations
- **Rescuer Safety:** Equipment and considerations for volunteer rescuers
- **Home Fire Safety tools:** How installing Fire and CO alarms and practicing escape plans saves lives
- **Fire Chemistry:** How fire occurs, classes of fire, and choosing the correct means to extinguish each type of fire.
- **Size-up and Fire Considerations:** How to conduct the continual data-gathering and evaluation process at the scene of a disaster or emergency**,** and apply it to evaluate fires, assess firefighting resources, and determine a course of action, including if you should attempt to extinguish a fire; how to approach and extinguish safely.
- **Portable Fire Extinguishers:** Types of portable fire extinguishers and how to operate them.
- **Utility Hazards and Control:** Utility hazards, signs of danger and methods to control shut offs.
- **Hazardous Materials:** How to identify potentially dangerous materials in storage, in transit, and in your home. Protective actions. Safe disposal.

INTRODUCTION AND UNIT OVERVIEW

During, and immediately following a severe emergency, the first priorities of professional fire services are life safety and extinguishing *major* fires.

They may be hampered by impassable roads, weather conditions, inadequate water supply, and other inadequate resources.

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Explain the role that NERTs play in fire safety.
- Identify and reduce potential fire and utility risks in the home and workplace.
- Describe the 9-step NERT size up process.
- Conduct a basic size up for a fire emergency.
- Explain minimum safety precautions, including:
  - Safety equipment
  - Utility control
  - Buddy system
  - Backup teams
- Identify locations of hazardous materials in the community and the home and reduce the risk from hazardous materials in the home.
- Extinguish small fires using a fire extinguisher.
- Apply the NERT principles to a suspected terrorist incident
- Identify how the FBI defines terrorism
- Know the acronym CBRNE and what it refers to
- Know the routes of exposure
- Know the indicators of terrorism
- Know the steps of decontamination

INTRODUCTION AND UNIT OVERVIEW (CONTINUED)

UNIT TOPICS

This unit will provide you with the knowledge and skills that you will need to reduce or eliminate fire hazards and extinguish small fires. These include:

- Fire chemistry
- Fire and utility hazards in the home, workplace, and neighborhood
- NERT size up: Fire size up considerations
- Firefighting resources
- Fire suppression safety
- Hazardous materials awareness
- Terrorism awareness

In session 6, you will have an opportunity to use a portable extinguisher to put out a fire.

ROLE OF NERTS

- Extinguishing small fires before they become major fires
  - This unit will provide training on how to use an extinguisher to put out small fires and how to recognize when a fire is too big to handle. As a general rule, if you can't put out a fire in 5 seconds, it is already too big to handle, and you should leave the premises immediately.
- Preventing additional fires by removing fuel sources
  - This unit will also describe how to ensure that a fire, once extinguished, is completely extinguished and stays extinguished. This process is called overhaul.
- Shutting off utilities when necessary and safe to do so
- Assisting with evacuations where necessary
  - When a fire is beyond the ability of NERTs to extinguish or a utility emergency has occurred, NERT responders may need to protect lives by evacuating the area and establishing a perimeter.

NERT PRIORITIES

NERTs play a very important role in neighborhood and workplace fire and utility safety by helping in fire- and utility-related emergencies before professional responders arrive. When responding, NERT members should keep in mind the following standards:

- Rescuer safety is always the number one priority. Therefore always:
  - Work with a buddy
  - Wear safety equipment (gloves, helmet, goggles, N95 mask, sturdy shoes/boots)

The NERT goal is to do the greatest good for the greatest number.

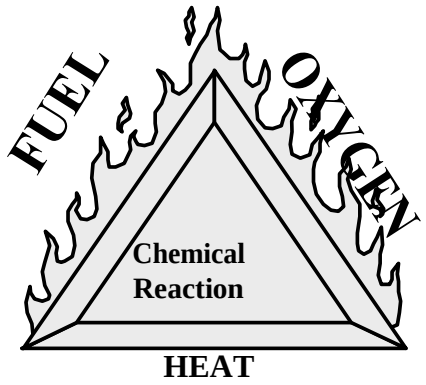
FIRE CHEMISTRY

FIRE CHEMISTRY

Fire requires three elements to exist:

- Heat: Heat is required to elevate the temperature of a material to its ignition point.
- Fuel: The fuel for a fire may be a solid, liquid, or gas. The type and quantity of the fuel will determine which method should be used to extinguish the fire.
- Oxygen: Most fires will burn vigorously in any atmosphere of at least 20 % oxygen. Without oxygen, most fuels could be heated until entirely vaporized, yet would not burn.

The three elements, the *fire triangle,* create a chemical exothermic reaction, which is fire.



Fire Triangle: Fuel, oxygen, and heat create a chemical reaction, which causes fire.

CLASSES OF FIRE

To aid in extinguishing fires, fires are categorized into classes based on the type of fuel

- Class A Fires: Ordinary combustibles such as paper, cloth, wood, rubber, and many plastics
- Class B Fires: Flammable liquids (e.g., oils, gasoline) and combustible liquids (e.g., charcoal lighter fluid, kerosene). These fuels burn only at the surface because oxygen cannot penetrate the depth of the fluid. Only the vapor burns when ignited.
- Class C Fires: Energized electrical equipment (e.g., wiring, motors). When the electricity is turned off, the fire becomes a Class A fire.
- Class D Fires: Combustible metals (e.g., aluminum, magnesium, titanium)
- Class K Fires: Cooking oils (e.g., vegetable oils, animal oils, fats)

It is extremely important to identify the type of fuel feeding the fire in order to select the correct method and agent for extinguishing the fire.

FIRE AND UTILITY HAZARDS

This section will deal with identifying and preventing fire and utility hazards in the home and workplace.

Each of us has some type of fire or utility hazard in our home and workplace. Most of these hazards fall into three categories:

- Electrical hazards
- Natural gas hazards
- Flammable or combustible liquids

Homes and workplaces can and do have other hazards, including incompatible materials stored near each other, such as flammables/combustibles, corrosives, compressed gases, and explosives.

Simple fire prevention measures will help reduce the likelihood of fires:

- First, *locate* potential sources of ignition.
- Then, do what you can to *reduce or eliminate* the hazards.

ELECTRICAL HAZARDS

Here are some examples of common electrical hazards and simple ways that they can be reduced or eliminated:

- Avoid the “electrical octopus.” Eliminate tangles of electrical cords. Don’t overload electrical outlets. Don’t plug power strips into other power strips.
- Don’t run electrical cords under carpets.
- Check for and replace broken or frayed cords immediately.
- Maintain electrical appliances properly. Repair or replace malfunctioning appliances.

RESPONDING TO ELECTRICAL EMERGENCIES

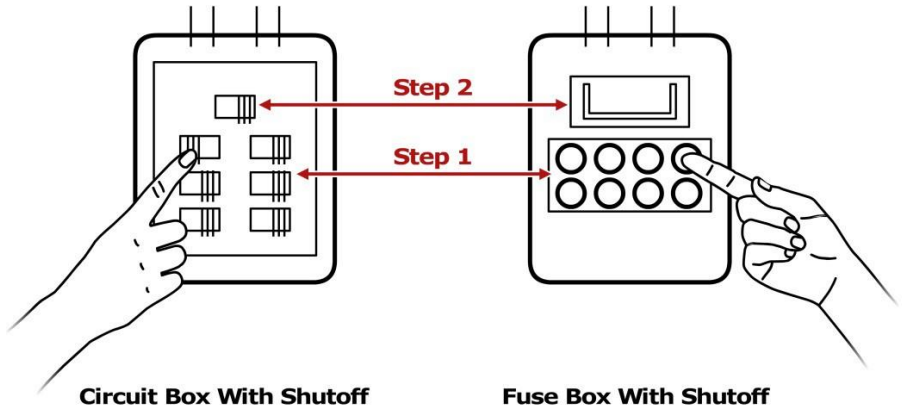
Electrical emergencies sometimes occur despite our best efforts. Every member of the household should be aware of the following procedures in the event of an electrical emergency:

- Locate the circuit breakers or fuses and know how to shut off the power. Post shutoff instructions next to the breaker box or fuse box.
- Unscrew individual fuses or switch off smaller breakers first, then pull the main switch or breaker.
- When turning the power back on, turn on the main switch or breaker first, then screw in the fuses or switch on the smaller breakers, one at a time.

You should <u>not</u> enter a flooded basement or standing water to shut off the electrical supply because water conducts electricity.

FIRES AND UTILITY HAZARDS (CONTINUED)

CIRCUIT BOX AND FUSE BOX



Circuit Box With Shutoff

Circuit box showing shutoff steps.
Step 1: Shut off individual breakers.
Step 2: Shut off main breaker.

Fuse Box With Shutoff

Fuse box showing shutoff steps.
Step 1: Pull out individual fuses.
Step 2: Pull out main fuse.

FIRE AND UTILITY HAZARDS (CONTINUED)

NATURAL GAS HAZARDS

Natural gas presents two types of hazards. It is an:

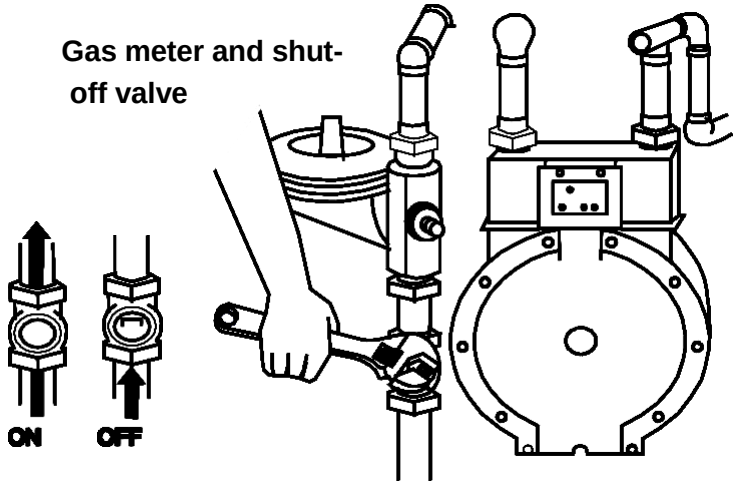
- Asphyxiant that robs the body of oxygen
- Explosive that can easily ignite

NATURAL GAS HAZARD AWARENESS

Here are several examples for monitoring natural gas in your home:

- Natural gas detector: install near the furnace, hot water tank, and gas appliances such as clothes dryer or stove. Test the detector monthly to ensure that it works.
- Carbon monoxide detector: install near the sleeping area. Additional detectors may be installed on every level of the home and in every bedroom. Detectors should not be placed within 15 feet of heating or cooking appliances or in or near very humid areas such as bathrooms. Test the detector monthly
- Locate and label the gas shutoff valve(s). Know how to shut off the gas and have the proper non-sparking tool for shutting off the gas.

NATURAL GAS METER WITH SHUTOFF



The gas meter shutoff diagram indicates the shutoff valve location on the pipe that comes out of the ground. To turn off the valve, use a non-sparking wrench to turn the valve clockwise one-quarter turn. Remember that, in all cases, natural gas flow should only be turned on by a licensed technician.

Please note: Some gas meters have automatic shutoff valves that restrict the flow of gas during an earthquake or other emergency. These are installed by a licensed plumber, downstream of the utility point of delivery. If you are unsure whether your home has this shutoff device, contact your gas service company. If this shutoff device is closed, only a qualified professional should restore it.

FIRE AND UTILITY HAZARDS (CONTINUED)

GAS SHUTOFF

Gas meter inside the home

If your gas meter is located inside your home, you should only shut off gas flow when instructed to by local authorities. If you smell gas or see the dials on your meter showing gas is flowing even though appliances are turned off, you should evacuate the premises and call 911. Do not attempt to shut off the gas from inside the building if gas may be in the air.

Gas meter outside the home

You should turn off the meter from outside the building if you smell gas or you see dials on the meter showing gas is flowing even though appliances are turned off. If there is a fire that you cannot extinguish, call 911 and turn off the gas only if it is safe to do so.

If you are unsure of the proper procedures, do not attempt to turn the utilities on again yourself, particularly in multiple-unit dwellings. Always follow your local fire department's guidelines. Remember that, in all cases, natural gas that has been shut off can only be restored by a trained technician.

Again, some gas meters have automatic shutoff valves that restrict the flow of gas during an earthquake or other emergency. These are installed by a licensed plumber, downstream of the utility point of delivery. If you are unsure whether your home has this shutoff device, contact your gas service company. If this shutoff device is closed, only a qualified professional should restore it.

Never enter the basement of a structure that is on fire to turn off any utility.

Be sure to use a flashlight, not a candle, if an additional light source is needed to locate and shut off the gas valve.

FLAMMABLE LIQUID HAZARDS

Here are several examples for reducing hazards from flammable liquids:

- Read labels to identify flammable products.
- Store them properly, using the L.I.E.S. method (Limit, Isolate, Eliminate, Separate).

You should only extinguish a flammable liquid using a portable fire extinguisher rated for Class B fires.

SIZE UP

Size up is a continual process that enables professional responders to make decisions and respond appropriately in the areas of greatest need. Size up consists of 9 steps and should be used in every emergency situation.

NERT SIZEUP STEPS

1. Gather facts. What has happened? How many people appear to be involved? What is the current situation?
2. Assess and communicate the damage. Try to determine what has happened, what is happening now, and how bad things can really get.
3. Consider probabilities. What is likely to happen? What could happen through cascading events?
4. Assess your own situation. Are you in immediate danger? Have you been trained to handle the situation? Do you have the equipment that you need?
5. Establish priorities. Are lives at risk? Can you help? Remember, life safety is the priority!
6. Make decisions. Base your decisions on the answers to Steps 1 through 5 and in accordance with the priorities that you established.
7. Develop a plan of action. Develop a plan that will help you accomplish your priorities. Simple plans may be verbal, but more complex plans should always be written.
8. Act. Execute your plan, documenting deviations and status changes so that you can report the situation accurately to first responders.
9. Evaluate progress. At intervals, evaluate your progress in accomplishing the objectives in the plan of action to determine what is working and what changes you may have to make to stabilize the situation.

NERT SIZEUP (CONTINUED)

NERT FIRE SIZEUP

	Yes	No
Step 1: Gather Facts		
Time		
Does the time of day or week affect fire suppression efforts? How?	☐	☐
Weather		
Are there weather conditions that affect your safety? If yes, how will your safety be affected?	☐	☐
Will weather conditions affect the fire situation? If yes, how will the fire situation be affected?	☐	☐
Type of Construction		
What type(s) of structure(s) are involved?		
What type(s) of construction are involved		
Occupancy		
Are the structures occupied? If yes, how many people are likely to be affected?	☐	☐
Are there special considerations (e.g., children, elderly, pets, people with disabilities)?	☐	☐
	Yes	**No**
Hazards		
Are hazardous materials evident?	☐	☐
Are any other types of hazards present? If yes, what other hazards?	☐	☐
Step 2: Assess and Communicate the Damage		
Survey all sides of the building. Is the danger beyond your capability or training?	☐	☐
Have the facts and the initial damage assessment been communicated to the appropriate person(s)?	☐	☐

Step 3: Consider Probabilities		
Life Hazards		
Are there potentially life-threatening hazards? If yes, what are the hazards?	☐	☐
Path of Fire		
Does the fire's path jeopardize other areas? If yes, what other areas may be jeopardized?	☐	☐
Additional Damage		
Is there a high potential for more disaster activity that will impact personal safety? If yes, what are the known risks?	☐	☐
	Yes	**No**
Step 4: Assess Your Own Situation		
What equipment is available to help suppress the fire?		
What other resources are available?		
Can fire suppression be *safely* attempted by NERT members? If not, do *not* attempt suppression.	☐	☐
Step 5: Establish Priorities		
Are there other, more pressing needs at the moment? If yes, list.	☐	☐
Step 6: Make Decisions		
Where will resources do the most good while maintaining an adequate margin of safety?		
Step 7: Develop a Plan of Action		
Determine how personnel and other resources should be used.		
Step 8: Take Action		
Put the plan into effect.		
Step 9: Evaluate Progress		
Continually size up the situation to identify changes in the: Scope of the problem Safety risks Resource availability		
Adjust strategies as required.		

FIRE SIZEUP CONSIDERATIONS

A size up of a situation involving a fire will dictate whether to attempt fire suppression and will help you plan for extinguishing the fire.

Size up is a continual 9-step process that enables you to make decisions and respond appropriately in the areas of greatest need. Evaluation of progress — Step 9 — may require you to go back and gather more facts.

Remember that the safety of individual NERT responders is always the top priority. Effective fire size up will allow you to answer all the following questions:

- Do my buddy and I have the right equipment?
- Are there other hazards?
- Is the building structurally damaged?
- Can my buddy and I escape?
- Can my buddy and I fight the fire safely?

FIREFIGHTING RESOURCES

The most common firefighting resources are:

- Portable fire extinguishers
- Interior wet standpipes

Other resources include confinement and “creative resources.”

FIRE EXTINGUISHERS

Portable fire extinguishers are invaluable for putting out small fires. A well-prepared home or workplace will have at least two portable fire extinguishers.

The type of fuel that is burning will determine which resources to select to fight a fire.

Because portable fire extinguishers are most common, this section will focus on them.

TYPES OF FIRE EXTINGUISHERS

There are four types of extinguishers:

- Water
- Dry chemical
- Carbon dioxide
- Specialized fire extinguishers

Fire Types, Extinguishing Agents, and Methods

FIRE TYPE	EXTINGUISHING AGENT	EXTINGUISHING METHOD
Ordinary Solid Materials  	Water Foam Dry chemical	Removes heat Removes air and heat Breaks chain reaction
Flammable Liquids  	Foam CO_2 Dry chemical	Removes air Breaks chain reaction
Electrical Equipment  	CO_2 Dry chemical	Removes air Breaks chain reaction
Combustible Metals  	Special agents	Usually remove air
Kitchen Oils  	Chemical	Usually removes air

FIREFIGHTING RESOURCES (CONTINUED)

EXTINGUISHER RATING AND LABELING

Portable fire extinguishers must be rated and approved by the State fire marshal and Underwriters Laboratories (an organization that sets safety standards for manufactured goods). They are rated according to their effectiveness on the different classes of fire. Their strength and capability must also be labeled by the manufacturer.

The label contains vital information about the type(s) of fire for which the extinguisher is appropriate.

Extinguishers that are appropriate for Class A fires have a rating from 1A to 40A, with a higher number indicating a higher volume of extinguishing agent.

Extinguishers that are appropriate for Class B fires have a rating from 1B to

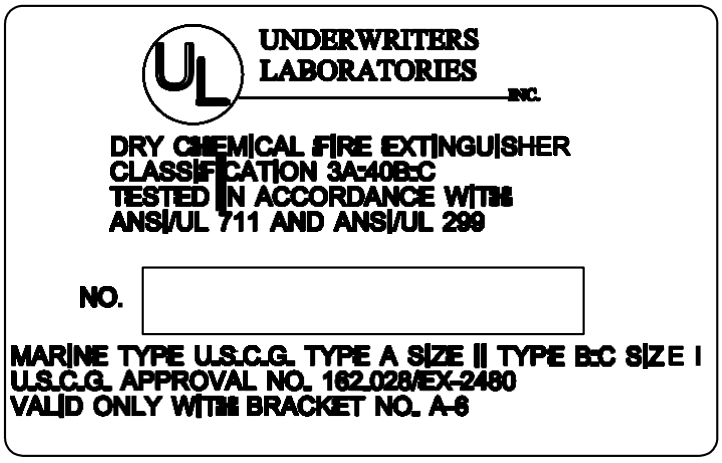
640B. No number accompanies an extinguisher rated Class C, D, or K.

The C on the label indicates only that the extinguisher is safe to use on electrical fires.

Extinguishers for Class D fires must match the type of metal that is burning and are labeled with a list detailing the metals that match the unit's extinguishing agent. These extinguishers also do not use numerical ratings.

Extinguishers for Class K fires are designed to supplement fire suppression systems in commercial kitchens. They spray an alkaline mixture that, when combined with the fatty acid of the burning cooking oil or fat, creates soapy foam to hold in the vapors and extinguish the fire.

MANUFACTURER'S LABEL ILLUSTRATION



Sample manufacturer's label for a fire extinguisher, showing the Underwriters Laboratories symbol at the top, the type and classification of fire extinguisher, testing procedures used, and serial number. At the bottom of the label is marine information, including the U.S. Coast Guard approval number.

FIREFIGHTING RESOURCES (CONTINUED)

WATER EXTINGUISHERS

Common characteristics of water extinguishers include:

- Capacity. Standard size is 2.5 gallons.
- Range. Standard range is 30-40 feet.
- Pressure. Standard pressure is 110 pounds per square inch (psi).

Use caution so the water spray won't scatter the burning material and spread the fire.

CHEMICAL EXTINGUISHERS

Dry chemical extinguishers are most common.

- Sodium bicarbonate base are effective on Class B and C fires.
- Monoammonium phosphate base are effective for Class A, B, and C fires.

Common characteristics of dry chemical extinguishers include:

- Capacity. Approximately 10-20 seconds discharge time
- Range. Standard range is 8-12 feet.
- Pressure. Standard pressure is 175-250 psi.

Carbon dioxide and other specialized extinguishers are becoming less common.

DECIDING TO USE A FIRE EXTINGUISHER

Questions to ask before attempting to fight a fire with an extinguisher:

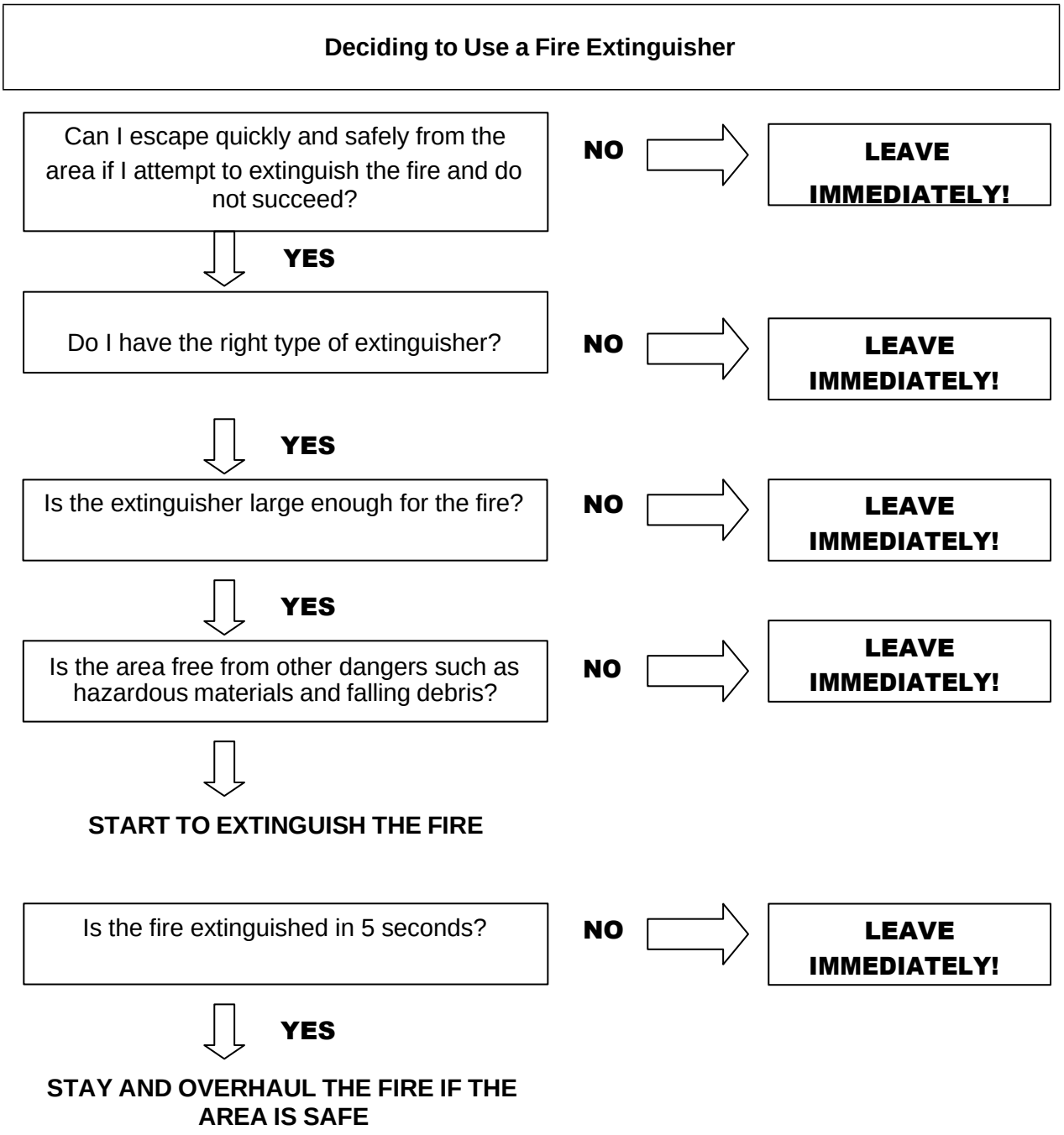
- Are there two ways to exit the area quickly and safely if I attempt to extinguish the fire? (The priority for you and your buddy is safety.)
- Do I have the right type of extinguisher for the type of fire?
- Is the extinguisher large enough for the fire?
- Is the area free from other dangers, such as hazardous materials and falling debris?

If you answer "NO" to any questions or if you can't put out the fire in 5 seconds using the extinguisher, you should:

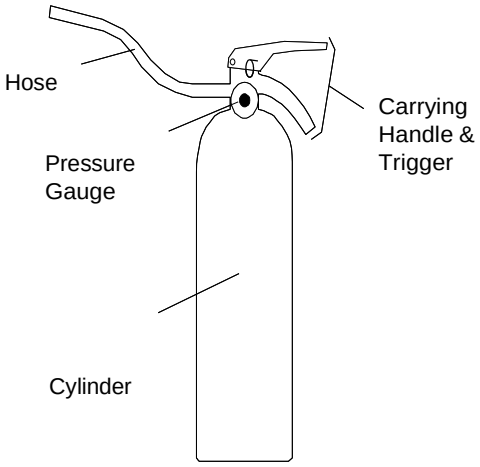
- Leave the building immediately.
- Shut all doors as you leave to slow the spread of the fire.

If you answer "YES" to all these questions, you may attempt to extinguish the fire. Even if you answer "YES" to all the questions but feel unable to extinguish the fire, you should leave immediately. You should always remember the 5-second rule.

If the fire is extinguished in 5 seconds and the area is safe, you should stay and overhaul the fire. Overhauling is the process of searching a fire scene for hidden fire or sparks to prevent the fire from rekindling. Remember "cool, soak, and separate."


Deciding to Use a Fire Extinguisher
Can I escape quickly and safely from the area if I attempt to extinguish the fire and do not succeed?
NO
LEAVE IMMEDIATELY!
YES
Do I have the right type of extinguisher?
NO
LEAVE IMMEDIATELY!
YES
Is the extinguisher large enough for the fire?
NO
LEAVE IMMEDIATELY!
YES
Is the area free from other dangers such as hazardous materials and falling debris?
NO
LEAVE IMMEDIATELY!
START TO EXTINGUISH THE FIRE
Is the fire extinguished in 5 seconds?
NO
LEAVE IMMEDIATELY!
YES
STAY AND OVERHAUL THE FIRE IF THE AREA IS SAFE

COMPONENTS OF A PORTABLE FIRE EXTINGUISHER

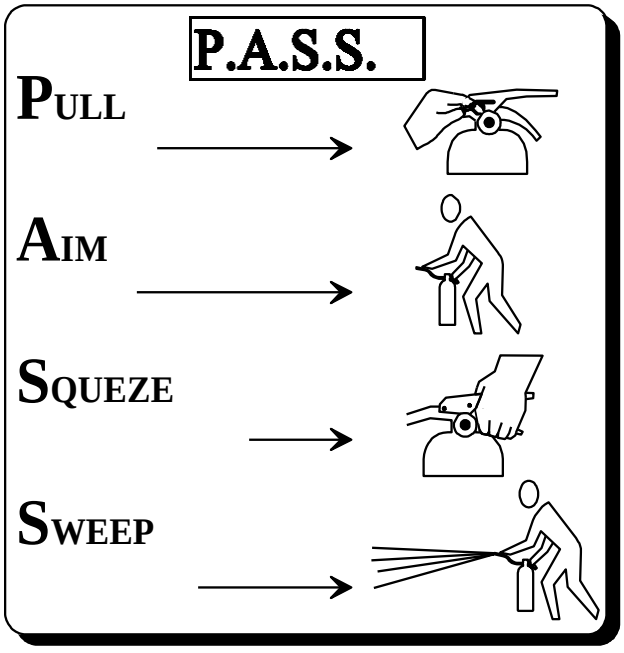


Components of a portable fire extinguisher: Hose, carrying handle and trigger, pressure gauge, cylinder

P.A.S.S.

The acronym for operating a fire extinguisher is P.A.S.S.:

- Pull (Test the extinguisher after pulling the pin)
- Aim
- Squeeze
- Sweep



FIREFIGHTING RESOURCES (CONTINUED)

To ensure that the extinguisher is working properly, test it before approaching any fire. Be sure to aim at the base of the fire. Any fire extinguishers that have been completely depleted should be laid down and stored on their side so no attempt will be made to use them until they are recharged.

INTERIOR WET STANDPIPES

Interior wet standpipes are usually in commercial and apartment buildings and consist of 100 feet of 1.5-inch jacketed hose with an adjustable spray nozzle. They deliver up to 125 gallons of water per minute.

You will always need to work in two-person teams when using an interior wet standpipe.

Team Member 1: Removes the hose from the cabinet and makes sure that hose is free of kinks and bends in the line. When ready, gives the go-ahead to Team Member 2 to open the water valve.

Team Member 2: After Team Member 1 gives the go-ahead, opens the water valve. Team Member 2 will then backup Team Member 1 at the nozzle.

Due to the dryness of the hose fabric, water may seep through the hose fabric until the hose is saturated. This may last for approximately 1 minute.

CONFINEMENT

In interior spaces, it is possible to *confine* a fire and restrict the spread of smoke and heat by closing doors, interior and exterior.

FIRE SUPPRESSION SAFETY

As a NERT responder, small fire suppression may be one of your roles. Your personal safety must always be your number one concern. You will be unable to help anyone if you are injured through careless size up or unsafe acts.

FIRE SUPPRESSION SAFETY RULES

- Use safety equipment at all times. Wear your helmet, goggles, dust mask, leather gloves, and sturdy shoes or boots. If you are not equipped to protect your personal safety, leave the building.
- Work with a buddy. Buddies serve an important purpose. They protect your safety. Don't ever try to fight a fire alone.
- Have a backup team, whenever possible. A backup team just makes good sense. A backup team can support your fire suppression efforts and can provide help if you need it.
- Always have two ways to exit the fire area. Fires spread much faster than you might think. Always have a backup escape plan in case your main escape route becomes blocked.
- Look at the door. If air is being sucked under the door or smoke is coming out the top of the door, do not touch the door.
- Feel closed doors with the back of the hand, working from the bottom of the door up. Do not touch the door handle before feeling the door. If the door is hot, there is fire behind it. Do not enter! Opening the door will feed additional oxygen to the fire.
- Confine the fire, whenever possible, by closing doors and keeping them closed.
- Stay low to the ground. Smoke will naturally rise. Keeping low to the ground will provide you with fresher air to breathe.
- Maintain a safe distance. Remember the effective range of your fire extinguisher. Don't get closer than necessary to extinguish the fire.
- Never turn your back on a fire when backing out.
- Overhaul the fire to be sure that it is extinguished — and stays extinguished.

Sometimes, what NERTs don't do when suppressing fires is as important as what they should do. DON'T:

- Get too close. Stay near the outer range of your extinguisher. If you feel the heat, you are too close.
- Try to fight a fire alone. Remember that your first priority is your personal safety. Don't put it at risk.
- Try to suppress large fires. Learn the capability of your equipment, and do not try to suppress a fire that is clearly too large for the equipment at hand (i.e., a fire that is larger than the combined ratings of available fire extinguishers).

- Enter smoke-filled areas. Suppressing fires in smoke-filled areas requires equipment that NERTs don't have.

PROPER FIRE SUPPRESSION PROCEDURES

A buddy system is used in all cases.

- The job of Team Member 1 is to put out a fire with an extinguisher.
- The job of Team Member 2 is to watch for hazards and ensure the safety of both team members.

Here is the proper fire suppression procedure:

1. Assume ready position. With the pin pulled, Team Member 1 holds the extinguisher aimed and upright, approximately 20 to 25 feet from the fire for small fires.
2. When ready to approach the fire, Team Member 1 should say, "Ready." Team Member 2 should repeat, "Ready."
3. As Team Member 1 begins to move forward, he or she should say, "Going in." Team Member 2 should repeat the command and stay within reach of Team Member 1.
4. Both team members should walk toward the fire. Team Member 1 should watch the fire and Team Member 2 should stay close to Team Member 1, keeping his or her hand on Team Member 1's shoulder. Team Member 2's job is to protect Team Member 1.
5. When Team Member 1 is exiting the fire area, he or she should say, "Backing out." Team Member 2 should repeat the command.
6. Team Member 2 should guide Team Member 1 from the area with his or her hands as Team Member 1 continues facing the fire and looking for other hazards. Team Member 1 must never turn his or her back on the fire scene.

HAZARDOUS MATERIALS

Materials are considered hazardous if they have any of these characteristics:

- Corrode other materials
- Explode or are easily ignited
- React strongly with water
- Are unstable when exposed to heat or shock
- Are toxic to humans, animals, or the environment through absorption, inhalation, injection, or ingestion

Hazardous materials include, but are not limited to:

- Explosives
- Flammable gases and liquids
- Poisons and poisonous gases
- Corrosives
- Nonflammable gases
- Oxidizers
- Radioactive materials

IDENTIFYING HAZARDOUS MATERIALS LOCATIONS

Ways to identify locations where hazardous materials are stored, used, or in transit:

- Location and type of occupancy
- Placards
- Sights, sounds, and smells

Location and Type of Occupancy

Hazardous materials are commonplace throughout every community. They are used in many commercial processes and sold in many retail outlets. While these hazards are managed under normal circumstances, accidents and disasters can cause these materials to be released into the environment. Common locations in the community:

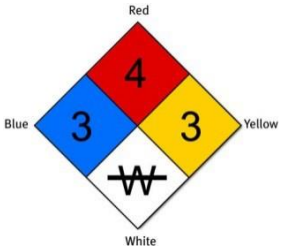
- Industrial locations (e.g., warehouse, rail yard, shipyard)
- Dry cleaner
- Funeral home
- Home supply store
- Big box store
- Delivery van (UPS, FedEx)

HAZARDOUS MATERIALS (CONTINUED)

Placards

The National Fire Protection Association (NFPA) 704 Diamond is a concise system for identifying the hazards associated with specific materials. The NFPA 704 Diamond placard is found on fixed facilities where hazardous materials are used or stored.

The diamond is divided into four colored quadrants, each with a rating number inside of it, which indicates the degree of risk associated with the material. Numbers range from 1 to 4. **The higher the number the higher the risk!**



- The red quadrant describes the material's flammability.
- The blue quadrant indicates health hazard.
- The yellow quadrant indicates reactivity.
- The white quadrant indicates special precautions.

There are two symbols specified in the National Fire Codes, section 704.

- ~~W~~ indicates a material that displays unusual reactivity with water (i.e., should never be mixed with water or have water sprayed on it). Magnesium metal is an example of a material that is reactive to water.
- OX indicates a material that possesses oxidizing properties. Ammonium nitrate is an example of a material with oxidizing properties. Materials that are oxidizers increase the potential for explosion or fire.

HAZARDOUS MATERIALS (CONTINUED)

In addition to the above symbols that are specified under the National Fire Codes, some NFPA 704 Diamonds will include additional symbols:

- ACID indicates that the material is an acid.
- ALK indicates that the material is a base.
- COR indicates that the material is corrosive.
-  indicates that the material is radioactive.

The numbers within the NFPA 704 Diamond are used to assist professional firefighters in responding to accidents or fires.

NERT responders should consider these placards a "stop sign." The only action NERT responders should take is to evacuate persons who are downwind, as necessary, to an uphill or upwind location. Do not enter the building to evacuate persons inside.

IDENTIFYING HAZARDOUS MATERIALS IN TRANSIT

There are three ways that hazardous materials are marked and identified while in transit:

- The Department of Transportation (DOT) placard
- The United Nations (UN) system
- The North American (NA) warning placards

These placards can be on any vehicle, not only tankers. Keep in mind that:

- No placard is required for less than 1,000 pounds of many hazardous materials.
- Certain hazardous materials (e.g., anhydrous ammonia) are placarded as a nonflammable gas for domestic transport but as a flammable gas for international transport. (Anhydrous ammonia is a flammable gas!)

Sometimes drivers forget to change the placard when they change their cargo. Use extreme caution when approaching any vehicle in an accident.

HAZARDOUS MATERIALS (CONTINUED)

Like the NFPA 704 Diamond, the DOT, UN, and NA placards should be a "stop sign" for NERT members. You should always err on the side of safety. You should *not* assume that, because there is no placard, no hazardous materials are present. Treat any unknown situation as a hazardous materials incident.

DOT PLACARD WARNING

Sights, Sounds, and Smells

Hazardous materials are all around us and may be present regardless of the location or whether there are placards or other posted warnings. While hazardous materials often smell, sound, or look unusual, you may not be able recognize something toxic. You should stay away from any unidentifiable substance and alert building managers or authorities.

Unit Summary

Effective fire suppression depends on an understanding of:

- The elements required for fire to exist
- The type of fuel involved
- The class of fire
- The resources required and available to extinguish each type of fire
- Effective fire suppression techniques

Fire requires heat, fuel, and oxygen to exist.

There are five types, or classes, of fire:

- Class A: Ordinary combustibles
- Class B: Flammable liquids
- Class C: Energized electrical equipment
- Class D: Combustible metals
- Class K: Cooking oils in commercial kitchens and cafeterias

It is extremely important to identify the class of fire to use the proper extinguisher for the class.

Portable fire extinguishers are most frequently used for suppressing small fires. Their labels tell the types of fires for which they are effective and the area that they can suppress.

When using portable fire extinguishers, remember P.A.S.S.: Pull, Aim, Squeeze, and Sweep. Always test the extinguisher after pulling the pin.

When suppressing a fire, always follow the safety rules established for NERTs.

To help understand the types of materials, there are several methods of placarding hazardous materials being stored or transported, including NFPA, DOT, UN, and NA. When faced with accidents involving materials that are placarded as hazardous — or when the material is unknown — keep away and call for professional help immediately.

HOMEWORK ASSIGNMENT

Before the next session, you should:

- Read and familiarize yourself with Unit 3: Disaster Medical Operations — Part I and Unit 4: Disaster Medical Operations – Part II in the Participant Manual.

Be sure to wear comfortable clothes for the next session because you will be practicing medical techniques.

UNIT 3: DISASTER MEDICAL OPERATIONS — PART 1

In this module you will learn about:

- **Life-Threatening Conditions:** How to recognize and treat an airway obstruction, bleeding, and shock.
- **Triage:** Principles of triage and how to conduct triage evaluations.

Introduction and Unit Overview

The need for NERTs to learn disaster medical operations is based on two assumptions:

- The number of survivors could exceed the local capacity for treatment.
- Survivors will attempt to assist others. As NERT responder you will need to know lifesaving first aid or post-disaster survival techniques.

NERT medical operations can play a vital role in limiting deaths from trauma. The phases of death from trauma are:

1. Phase 1: Death within minutes as a result of overwhelming and irreversible damage to vital organs
2. Phase 2: Death within several hours as a result of excessive bleeding
3. Phase 3: Death in several days or weeks as a result of infection or multiple-organ failure (i.e., complications from an injury)

These phases underlie why disaster medical operations are conducted as they are (by identifying those with the most serious injuries as soon as possible and treating those with life-threatening injuries first). Some disaster victims in the second and third phases of death could be saved by providing simple medical care.

In a disaster there may be more survivors than rescuers, and assistance from medical professionals may not be immediately available. NERT responders are trained to be part of disaster medical operations and to provide:

- Treatment for life-threatening conditions — airway obstruction, bleeding, and shock — and for other, less urgent conditions
- The greatest good for the greatest number of people by conducting simple triage and rapid treatment

START

Simple Triage and Rapid Treatment (START) is a critical concept for initially dealing with casualties in a disaster.

History has proven that 40% of disaster survivors can be saved with simple (rapid!) medical care. START is based on the premise that a simple medical assessment and rapid treatment based on the assessment will yield positive, often lifesaving, results.

STart = Simple Triage: The first phase of START is the process by which survivors are sorted based on injury and priority of treatment.

stART = And Rapid Treatment: The second phase of START consists of rapid treatment of the injuries assessed and prioritized in the first phase.

All NERT participants are encouraged to take basic first aid and CPR training; however, if you have taken first aid courses you will need to understand that NERT covers

disaster medical operations where time is critical to conduct triage and treat many survivors. CPR is not taught in this course because it is labor intensive and not appropriate in austere conditions when there are many survivors and professional help will be delayed.

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Identify the "killers."
- Apply techniques for opening the airway, controlling bleeding, and treating for shock.
- Conduct triage under simulated disaster conditions.

Remember, the goal of disaster medical operations is to do the greatest good for the greatest number. In a disaster with many survivors, time will be critical. NERT responders will need to work quickly and efficiently to help as many survivors as possible.

UNIT TOPICS

This session will introduce you to the principles of triage, including treating the "three killers": airway obstruction, excessive bleeding, and shock.

Throughout the unit, you will have opportunities to practice the treatment techniques and, at the end of the unit, you will have the opportunity to conduct simulated triage evaluations.

Treating Life-Threatening Conditions

In emergency medicine, airway obstruction, bleeding, and shock are "killers" because without treatment they will lead to death. The first priority of medical operations is to attend to those potential killers by:

- Opening the airway
- Controlling excessive bleeding
- Treating for shock

This section will train you to recognize the "killers" by recognizing their symptoms and their effects on the body.

APPROACHING THE SURVIVOR

Rescuers must first ensure that they are wearing safety equipment:

- Helmet
- Goggles
- Gloves
- N95 mask

- Sturdy shoes or boots
- Non-latex exam gloves

A good time-saving technique is to wear non-latex exam gloves under your work gloves. Then, when you find a survivor, you can remove your work gloves and are ready to work with the survivor.

Remember to use non-latex exam gloves to prevent potential reaction by individuals who are allergic to latex.

There are several steps to take when approaching a survivor. When ready to approach a survivor:

1. If the survivor is conscious, be sure he or she can see you.
2. Identify yourself by giving your name and indicating the organization with which you are affiliated.
3. ALWAYS request permission to treat an individual. If the individual is unconscious, he or she is assumed to have given "implied consent," and you may treat him or her. Ask a parent or guardian for permission to treat a child, if possible.
4. Whenever possible, respect cultural differences. For example, in some Muslim traditions it is customary to address the male when requesting permission to treat a female member of his family.
5. Remember, all medical patients are legally entitled to confidentiality (HIPAA). When dealing with survivors, always be mindful and respectful of the privacy of their medical condition.

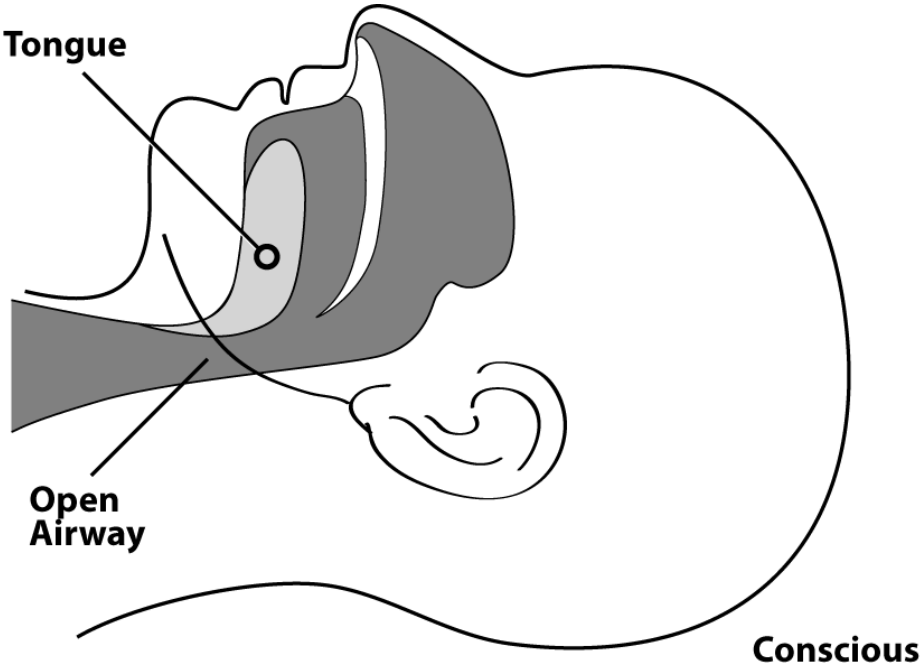
OPENING THE AIRWAY

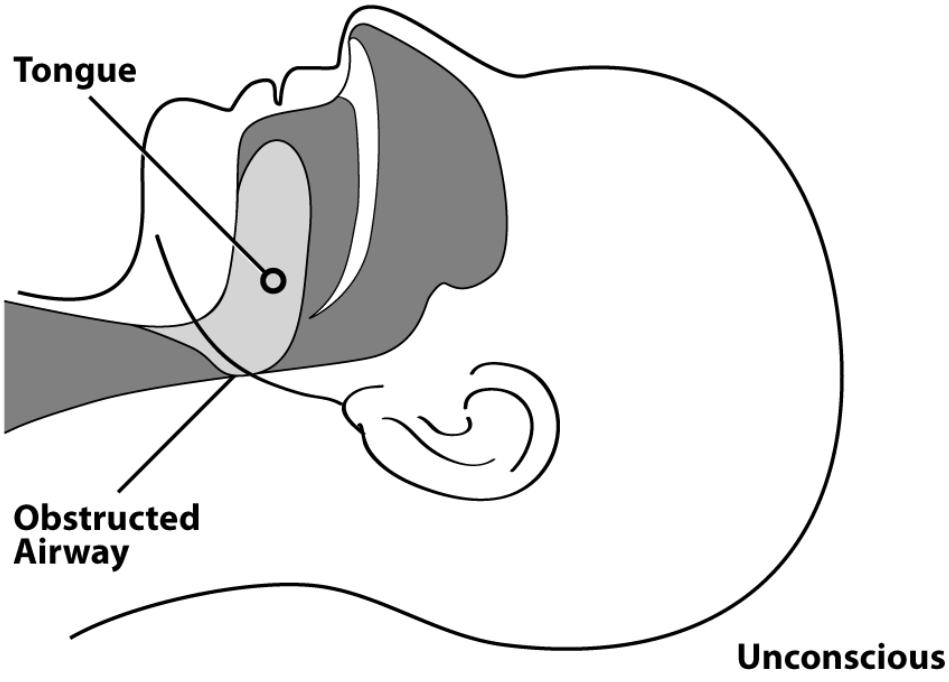
The respiratory system includes the following components:

- Lung
- Bronchus
- Larynx
- Pharynx
- Nasal Cavity
- Trachea

In an unconscious or semiconscious survivor, especially one positioned on his or her back, the most common airway obstruction is the tongue. The tongue — which is a muscle — may relax and block the airway. A survivor with a suspected airway obstruction must be checked immediately for breathing and, if necessary, the airway must be opened.

Airway Obstructed by the Tongue





TREATING LIFE-THREATENING CONDITIONS (CONTINUED)

THE HEAD-TILT/CHIN-LIFT METHOD

When an airway obstruction is suspected because a survivor is unconscious or semiconscious, NERT responders should clear the airway using the Head-Tilt/Chin-Lift method.

In addition to opening the airway, this method causes little or no cervical-spine manipulation because only the head is manipulated.

Proper technique is always important in opening an airway, but so is speed.

Head-Tilt/Chin-Lift Method for Opening an Airway

Step	Action
1	At an arm's distance, make contact with the survivor by touching the shoulder and asking, "Can you hear me?" Speak loudly, but do not yell.
2	If the survivor does not or cannot respond, place the palm of one hand on the forehead.
3	Place two fingers of the other hand under the chin and tilt the jaw upward while tilting the head back slightly.
4	Place your ear close to the survivor's mouth, looking toward the survivor's feet, and place a hand on the survivor's abdomen.
5	*Look* for chest rise.
6	*Listen* for air exchange. Document abnormal lung sounds (wheezing, gasping, gurgling, etc.).
7	*Feel* for abdominal movement.
8	If breathing has been restored, the clear airway must be maintained by keeping the head tilted back. If breathing has not been restored, repeat steps 2-7.

TREATING LIFE-THREATENING CONDITIONS (CONTINUED)

EXERCISE: OPENING THE AIRWAY
Purpose: Practice using the Head-Tilt/Chin-Lift method to open the airway.

MAINTAINING THE AIRWAY

If breathing has been restored, the clear airway still must be maintained by keeping the head tilted back. One option is to ask another person to hold the head in place; even another survivor with minor injuries could do this. The airway also can be maintained by placing soft objects under the survivor's shoulders to elevate the shoulders slightly and keep the airway open.

Remember that part of your mission is to do the greatest good for the greatest number of people. For that reason, if breathing is not restored on the first try using the Head-Tilt/Chin-Lift method, NERT responders should try again using the same method. If breathing cannot be restored on the second try, you must move on to the next survivor.

You should always be concerned with head, neck, or spinal injuries (all of which are common in structural collapses). Used properly, the Head-Tilt/Chin-Lift method for opening an airway causes little spinal manipulation because the head pivots on the spine.

Remember the importance of opening the airway as quickly as possible. When treating the three killers, checking for airway obstruction is always first.

CONTROLLING BLEEDING

Uncontrolled bleeding initially causes weakness. If bleeding is not controlled, the survivor will go into shock within a short period of time and finally will die. An adult has about 5 liters of blood. Losing 1 liter can result in death.

There are three types of bleeding and the type can usually be identified by how fast the blood flows:

- Arterial bleeding. Arteries transport blood under high pressure. Blood coming from an artery will spurt.
- Venous bleeding. Veins transport blood under low pressure. Blood coming from a vein will flow.
- Capillary bleeding. Capillaries also carry blood under low pressure. Blood coming from capillaries will ooze.

There are three main methods for controlling bleeding:

- Direct pressure
- Elevation
- Pressure points

Direct pressure and elevation will control bleeding in 95% of cases.

TREATING LIFE-THREATENING CONDITIONS (CONTINUED)

DIRECT PRESSURE

This is the procedure for controlling bleeding through direct pressure:

- Step 1: Place direct pressure over the wound by putting a clean dressing over it and pressing firmly.
- Step 2: Maintain pressure on the dressing over the wound by wrapping firmly with a bandage.

Direct pressure and elevation can take 5 to 7 minutes to stop the bleeding completely. The use of a dressing and pressure bandage allows the rescuer to move on to the next survivor.

A pressure bandage should be tied with a bow, so that it can be loosened — rather than cut — to examine the wound, and then retied. This procedure helps to conserve supplies and saves time. The bandage maintains the direct pressure needed to stop the bleeding. NERT responders continue to assess the survivor's status. If the survivor's limb is turning blue or becoming numb below the bandage, then it should be loosened.

ELEVATION

Elevation can be used in combination with direct pressure. Elevate the wound above the level of the heart.

The body has great difficulty pumping blood against gravity; therefore, elevating a wound above the heart will decrease blood flow and loss of blood through the wound.

PRESSURE POINTS

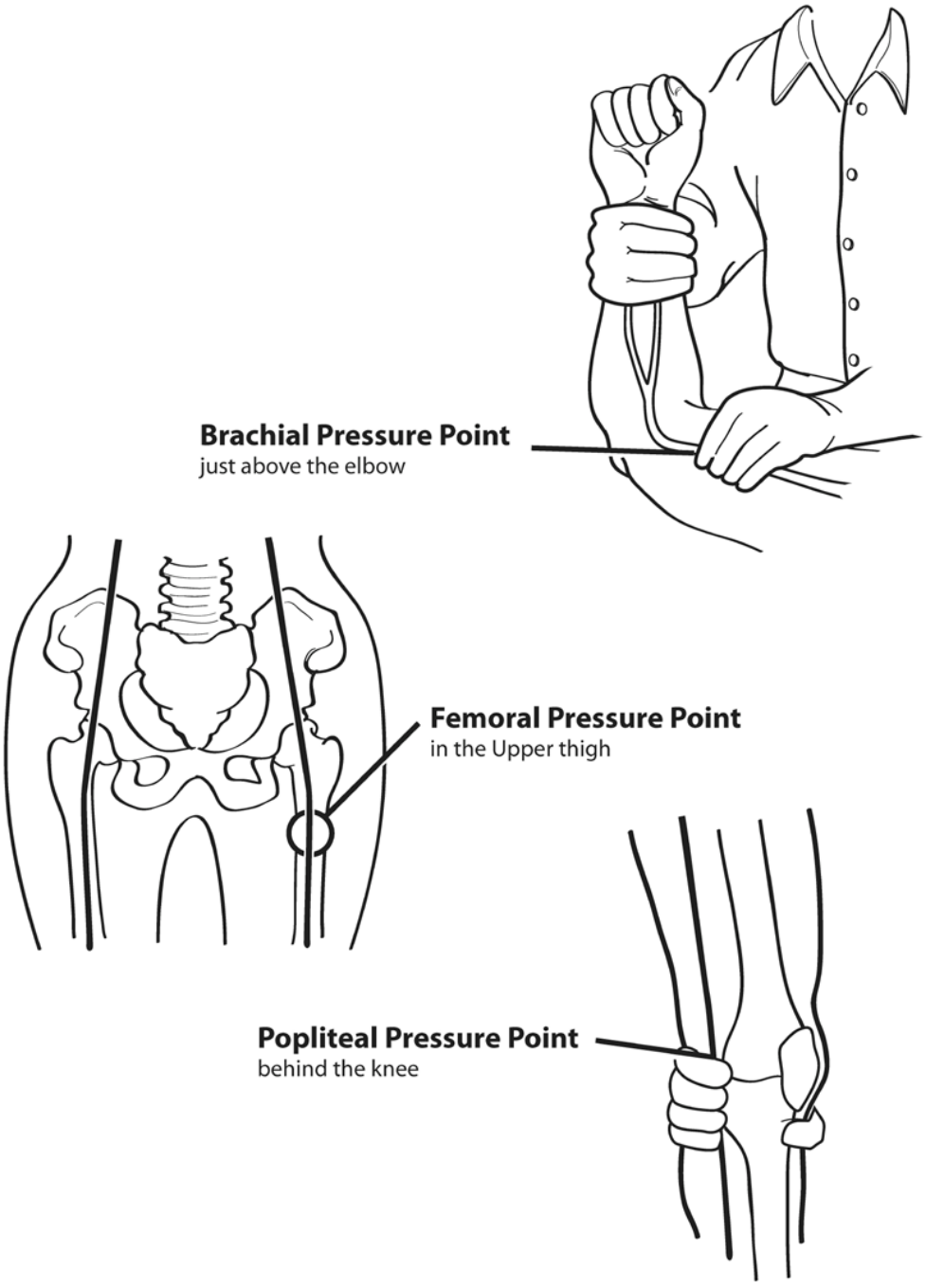
There are also pressure points that can be used to stem the flow of bleeding.

The pressure points most often used are the:

- Brachial point in the arm
- Femoral point in the leg
- Pressure point behind the knee

The pressure point to use depends on the location of the wound. The correct pressure point is between the wound and the heart.

METHODS FOR CONTROLLING BLEEDING



TREATING LIFE-THREATENING CONDITIONS (CONTINUED)

EXERCISE: CONTROLLING BLEEDING

Purpose: This exercise will provide a chance to practice using the techniques for controlling bleeding.

Instructions:

1. After breaking into pairs, identify one person to take the role of the survivor.
2. The injury is on the right forearm, just below the elbow.
3. Apply a pressure bandage and elevate the arm.
4. Repeat the process twice.
5. Swap roles and have the new rescuer complete the above steps.

TOURNIQUETS (OPTIONAL)

NERTs will use direct pressure on pressure points and elevation to manage most bleeding. However, if bleeding cannot be stopped using these methods and professionals are delayed in responding, a tourniquet may be a viable option to save a person from bleeding to death. However, a tourniquet is absolutely a last resort (life or limb) when other preferred means have failed to control bleeding in an arm or a leg.

- A tourniquet is a tight bandage which, when placed around a limb and tightened, cuts off the blood supply to the part of the limb beyond it.
- A tourniquet can do harm to the limb, but it can halt severe blood loss when all other means have failed, and professional help will not arrive in time to help stop the bleeding before the person dies.
- Use any long, flat, soft material (bandage, necktie, belt, or stocking). Do not use materials like rope, wire, or string that can cut into the patient's flesh.
- To tie a tourniquet:
  1. Place the tourniquet between the wound and the heart (for example, if the wound is on the wrist, you would tie the tourniquet around the forearm).
  2. Tie the piece of material around the limb.
  3. Place a stick, pen, ruler, or other sturdy item against the material and tie a knot around the item, so that the item is knotted against the limb.
  4. Use the stick or other item as a lever to twist the knot more tightly against the limb, tightening the bandage until the bleeding stops.
  5. Tie one or both ends of the lever to the limb to secure it and maintain pressure.
  6. Mark the patient in an obvious way that indicates that a tourniquet was used and include the time it was applied.
  7. Do not loosen a tourniquet once it has been applied.
  8. Only proper medical authorities should remove a tourniquet.

TREATING LIFE-THREATENING CONDITIONS (CONTINUED)

CONTROLLING BLEEDING REVIEW

The three main ways to control excessive bleeding:

- Direct pressure
- Elevation
- Pressure points

Bleeding must be controlled as quickly as possible so as not to endanger the survivor's life from blood loss.

You should always wear your non-latex exam gloves, goggles, and an N95 mask as a protection against blood-borne pathogens, such as hepatitis and HIV.

Shock is a condition that occurs when the body is not getting enough blood flow. When blood doesn't circulate, oxygen and other nutrients are not carried to tissues and organs. Blood vessels begin to close, and organs are damaged and, if left untreated, will shut down completely. Shock can worsen very rapidly.

Remaining in shock will lead to the death of:

- Cells
- Tissues
- Entire organs

The main signs of shock that NERT responders should look for are:

- Rapid and shallow breathing (greater than 30/minute)
- Capillary refill of greater than 2 seconds
- Failure to follow simple commands, such as "Squeeze my hand"

EVALUATE BREATHING

Note if the survivor's breathing is rapid and shallow, i.e., more than 30 breaths per minute.

EVALUATE CIRCULATION

One way to test for circulation is the blanch test. A good place to do the blanch test is the palm of one hand. Sometimes, a nail bed is used. The blanch test is used to test capillary refill. You should see the color return to the tested area within 2 seconds.

Because the blanch test is not valid in children, mental status should be used instead as the main indicator.

EVALUATE MENTAL STATUS

There are several ways to evaluate mental status.

- Ask, “Are you okay?”
- Give a simple command such as “Squeeze my hand.”

If you are concerned that there might be a language barrier or hearing impairment, reach out with both hands and squeeze one of the survivor’s hands. The person will squeeze back if they can.

TREATING FOR SHOCK

The body will initially compensate for blood loss and mask the symptoms of shock; therefore, shock is often difficult to diagnose. It is possible — and, in fact, common — for an individual suffering from shock to be fully coherent and not complaining of pain. Pay attention to subtle clues, as failure to recognize shock will have serious consequences.

Avoid rough or excessive handling. It is important to maintain the survivor’s body temperature. If necessary, place a blanket or other material under and/or over the survivor to provide protection from extreme ground temperatures (hot or cold). Position the survivor on his or her back and elevate the feet 6 to 10 inches above the level of the heart to assist in bringing blood to the vital organs.

Although survivors who are suffering from shock may be thirsty, they should not eat or drink anything initially because they may also be nauseated.

Procedures for Controlling Shock

Step	Action
1	Maintain an open airway.
2	Control obvious bleeding.
3	Maintain body temperature (e.g., cover the ground and the survivor with a blanket if necessary).
Notes	Avoid rough or excessive handling. Do not provide food or drink.

EXERCISE: TREATING SHOCK

Purpose: This exercise offers you a chance to practice the steps for treating shock.

Instructions:

1. Break into the previous groups.
2. The person who was the survivor first in the previous exercise will now be the rescuer first.
3. Pretend that you are in the following situation:
   - You have come upon an unconscious survivor who has been bleeding profusely from a wound of the upper arm for an undetermined period. You have controlled the bleeding.
   - What do you need to do next?
   - Switch places and have the survivor become the rescuer

Triage

In mass casualty events, medical personnel:

- Identify the dead and those who are too severely injured to be saved
- Send those with relatively minor injuries and wounds to a holding area to await treatment
- Identify those who would die from life-threatening injuries and treat them immediately

The term for this is triage — a French term meaning "to sort."

During medical triage, survivors' conditions are evaluated, and the survivors are prioritized into four categories:

- Immediate (I): The survivor has life-threatening injuries (airway, bleeding, or shock) that demand immediate attention to save his or her life; rapid, lifesaving treatment is urgent. These survivors are marked with a red tag or labeled "I."
- Delayed (D): Injuries do not jeopardize the survivor's life. The survivor may require professional care, but treatment can be delayed. These survivors are marked with a yellow tag or labeled "D."
- Minor (M): Walking wounded and generally ambulatory. These survivors are marked with a green tag or labeled "M."
- Dead (DEAD): No respiration after two attempts to open the airway. Because CPR is one-on-one care and is labor intensive, CPR is not performed when there are many more survivors than rescuers. These victims are marked with a black tag or labeled "DEAD."

From triage, survivors are taken to the designated medical treatment area (immediate care, delayed care, or the morgue).

NERT responders do not rescue or move those tagged DEAD.

It is crucial to the physical and mental well-being of disaster survivors that the morgue be placed away from the other groups. Traditionally, blue tarps are used to identify and conceal the morgue area.

RESCUER SAFETY DURING TRIAGE

If hazardous materials are present, rescuer safety is paramount. NERT responders should leave the scene to avoid harm and reduce the risk of spreading contamination.

Rescuer safety is crucial during triage. Rescuers must wear all safety equipment, including non-latex exam gloves, goggles, a helmet, and an N95 mask when examining survivors and should try to change gloves between survivors. Because of limited supplies, it may not be possible to use a new pair of gloves for every survivor. If this is the case, gloves may be sterilized between treating survivors using 1-part bleach to 10-parts water. Your disaster kit should have a box of non-latex gloves. Bleach and potable water should also be available at the NERT's medical treatment area.

EXERCISE: REMOVING EXAM GLOVES

Purpose: This exercise will allow you to practice proper technique for removing soiled exam gloves without spreading contaminants.

Instructions:

1. Put on a pair of gloves.
2. Remove and dispose of your gloves as instructed.

TRIAGE IN A DISASTER ENVIRONMENT

Here is the general procedure for NERTs to conduct triage:

- Step 1: Stop, Look, Listen, and Think. Before your team starts, stop and size up the situation by looking around and listening. Think about your safety, capability, and limitations, and decide if you will approach the situation. If you decide to proceed, quickly make a plan about your approach that all members understand.

- Step 2: Conduct voice triage. Begin by calling out, "Neighborhood Response Team. If you can walk, come to the sound of my voice." Speak loudly and firmly. If there are survivors who are ambulatory, tag them GREEN and direct them to a designated location. If rescuers need assistance and there are ambulatory survivors, then these survivors should be asked to provide assistance. These persons may also provide useful information about the location of the survivors.

- Step 3: Start where you stand and follow a systematic route. Start with the closest survivors and work outward in a systematic fashion.

- Step 4: Evaluate each survivor and tag them "**I**" (immediate= RED), "**D**" (delayed=YELLOW), "**M**" (minor=GREEN), or **DEAD** (=BLACK). Remember to evaluate the walking wounded. Remember to ASK for permission to treat if the individual is conscious.

- Step 5: Treat **I** survivors immediately. Initiate airway management, bleeding control, and/or treatment for shock for Category **I** survivors.
- Step 6: Document triage results for:
  - Effective deployment of resources
  - Information on the survivors' locations
  - A quick record of the number of casualties by degree of severity.

Your safety is paramount during triage. Wear proper protective equipment!

Evaluating a Survivor During Triage

Step	Procedures
1	Check airway/breathing. At an arm's distance, make contact with the survivor and speak loudly. If the survivor does not respond: Position the airway. Look, listen, and feel. Check breathing rate. Abnormally rapid respiration (above 30 per minute) indicates shock. Maintain the airway and treat for shock and tag "I." If below 30 per minute, then move to Step 2. If the victim is not breathing after two attempts to open airway, then tag "DEAD."
2	Check circulation/bleeding. Take immediate action to control severe bleeding. Check circulation using the blanch test (for capillary refill) or a radial pulse test. Press on an area of skin until normal skin color is gone. Time how long it takes for normal color to return. Treat for shock if normal color takes longer than 2 seconds to return, and tag "I." Or check the radial pulse. If present, continue to step 3. Note if the pulse is abnormal (rapid, thready, weak, etc.) If absent, tag "I" and treat for bleeding and shock.
3	Check mental status. Inability to respond indicates that immediate treatment for shock is necessary. Treat for shock and tag "I."

EVALUATING A SURVIVOR DURING TRIAGE (CONTINUED)

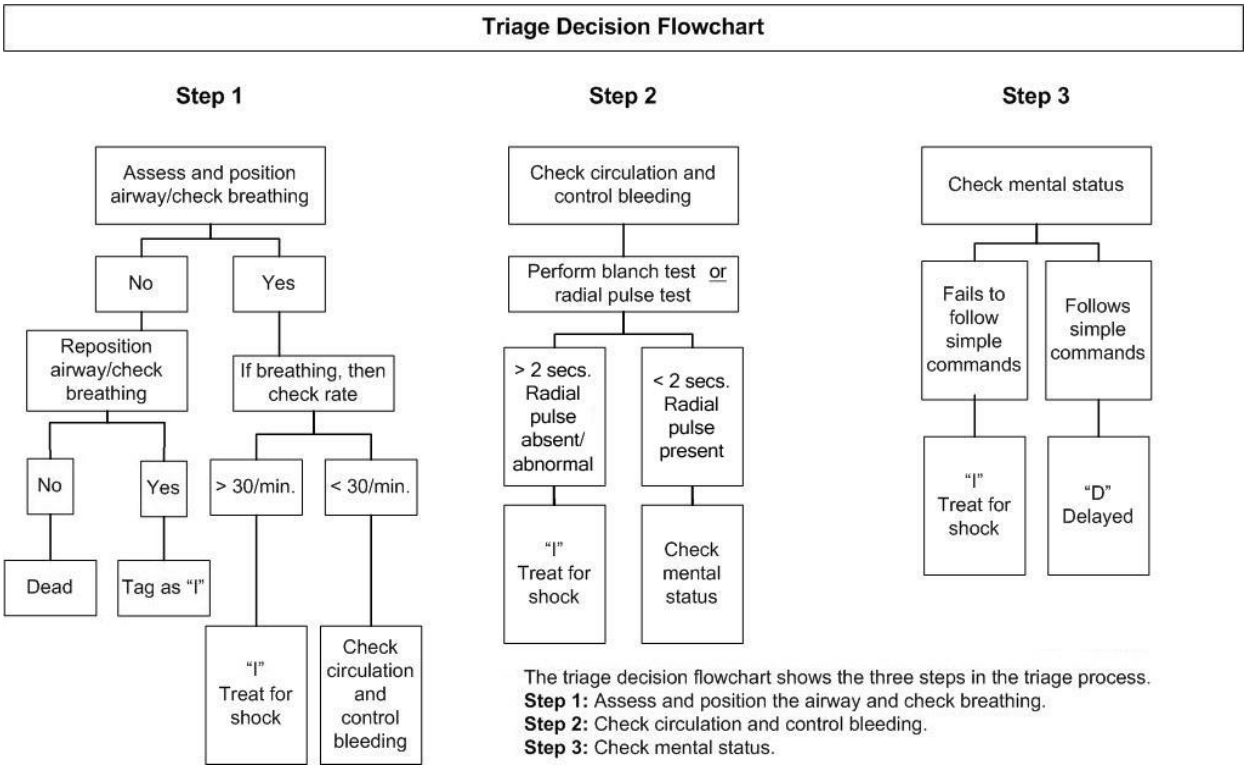
Time is critical in a disaster. You will not be able to spend much time with any single survivor. Remember to do the greatest good for the greatest number of survivors.

In order to respond effectively in a mass casualty event NERT responders must:

- Have a plan based on a thorough size up
- Follow that plan
- Document actions throughout

Triage must be practiced to learn to avoid triage pitfalls. Triage pitfalls include:

- No team plan, organization, or goal
- Indecisive leadership
- Too much focus on one injury
- Treatment (rather than triage) performed



The triage decision flowchart shows the three steps in the triage process.
Step 1: Assess and position the airway and check breathing.
Step 2: Check circulation and control bleeding.
Step 3: Check mental status.

EVALUATING A SURVIVOR DURING TRIAGE (CONTINUED)

EXERCISE: CONDUCTING TRIAGE

Purpose: This exercise will allow you to practice conducting triage in a high-pressure situation.

Instructions:

1. Divide into two groups. Survivors receive your status cards.
2. There will be two rounds. In each round, one group will be rescuers and the other will be survivors.
3. The rescuers will have a limited amount of time to:
   - Choose a team leader and assign team member roles
   - Size up the situation and develop a plan of action
   - Conduct triage and tag each survivor for treatment
   - Document the number of survivors in each category of triage (Immediate, Delayed, Minor, Dead)

Unit Summary

- NERT members' ability to open airways, control bleeding, and treat shock is critical to saving lives.
  - Use the Head-Tilt/Chin-Lift method for opening airways.
  - Control bleeding using direct pressure, elevation, and/or pressure points.
  - If there is a question about whether a survivor is in shock, treat for shock as a precaution.
- Triage is a system for rapidly evaluating survivors' injuries and prioritizing them for treatment.
  - There are 4 triage categories:
    1. Immediate
    2. Delayed
    3. Minor
    4. Dead
- Triage in a disaster environment consists of 6 important steps:
  1. Stop, Look, Listen and Think, and make a quick plan.
  2. Conduct voice triage.
  3. Begin where you stand and work systematically.
  4. Evaluate and tag all survivors.
  5. Treat those tagged "I" immediately.
  6. Document your findings.
- The procedure for conducting triage evaluations involves checking:
  - The airway and breathing rate
  - Circulation and bleeding
  - Mental status

UNIT 4: DISASTER MEDICAL OPERATIONS — PART 2

In this unit you will learn about:

- **Public Health Considerations:** How to maintain hygiene and sanitation.
- **Functions of Disaster Medical Operations:** What the five major functions of disaster medical operations are and how they are set up.
- **Disaster Medical Treatment Areas:** How to establish them and what their functions are.
- **Patient Evaluation:** How to perform a head-to-toe assessment to identify and treat injuries.
- **Basic Treatment—How to:**
  - Treat burns
  - Dress and bandage wounds
  - Treat fractures, dislocations, sprains, and strains
  - Treat hypothermia
  - Treat heat-related injuries
  - Control nasal bleeding
  - Treat bites and stings

Introduction and Unit Overview

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Take appropriate sanitation measures to protect public health.
- Perform head-to-toe patient assessments.
- Establish a treatment area.
- Apply splints to suspected fractures and sprains
- Employ basic treatments for other injuries

UNIT TOPICS

The unit topics are:

- Public Health Considerations
- Functions of Disaster Medical Operations
- Establishing Medical Treatment Areas
- Conducting Head-to-Toe Assessments
- Treating Burns
- Wound Care
- Treating Fractures, Dislocations, Sprains, and Strains
- Nasal Injuries
- Treating Cold-Related Injuries
- Treating Heat-Related Injuries
- Bites and Stings

Public Health Considerations

During disaster, public health becomes a concern. Measures must be taken by individual NERT responders and the team to avoid the spread of disease.

The primary public health measures include:

- Maintaining proper hygiene
- Maintaining proper sanitation
- Purifying water (if necessary)
- Preventing the spread of disease

MAINTAINING HYGIENE

Maintenance of proper personal hygiene is critical even under makeshift conditions.

Some steps that individuals should take to maintain hygiene are to:

- Wash hands frequently using soap and water. Hand washing should be thorough (at least 15 to 20 seconds of vigorous rubbing on all surfaces of the hand).

  Alcohol-based hand sanitizers — which don't require water — are a good alternative to hand washing. The Centers for Disease Control (CDC) recommends products that are at least 60% alcohol. To use an alcohol-based hand sanitizer, apply about ½ teaspoon of the product to the palm of your hand. Rub your hands together, covering all surfaces, until hands are dry.
- Wear non-latex exam gloves at all times. Change or disinfect gloves after examining and/or treating each patient. As explained earlier, under field conditions, individuals can use rubber gloves that are sterilized between treating survivors using bleach and water (1-part bleach to 10-parts water).
- Wear an N95 mask and goggles.
- Keep dressings sterile. Do not remove the overwrap from dressings until use. After opening, use the entire package of dressing, if possible.
- Thoroughly wash areas that come in contact with body fluids with soap and water or diluted bleach as soon as possible.

MAINTAINING SANITATION

Poor sanitation is also a major cause of infection. NERT medical operations responders can maintain sanitary conditions:

- Control the disposal of bacterial sources (e.g., soiled gloves, dressings, etc.)
- Put waste products in plastic bags, tying off the bags. Mark them as medical waste. Keep medical waste separate and dispose of it as hazardous waste.

PUBLIC HEALTH CONSIDERATIONS (CONTINUED)

WATER PURIFICATION

Potable water supplies are often in short supply or are not available in a disaster. Water can be purified for drinking, cooking, and medical use by heating it to a rolling boil for 1 minute or by using water purification tablets or non-perfumed liquid bleach.

The bleach to water ratios is:

- 8 drops of bleach per gallon of water
- 16 drops per gallon of water, if the water is cloudy or dirty

Let the bleach and water solution stand for 30 minutes. Note that if the solution does not smell or taste of bleach, add another six drops of bleach, and let the solution stand for 15 minutes before using.

Rescuers should not put anything on wounds other than purified water. The use of other solutions (e.g., hydrogen peroxide) on wounds must be the decision of trained medical personnel.

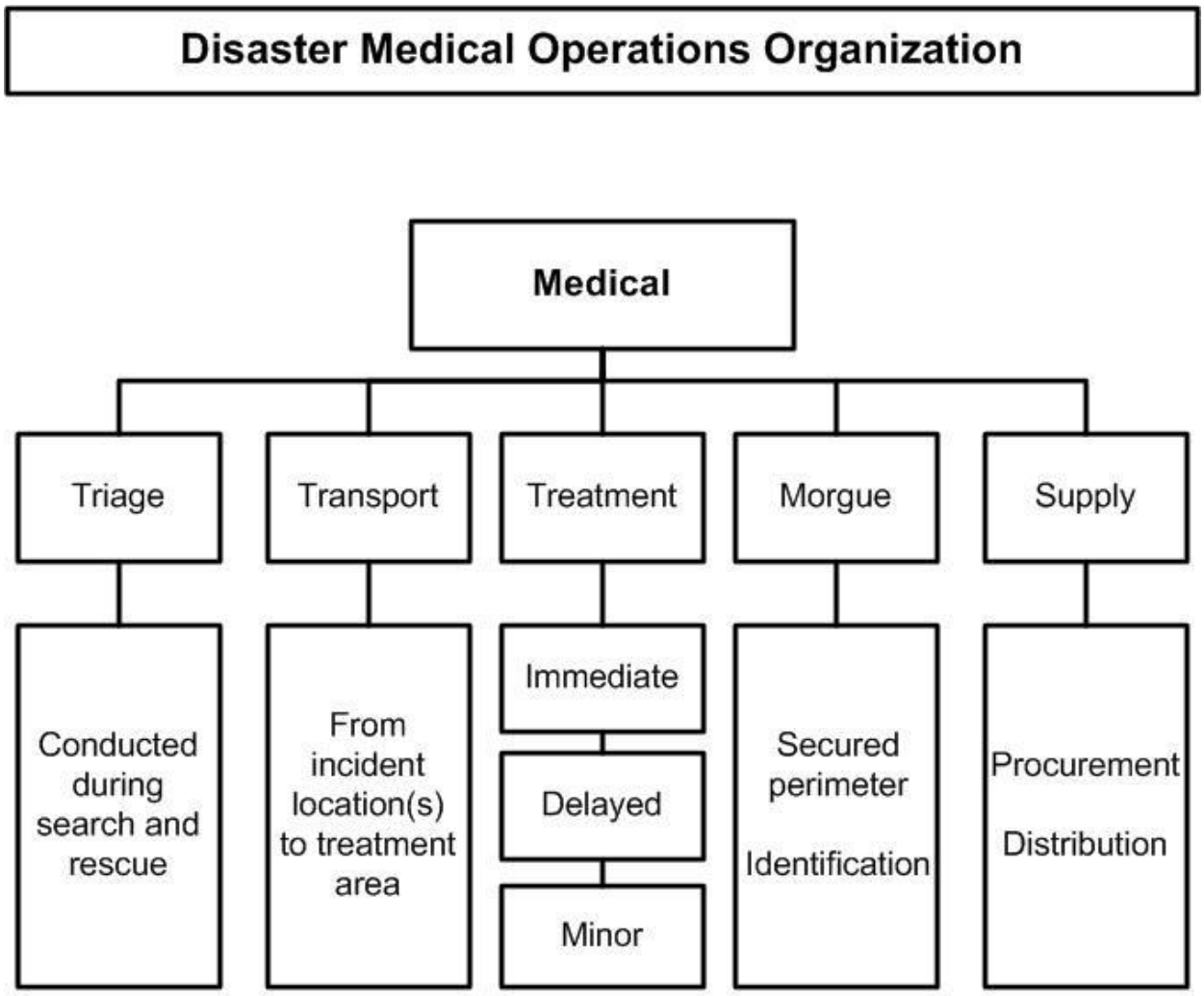
PREVENTING THE SPREAD OF DISEASE

NERT responders must use non-latex exam gloves, goggles, and an N95 mask during all medical operations. Cover all open wounds as a way of preventing the spread of infection.

FUNCTIONS OF DISASTER MEDICAL OPERATIONS

There are five major functions of disaster medical operations:

- Triage: The initial assessment and sorting of survivors for treatment based on the severity of their injuries
- Treatment: The disaster medical services provided to survivors
- Transport: The movement of survivors from incident location to the treatment area
- Morgue: The temporary holding area for victims who have died at the treatment area. Those who are tagged as “Dead” during triage are not removed from the incident site.
- Supply: The hub for crucial supply procurement and distribution



Disaster Medical Operations Organization showing the functions of disaster medical operations: Triage, Transport, Treatment, Morgue, and Supply

ESTABLISHING MEDICAL TREATMENT AREAS

Because time is critical when NERTs activate, medical operations responders will need to select a site and set up a treatment area as soon as injured survivors are confirmed.

Determining the best location(s) for the NERT treatment area should include the following overall considerations:

- Safety for rescuers and survivors
- Most effective use of resources, e.g., NERT responders themselves, time, medical supplies.
- The treatment area is set up near the site where the survivors are found. Do not plan to bring injured survivors to the NERT responder staging area. (Staging covered in Unit 6)

SAFETY FOR RESCUERS AND SURVIVORS

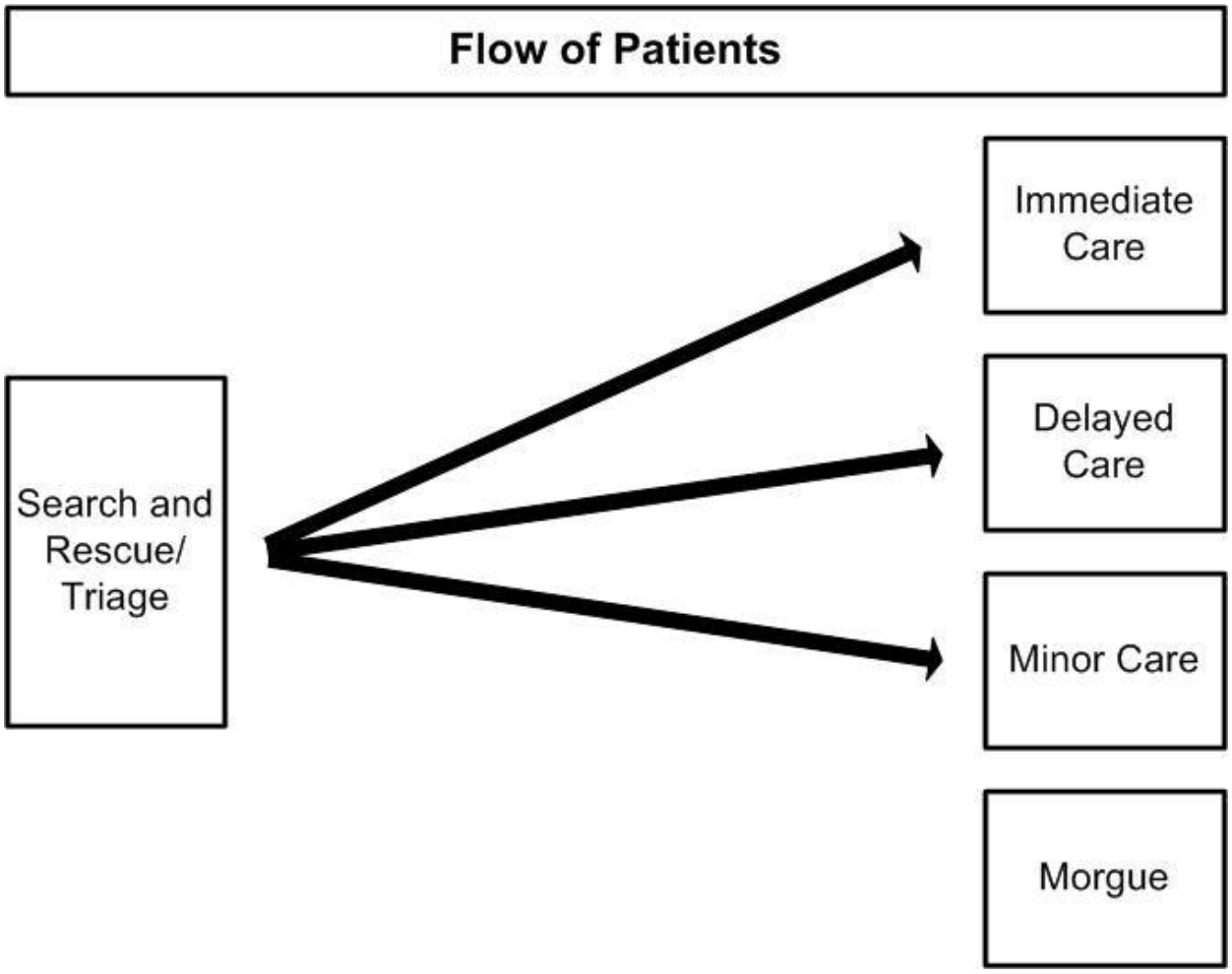
As survivors are located, rescued, and triaged, they are moved to a location where they can be treated. The severity of the damage and the safety of the immediate environment determine where the initial NERT treatment area should be located. In all cases, remember that your safety is the number one priority.

- In structures with light damage, NERT responders triage the survivors as they are located. Further medical treatment is performed in a safe location inside the structure where survivors are organized according to the extent of their injuries.
- In structures with moderate damage, NERT responders also triage the survivors as they are located; however, survivors are sent to a medical treatment location that is a safe distance from the incident location. Survivors are organized according to the extent of their injuries.

Whether the treatment area is set up inside or a safe distance from the structure, a morgue may need to be set up as a temporary holding area for victims who die at the treatment area.

In addition to the severity of the damage to the structure where survivors are found, there are two other important safety considerations:

- The treatment area itself must be free of hazards and debris.
- The site should be close to but uphill and upwind from the hazard zone.


Flow of Patients
Search and Rescue/ Triage
Immediate Care
Delayed Care
Minor Care
Morgue

ESTABLISHING MEDICAL TREATMENT AREAS (CONTINUED)

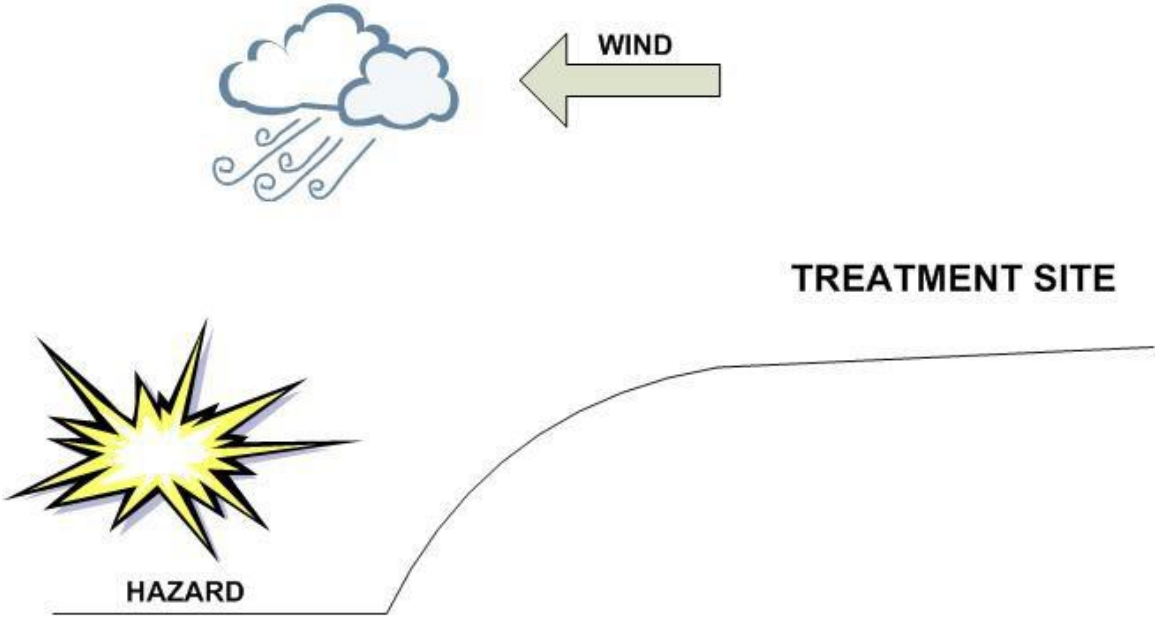
MOST EFFECTIVE USE OF NERT RESOURCES

In addition to the safety of rescuers and survivors, a second overall consideration for setting up treatment areas is how to make the best use of NERT resources, e.g., NERT responders themselves, time, medical supplies, and equipment.

To help meet the challenge of limited resources, particularly if initial treatment operations will continue for some time, NERTs may need decentralized treatment locations and/or may establish one central medical treatment location, depending on the circumstances.

- Decentralized Treatment Sites: In a widespread event with many injured, it is sometimes necessary to set up and maintain more than one medical treatment location, especially when a central treatment location would be a considerable distance from the initial treatment site.
    - A medical treatment location would be set up close to, but a safe distance from, each of the damage sites. Each of the treatment locations would include areas for Immediate, Delayed, and Minor survivors and a morgue.
    - Survivors remain under treatment at the location until they can be transported to a location for professional medical care or to the NERT's main treatment area.
- Centralized Treatment Site: In an event with one or a few injured survivors at each of a number of sites, the NERT may need to establish <u>one central medical treatment location</u>. A centralized location may need to be set up even when there are decentralized sites established.
    - The location would include treatment areas for Immediate, Delayed, and Minor survivors, and a morgue.
    - Survivors are moved from where they were rescued, triaged, and initially treated to the central location, and remain under treatment there until they can be transported to a location for professional medical treatment.
    - A central medical treatment location allows for effective use of resources since a limited number of NERT medical operation responders in one location can take care of a greater number of survivors.
    - Professional EMS will generally be able to transport the injured more efficiently from one central location than from multiple decentralized locations.
- Whether a treatment site is centralized or one of several decentralized sites are established, the location(s) selected should be:
    - Accessible by transportation vehicles (ambulances, trucks, helicopters, etc.)
    - Expandable

Treatment Area Site Selection



The treatment site should be uphill and upwind from the hazard.

TREATMENT AREA LAYOUT

The treatment area must be protected and clearly delineated. Signs or colored tarps should be used to identify the subdivisions of the area:

- "I" for Immediate care RED
- "D" for Delayed care YELLOW
- "M" for Minor injuries/walking wounded GREEN
- "DEAD" for the morgue BLACK

ESTABLISHING MEDICAL TREATMENT AREAS (CONTINUED)

The "I" and "D" areas should be relatively close to each other to allow:

- Verbal communication between workers in the treatment areas
- Shared access to medical supplies (which should be cached in a central location)
- Easy transfer of patients whose status has changed

Survivors who have been identified with minor injuries may choose to stay at the treatment area or leave. If they stay, they can assist NERT responders. If they leave, it should be documented.

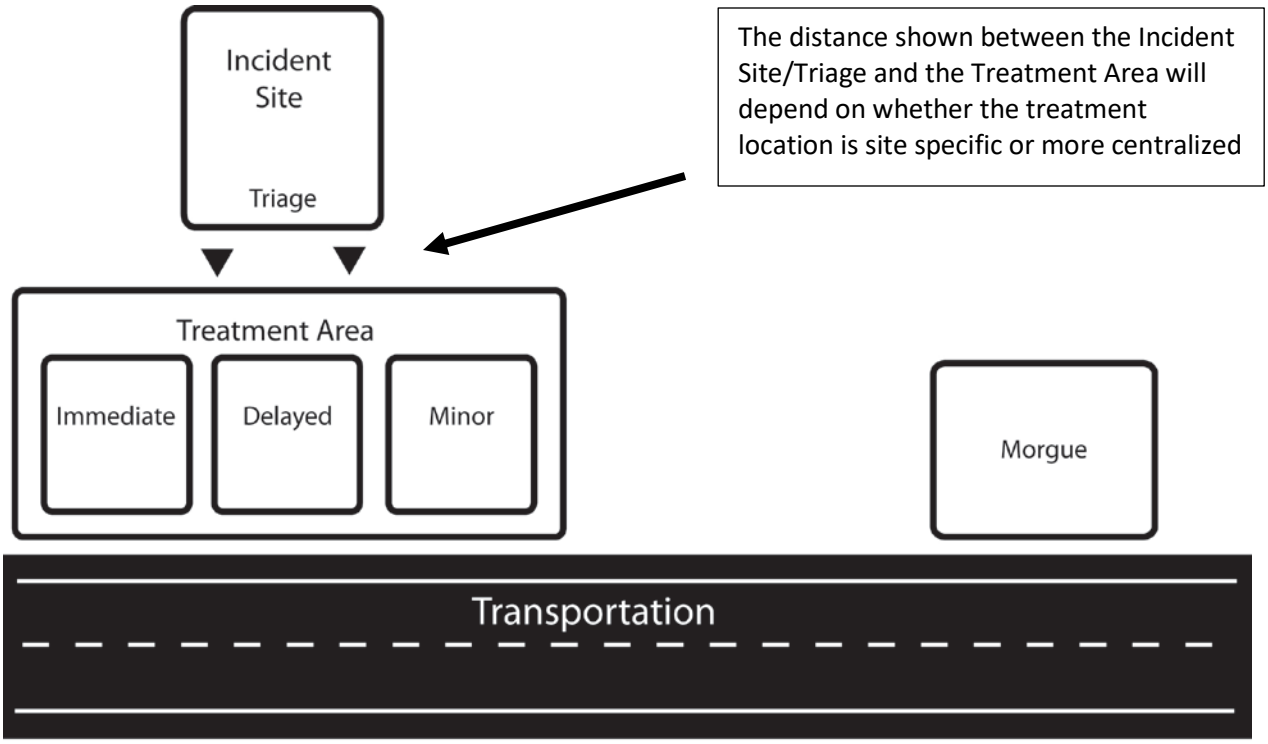
Place survivors in the treatment area in a head-to-toe configuration, with 2 to 3 feet between survivors. This system will provide:

- Effective use of space
- Effective use of available personnel. As a team member finishes one head-to-toe assessment, he or she turns around and is at the head of the next patient.

The morgue site should be secure, away from and not visible from the treatment area. This will help reduce the potential psychological impact on those in the treatment area.

Pre-planning for NERT medical operations includes equipment needed to set up the treatment area, such as ground covers or tarps and signs

Treatment Area Site Layout



Treatment area layout, showing the organization for the incident site, triage, transportation, and morgue

ESTABLISHING MEDICAL TREATMENT AREAS (CONTINUED)

TREATMENT AREA ORGANIZATION

There is an obvious need for planning before disaster strikes, including roles of personnel assigned to the treatment area. The NERT must assign leaders to maintain control in each of the medical treatment area subdivisions. These leaders will:

- Ensure orderly survivor placement
- Direct team members to conduct head-to-toe assessments
- Document

It is very important to thoroughly document the survivors in the treatment area, including:

- Name, address, and phone number if survivor can talk
- Description (age, sex, body build, estimated height)
- Clothing
- Injuries
- Treatment
- Transfer location

CONDUCTING HEAD-TO-TOE ASSESSMENTS

The first steps that you will take when working with a survivor will be to conduct triage and rapid treatment. After all survivors in an area have been triaged and moved to a medical treatment area, NERT responders will begin a thorough head-to-toe assessment of each survivor's condition.

During triage, you are keeping an eye out for "the killers":

- Airway obstruction
- Excessive bleeding
- Signs of shock

A head-to-toe assessment goes beyond the "killers" to try to gain more information to determine the nature of the survivor's injury. The entire assessment must be performed before initiating treatment.

OBJECTIVES OF HEAD-TO-TOE ASSESSMENTS

The objectives of a head-to-toe assessment are to:

- Determine, as clearly as possible, the extent of injuries
- Determine what type of treatment is needed
- Document injuries

Always wear your safety equipment when conducting head-to-toe assessments.

WHAT TO LOOK FOR IN HEAD-TO-TOE ASSESSMENTS

The medical community uses the acronym DCAP-BTLS to remember what to look for when conducting a rapid assessment. DCAP-BTLS stands for the following:

- Deformities
- Contusions (bruising)
- Abrasions
- Punctures
- Burns
- Tenderness
- Lacerations
- Swelling

When conducting the assessment, look for DCAP- BTLS in all parts of the body.

Remember to provide IMMEDIATE treatment for life-threatening injuries.

Pay attention to how people have been hurt (the mechanism of injury). It provides insight to probable injuries suffered.

CONDUCTING HEAD-TO-TOE ASSESSMENTS (CONTINUED)

HOW TO CONDUCT A HEAD-TO-TOE ASSESSMENT

Whenever possible, ask the person about any injuries, pain, bleeding, or other symptoms. If the survivor is conscious, NERT responders should always ask permission to conduct the assessment. The survivor has the right to refuse treatment. Talking with the conscious patient reduces anxiety.

Head-to-toe assessments should be:

- Conducted on all survivors, even those who seem all right
- Verbal (if the patient is able to speak)
- Hands-on. Do not be afraid to remove clothing to look.

It is very important that you conduct head-to-toe assessments systematically; doing so will make the procedure quicker and more accurate with each assessment.

- Pay careful attention
- Look, listen, and feel for anything unusual
- Suspect a spinal injury in all unconscious survivors and treat accordingly

Remember to check your own hands for patient bleeding as you perform the head-to-toe assessment.

Check body parts from the top to the bottom for continuity of bones and soft tissue injuries (DCAP-BTLS) in the following order:

1. Head
2. Neck
3. Shoulders
4. Chest
5. Arms
6. Abdomen
7. Pelvis
8. Legs

While conducting a head-to-toe assessment, NERT responders should always check for:

- PMS (Pulse, Movement, Sensation) in all extremities
- Medical ID emblems on bracelet or on neck chain

CONDUCTING HEAD-TO-TOE ASSESSMENTS (CONTINUED)

CLOSED-HEAD, NECK, AND SPINAL INJURIES

When conducting head-to-toe assessments, rescuers may come across survivors who have or may have suffered closed-head, neck, or spinal injuries.

A closed-head injury for the participants is a concussion-type injury, as opposed to a laceration, although lacerations can be an indication that the survivor has suffered a closed-head injury.

The main objective when NERT responders encounter suspected injuries to the head or spine is to do no harm. Minimize movement of the head and spine while treating any other life-threatening conditions.

Signs of a Closed-Head, Neck, or Spinal Injury

The signs of a closed-head, neck, or spinal injury most often include:

- Change in consciousness
- Inability to move one or more body parts
- Severe pain or pressure in head, neck, or back
- Tingling or numbness in extremities
- Difficulty breathing or seeing
- Heavy bleeding, bruising, or deformity of the head or spine
- Blood or fluid in the nose or ears
- Bruising behind the ear
- “Raccoon” eyes (bruising around eyes)
- “Uneven” pupils
- Seizures
- Nausea or vomiting
- Survivor found under collapsed building material or heavy debris

If the survivor is exhibiting any of these signs, he or she should be treated as having a closed-head, neck, or spinal injury.

CONDUCTING HEAD-TO-TOE ASSESSMENTS (CONTINUED)

STABILIZING THE HEAD

In a disaster environment, ideal equipment is rarely available. NERT responders may need to be creative by:

- Looking for materials that can be used as a backboard — a door, desktop, building materials — anything that might be available.
- Looking for items that can be used to stabilize the head on the board — towels, draperies, or clothing — by tucking them snugly on either side of the head to immobilize it.

Remember: Moving survivors with suspected head, neck, or spinal injury requires sufficient survivor stabilization. If the rescuer or survivor is in immediate danger, however, safety is more important than any potential spinal injury and the rescuer should move the survivor from the area as quickly as possible.

EXERCISE: CONDUCTING HEAD-TO-TOE ASSESSMENT

Purpose: This exercise will give you a chance to practice conducting head-to-toe assessments.

Instructions:

1. After breaking into pairs, the person on the right will be the survivor.
2. The rescuer will conduct a head-to-toe assessment following the previously demonstrated procedure. Repeat.
3. After making two observed head-to-toe assessments, the survivor and the rescuer swap roles.

TREATING BURNS

As always, the first step in treating burns is to conduct a thorough size up.

A few examples of burn-related size up questions to ask are:

- What caused the burn?
- Is the danger still present?
- When did the burning cease?

The objectives of first aid treatment for burns are to:

- Cool the burned area
- Cover with a sterile cloth to reduce the risk of infection (by keeping fluids in and germs out)

Burns may be caused by heat, chemicals, electrical current, or radiation. The severity of a burn depends on the:

- Temperature of the burning agent
- Period of time that the survivor was exposed
- Area of the body that was affected
- Size of the area burned
- Depth of the burn

BURN CLASSIFICATIONS

The skin has three layers:

- The epidermis, or outer layer of skin, contains nerve endings and is penetrated by hairs.
- The dermis, or middle layer of skin, contains blood vessels, oil glands, hair follicles, and sweat glands.
- The subcutaneous layer, or innermost layer, contains blood vessels and overlies the muscles.

Depending on the severity, burns may affect all three layers of skin.

TREATING BURNS (CONTINUED)

BURN CLASSIFICATION

Classification	Skin Layers Affected	Signs
Superficial	Epidermis	Reddened, dry skin Pain Swelling (possible)
Partial Thickness	Epidermis Partial destruction of dermis	Reddened, blistered skin Wet appearance Pain Swelling (possible)
Full Thickness	Complete destruction of epidermis and dermis Possible subcutaneous damage (destroys all layers of skin and some or all underlying structures)	Whitened, leathery, or charred (brown or black) Painful or relatively painless

LIST OF GUIDELINES FOR TREATING BURNS

- Remove the survivor from the burning source. Put out any flames and remove smoldering clothing unless it is stuck to the skin.
- Cool skin or clothing, if they are still hot, by immersing them in cool water for not more than 1 minute or covering with clean compresses that have been soaked in cool water and wrung out. Cooling sources include water from the bathroom or kitchen; garden hose; and soaked towels, sheets, or other cloths. Treat all survivors of full thickness burns for shock.

  Infants, young children, and older persons, and persons with severe burns, are more susceptible to hypothermia. Therefore, rescuers should use caution when applying cool dressings on such persons. A rule of thumb is do not cool more than 15% of the body surface area (the size of one arm) at once, to reduce the chances of hypothermia.
- Cover loosely with dry, sterile dressings to keep air out, reduce pain, and prevent infection.
- Wrap fingers or toes loosely and individually when treating burns to hands and feet.
- Loosen clothing near the affected area. Remove jewelry if necessary, taking care to document what was removed, when, and to whom it was given.
- Elevate burned extremities higher than the heart.
- Do not use ice. Ice causes vessel constriction.
- Do not apply antiseptics, ointments, or other remedies.
- Do not remove shreds of tissue, break blisters, or remove adhered particles of clothing. (Cut burned-in clothing around the burn.)

TREATING BURNS (CONTINUED)

When treating a burn survivor:

- **Do NOT** use ice. Ice causes vessel constriction.
- **Do NOT** apply antiseptics, ointments, or other remedies.
- **Do NOT** remove shreds of tissue, break blisters, or remove adhered particles of clothing. (Cut burned-in clothing around the burn.)

GENERAL GUIDELINES FOR TREATING CHEMICAL AND INHALATION BURNS

Chemical and inhalation burns vary from traditional heat-related burns in their origin and treatment. Keep in mind that suspicion of either chemical or inhalation burns elevates the survivor's status to "I".

GUIDELINES FOR TREATING CHEMICAL BURNS

Unlike more traditional burns, chemical burns do not result from extreme heat, and therefore treatment differs greatly.

Chemical burns are not always obvious. You should consider chemical burns as a possibility if the survivor's skin is burning and there is no sign of a fire.

1. Protect yourself from contact with the substance. Use your protective gear — especially goggles, mask, and gloves.
2. Ensure that any affected clothing or jewelry is removed.
3. If the irritant is dry, gently brush away as much as possible. Always brush away from the eyes and away from the survivor and you.
4. Use lots of cool running water to flush the chemical from the skin for 15 minutes. Running water will dilute the chemical to prevent the injury from getting worse.
5. Apply cool, wet compress to relieve pain.
6. Cover the wound very loosely with a dry, sterile or clean cloth so that the cloth will not stick to the wound.
7. Treat for shock if appropriate.

GUIDELINES FOR TREATING INHALATION BURNS

Remember that 60 to 80% of fire fatalities are the result of smoke inhalation. Whenever fire and/or smoke is present, NERT responders should assess survivors for signs and symptoms of smoke inhalation. These are indicators that an inhalation burn is present:

- Sudden loss of consciousness
- Evidence of respiratory distress or upper airway obstruction
- Soot around the mouth or nose
- Singed facial hair
- Burns around the face or neck

TREATING BURNS (CONTINUED)

GUIDELINES FOR TREATING INHALATION BURNS (CONTINUED)

The patient may not present these signs and symptoms until hours (sometimes up to a full 24 hours) after the injury occurred, and such symptoms may be overlooked when treating more obvious signs of trauma.

Smoke inhalation is the number one fire-related cause of death. If NERT responders have reason to suspect smoke inhalation, be sure the airway is maintained, and alert a medical professional as soon as possible.

WOUND CARE

The main treatment for wounds includes:

- Control bleeding
- Clean the wound
- Apply dressing and bandage

Treatment for controlling bleeding was covered in Unit 3. The focus of this section is on cleaning and bandaging, which will help to prevent secondary infection.

CLEANING AND BANDAGING WOUNDS

Wounds should be cleaned by irrigating with clean, room temperature water.

NEVER use hydrogen peroxide to irrigate the wound.

You should not scrub the wound. A bulb syringe is useful for irrigating wounds. In a disaster, a turkey baster may also be useful.

When the wound is thoroughly cleaned, you will need to apply a dressing and bandage to help keep it clean and control bleeding.

There is a difference between a dressing and a bandage:

- A dressing is applied directly to the wound. Whenever possible, a dressing should be sterile.
- A bandage holds the dressing in place.

If a wound is still bleeding, the bandage should place enough pressure on the wound to help control bleeding without interfering with circulation.

WOUND CARE (CONTINUED)

RULES OF DRESSING

You should follow these rules:

1. If there is active bleeding (i.e., if the dressing is soaked with blood), redress over the existing dressing and maintain pressure and elevation to control bleeding.
2. In the absence of active bleeding, remove the dressings, flush the wound, and then check for signs of infection at least every 4 to 6 hours.

Signs of possible infection include:

- Swelling around the wound site
- Discoloration
- Discharge from the wound
- Red striations from the wound site

If necessary and based on reassessment and signs of infection, change the treatment priority (e.g., from Delayed to Immediate).

AMPUTATIONS

The main treatments for amputation (the traumatic severing of a limb or other body part):

- Control bleeding
- Treat shock

When the severed body part can be located, NERT responders should:

- Save tissue parts, wrapped in clean material and placed in a plastic bag, if available. Label them with the date, time, and survivor's name.
- Keep the tissue parts cool, but NOT in direct contact with ice
- Keep the severed part with the survivor

IMPALED OBJECTS

Sometimes, you may also encounter some survivors who have foreign objects lodged in their bodies — usually as the result of flying debris during the disaster.

When a foreign object is impaled in a patient's body, you should:

- Immobilize the affected body part
- Not attempt to move or remove the object, unless it is obstructing the airway
- Control bleeding at the entrance wound without placing pressure on the object
- Clean and dress the wound making sure to stabilize the impaled object. Wrap bulky dressings around the object to keep it from moving.

WOUND CARE (CONTINUED)

TREATING FRACTURES, DISLOCATIONS, SPRAINS, AND STRAINS

The objective when treating a suspected fracture, sprain, or strain is to immobilize the injury and the joints immediately above and below the injury site.

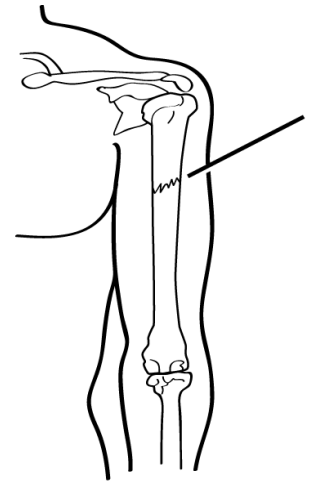
Because it is difficult to distinguish among fractures, sprains, or strains, if uncertain of the type of injury, NERT responders should treat the injury as a fracture.

FRACTURES

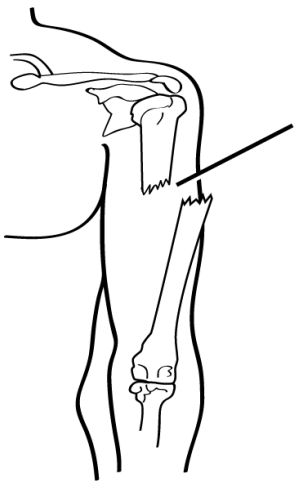
A fracture is a complete break, a chip, or a crack in a bone. There are several types of fractures.

- A closed fracture is a broken bone with no associated wound. First aid treatment for closed fractures may require only splinting.
- An open fracture is a broken bone with some kind of wound that allows contaminants to enter into or around the fracture site.

Closed and Open Fractures



Closed Fracture
Closed Fracture in which the fracture does not puncture the skin.



Open Fracture
Open Fracture in which the bone protrudes through the skin.

TREATING FRACTURES, DISLOCATIONS, SPRAINS, AND STRAINS (CONTINUED)

TREATING AN OPEN FRACTURE

Open fractures are more dangerous than closed fractures. They pose a significant risk of severe bleeding and infection. Therefore, they need to be checked more frequently.

- Do not draw the exposed bone ends back into the tissue.
- Do not irrigate the wound.

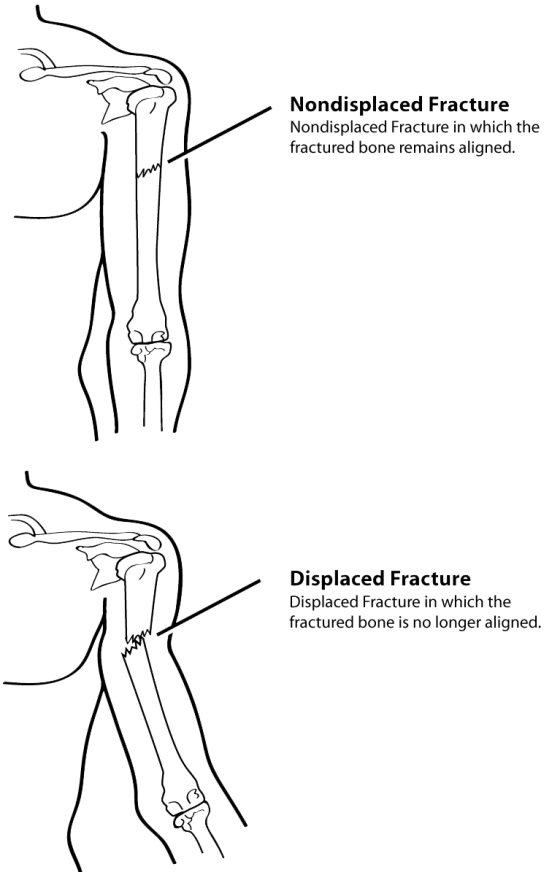
You should:

- Cover the wound with a sterile dressing
- Splint the fracture without disturbing the wound
- Place a moist 4 by 4-inch dressing over the bone end to keep it from drying out

If the limb is angled, then there is a displaced fracture. Displaced fractures may be described by the degree of displacement of the bone fragments.

Nondisplaced fractures are difficult to identify/ The main signs are pain and swelling. Treat a suspected fracture as a fracture until professional treatment is available.

Displaced and Nondisplaced Fractures



TREATING FRACTURES, DISLOCATIONS, SPRAINS AND STRAINS (CONTINUED)

DISLOCATIONS

Dislocations are another common injury in emergencies.

A dislocation is an injury to the ligaments around a joint that is so severe that it permits a separation of the bone from its normal position in a joint.

The signs of a dislocation are similar to those of a fracture, and a suspected dislocation should be treated like a fracture.

If dislocation is suspected, be sure to assess PMS (Pulse, Movement, Sensation) in the affected limb before and after splinting/immobilization. If PMS is compromised, the patient's treatment priority is elevated to "I."

You should not try to relocate a suspected dislocation. You should immobilize the joint until professional medical help is available.

SPRAINS AND STRAINS

A sprain involves a stretching or tearing of ligaments at a joint and is usually caused by stretching or extending the joint beyond its normal limits.

A sprain is considered a partial dislocation, although the bone either remains in place or is able to fall back into place after the injury.

The most common signs of a sprain are:

- Tenderness at the site of the injury
- Swelling and/or bruising
- Restricted use or loss of use

The signs of a sprain are similar to those of a nondisplaced fracture. Therefore, you should not try to treat the injury other than by immobilization and elevation.

A strain involves a stretching and/or tearing of muscles or tendons. Strains most often involve the muscles in the neck, back, thigh, or calf.

In some cases, strains may be difficult to distinguish from sprains or fractures. Whether an injury is a strain, sprain, or fracture, treat the injury as if it is a fracture.

TREATING FRACTURES, DISLOCATIONS, SPRAINS AND STRAINS (CONTINUED)

SPLINTING

Splinting is the most common procedure for immobilizing an injury.

Cardboard is the material typically used for makeshift splints, but you can use:

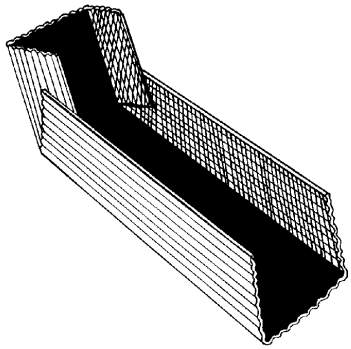
- Soft materials. Towels, blankets, or pillows, tied with bandaging materials or soft cloths
- Rigid materials. A board, metal strip, folded magazine or newspaper, or the like.

Anatomical splints may also be created by securing a fractured bone to an adjacent unfractured bone. Anatomical splints are usually reserved for fingers and toes, but, in an emergency, legs may also be splinted together.

Soft materials should be used to fill the gap between the splint and the body part.

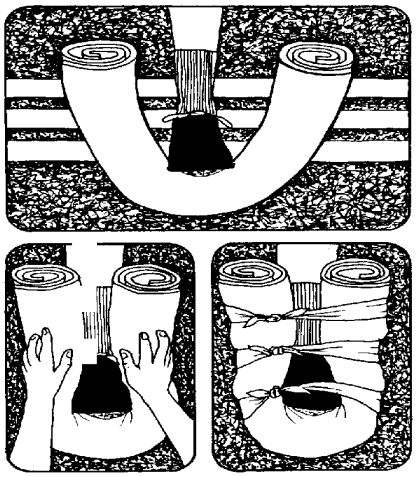
With this type of injury, there will be swelling. Remove restrictive clothing, shoes, and jewelry when necessary to prevent these items from acting as unintended tourniquets.

SPLINT ILLUSTRATIONS



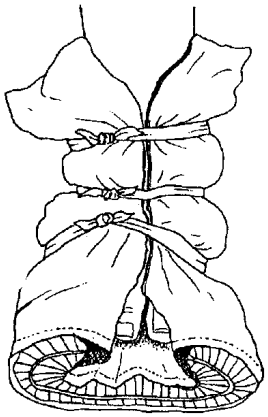
Cardboard Splint

Cardboard Splint in which the edges of the cardboard are turned up to form a "mold" in which the injured limb can rest.



Splinting Using a Towel

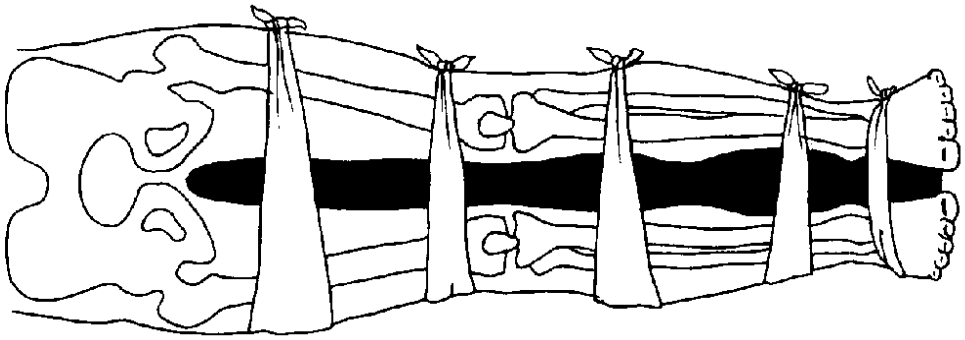
Splinting using a towel, in which the towel is rolled up and wrapped around the limb, then tied in place.



Pillow splint

Pillow splint, in which the pillow is wrapped around the limb and tied.

Splint Illustrations



Anatomical Splint

Anatomical splint in which the injured leg is tied at intervals to the non-injured leg, using a blanket as padding between the legs.

We will not have time to practice splinting in this course. CPR/FA training is available through NERT. Check the Website for details. (Cost as of 2/2020 is $30)

NASAL INJURIES

Bleeding from the nose can have several causes. Bleeding from the nose can be caused by:

- Blunt force to the nose
- Skull fracture
- Non-trauma-related conditions such as sinus infections, high blood pressure, and bleeding disorders

A large blood loss from a nosebleed can lead to shock. Actual blood loss may not be evident because the survivor will swallow some amount of blood. Those who have swallowed large amounts of blood may become nauseated and vomit.

These are methods for controlling nasal bleeding:

- Pinch the nostrils together
- Put pressure on the upper lip just under the nose
- Have the survivor sit with the head slightly forward so that blood trickling down the throat will not be breathed into the lungs. Do not put the head back.
- Ensure that the survivor's airway remains open
- Keep the survivor quiet. Anxiety will increase blood flow.

TREATING COLD-RELATED INJURIES

Cold-related injuries include:

- Hypothermia, which is a condition that occurs when the body's temperature drops below normal
- Frostbite, which occurs when extreme cold shuts down blood flow to extremities, causing tissue death

HYPOTHERMIA

Hypothermia may be caused by exposure to cold air or water or by inadequate food combined with inadequate clothing and/or heat, especially in older people.

The primary signs and symptoms of hypothermia are:

- A body temperature of 95° F (37° C) or lower
- Redness or blueness of the skin
- Numbness accompanied by shivering

In later stages, hypothermia will be accompanied by:

- Slurred speech
- Unpredictable behavior
- Listlessness

TREATING COLD-RELATED INJURIES (CONTINUED)

Because hypothermia can set in within only a few minutes, you should treat survivors who have been rescued from cold air or water environments.

- Remove wet clothing.
- Wrap the survivor in a blanket or sleeping bag and cover the head and neck.
- Protect the survivor against the weather.
- Provide warm, sweet drinks and food to conscious survivors. Do not offer alcohol.
- Do not attempt to use massage to warm affected body parts.
- Place an unconscious survivor in the recovery position:
  1. Place the survivor's arm that is nearest to you at a right angle against the ground, with the palm facing up.
  2. Move the survivor's other arm across his or her chest and neck, with the back of the survivor's hand resting against his or her cheek.
  3. Grab a hold of the knee furthest from you and pull it up until the knee is bent and the foot is flat on the floor.
  4. Pull the knee toward you and over the survivor's body while holding the survivor's hand in place against his or her cheek.
  5. Position the survivor's leg at a right angle against the floor so that the survivor is lying on his or her side.
- If the survivor is conscious, place him or her in a warm bath.

HYPOTHERMIA (CONTINUED)

Do not to allow the survivor to walk around even when he or she appears to be fully recovered. If the survivor must be moved outdoors, cover the survivor's head and face.

FROSTBITE

A person's blood vessels constrict in cold weather in an effort to preserve body heat. In extreme cold, the body will further constrict blood vessels in the extremities in an effort to shunt blood toward the core organs (heart, lungs, intestines, etc.). The combination of inadequate circulation and extreme temperatures will cause tissue in these extremities to freeze, and in some cases, tissue death will result. Frostbite is most common in the hands, nose, ears, and feet.

There are several key signs and symptoms of frostbite:

- Skin discoloration (red, white, purple, black)
- Burning or tingling sensation, at times not localized to the injury site
- Partial or complete numbness

TREATING COLD-RELATED INJURIES (CONTINUED)

A patient suffering from frostbite must be warmed slowly! Thawing the frozen extremity too rapidly can cause chilled blood to flow to the heart, which can shock or stop it.

- Immerse injured area in warm (NOT hot) water, approximately 107.6° F.
- Do NOT allow the body part to re-freeze as this will exacerbate the injury.
- Do NOT attempt to use massage to warm body parts.

Wrap affected body parts in dry, sterile dressing. It is vital this task be completed carefully. The formation of ice crystals in the tissue; rubbing could cause damage!

TREATING HEAT-RELATED INJURIES

There are several heat-related injuries that you may encounter in a disaster scenario:

- Heat cramps are muscle spasms brought on by over-exertion in extreme heat.
- Heat exhaustion occurs when an individual exercise or works in extreme heat, resulting in loss of body fluids through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in shock.
- Heat stroke is life-threatening. The survivor's temperature control system shuts down. Body temperature can rise so high that brain damage and death may result.

HEAT EXHAUSTION

The symptoms of heat exhaustion are:

- Cool, moist, pale, or flushed skin
- Heavy sweating
- Headache
- Nausea or vomiting
- Dizziness and Exhaustion

A patient suffering heat exhaustion will have a near normal body temperature. If left untreated, heat exhaustion will develop into heat stroke.

HEAT STROKE

Heat stroke is characterized by some or all of the following symptoms:

- Hot, red skin
- Lack of perspiration
- Changes in consciousness
- Rapid, weak pulse and rapid, shallow breathing

In a heat stroke survivor, body temperature can be very high — as high as 105º F. If an individual suffering from heat stroke is not treated, death can result

TREATING HEAT-RELATED INJURIES (CONTINUED)

TREATMENT

Treatment is similar for both heat exhaustion and heat stroke.

1. Take the survivor out of the heat and place in a cool environment.
2. Cool the body slowly with cool, wet towels or sheets. If possible, in a cool bath.
3. Have the survivor drink water, SLOWLY, at the rate of approximately half a glass of water every 15 minutes. Consuming too much water too quickly will cause nausea and vomiting in a survivor of heat sickness.
4. If the survivor is experiencing vomiting, cramping, or is losing consciousness, DO NOT administer food or drink. Alert a medical professional as soon as possible and keep a close watch on the individual until professional help is available.

BITES AND STINGS

The specific symptoms vary, but, generally, bites and stings are accompanied by redness, itching, tingling or burning at the site of the injury, and often a welt on the site.

TREATMENT

1. Remove the stinger if still present by scraping the edge of a credit card or other stiff, straight-edged object across the stinger. Do not use tweezers; these may squeeze the venom sac and increase the amount of venom released.
2. Wash the site thoroughly with soap and water.
3. Place ice (wrapped in a washcloth) on the site of the sting for 10 minutes and then off for 10 minutes. Repeat this process.

You may help the survivor take his or her own allergy medicine (Benadryl, etc.), but you may NOT dispense medications.

BITES AND STINGS AND ALLERGIC REACTIONS

The greatest concern with any insect bite or sting is a severe allergic reaction, or anaphylaxis. Anaphylaxis occurs when an allergic reaction becomes so severe that the airway is compromised. If you suspect anaphylaxis:

1. Check airway and breathing.
2. Calm the individual.
3. Remove constrictive clothing and jewelry as body parts can swell.
4. If possible, find and help administer a survivor’s Epi-pen. Many severe allergy sufferers carry one at all times.
5. Watch for signs of shock and treat appropriately.

UNIT SUMMARY

To safeguard public health, take measures to maintain proper hygiene and sanitation, and purify water if necessary. All public health measures should be planned in advance and practiced during exercises.

- Disaster medical operations:
  - Triage
  - Treatment
  - Transport
  - Document
- Treatment areas must be established as soon as casualties are confirmed and should:
  - Be in a safe area that is close to, but uphill, upwind from the hazard area
  - Accessible by transportation vehicles
  - Expandable

  Depending on the circumstances, a NERT may establish a central medical treatment location and/or treatment location at incident sites where many survivors are injured.
- Head-to-toe assessments should be verbal and hands-on. Always conduct head-to-toe assessments in the same way — beginning with the head and moving toward the feet. If injuries to the head, neck, or spine are suspected, the objective is to avoid additional injury. Use stabilization and a backboard if the survivor must be moved.
- Burns are classified as superficial, partial thickness, or full thickness depending on severity and the depth of skin layers involved. Remove the source of the burn, cool the burn, and cover it. For full thickness burns, always treat for shock.
- The main first aid treatment for wounds consists of controlling bleeding, dressing and bandaging. In the absence of active bleeding, dressings must be removed, and the wound checked for infection at least every 4 to 6 hours. If there is active bleeding, a new dressing should be placed over the existing dressing.
- Fractures, dislocations, sprains, and strains may have similar signs. Treat suspected fractures, sprains, and strains by immobilizing the affected area using a splint.
- The key to treatment of cold-related injuries such as hypothermia and frostbite is to warm the survivor slowly.
- Anaphylaxis is the most critical concern when an insect bite is suspected. Know how to use an Epi-pen and make sure to monitor the survivor's airway until professional help arrives.

HOMEWORK ASSIGNMENT

Read and become familiar with Unit 5: Search and rescue operations.

Try practicing a rapid head-to-toe assessment on a friend or family member.

UNIT 5: LIGHT SEARCH AND RESCUE OPERATIONS

In this unit you will learn about:

- **Search and Rescue Size up:** How to size up the situation in which the search and rescue teams will operate.
- **Conducting Interior and Exterior Search Operations:** How to search systematically for disaster survivors.
- **Conducting Rescue Operations:** Safe techniques for lifting, leveraging, cribbing, and survivor removal.

Introduction and Unit Overview

Search and rescue consist of three separate operations:

- Size up involves assessing the situation and determining a safe action plan (using the 9-step size up model).
- Search involves locating survivors and documenting their location.
- Rescue involves the procedures and methods required to extricate the survivors.

Previous disasters have shown that the first response to trapped survivors immediately after almost every disaster is by spontaneous, untrained, and well-intentioned persons who rush to the site of a collapse in an attempt to free the survivors. Often, these spontaneous rescue efforts result in serious injuries and compounded problems.

Rescue efforts should be planned and practiced in advance. People, including rescuers, have died when the rescuers weren't prepared and trained.

GOALS OF SEARCH AND RESCUE

The goals of search and rescue operations are to:

- Rescue the greatest number of people in the shortest amount of time
- Get the walking wounded and ambulatory survivors out first
- Rescue lightly trapped survivors next
- Keep the rescuer safe

This unit focuses on the components of an effective search and rescue operation — size up, search, and rescue — and the methods and techniques that rescuers can use to locate and safely remove survivors.

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Identify size up requirements for potential search and rescue situations.
- Describe the most common techniques for searching, both interior and exterior.
- Use safe techniques for debris removal and survivor extrication.
- Describe ways to protect rescuers during search and rescue operations.

UNIT TOPICS

This unit will provide you with the knowledge and skills that you will need:

- Safety During Search and Rescue Operations
- Conducting Interior and Exterior Searches
- Conducting Rescue Operations

Safety During Search and Rescue Operations

NERT SEARCH AND RESCUE SIZE UP

Like every other NERT operation, search and rescue requires size up at the beginning of the operation and continually as long as the operation continues.

Size up Steps:

1. Gather facts
2. Assess damage
3. Consider probabilities
4. Assess your situation
5. Establish priorities
6. Make decisions
7. Develop a plan of action
8. Take action
9. Evaluate progress

NERT Search and Rescue Size up Checklist		
Step 1: Gather Facts		
Time		
Does the time of day or week affect search and rescue efforts? How?	Yes ☐	No ☐
Type of Construction and Terrain		
What type(s) of structure(s) is (are) involved? What type(s) of construction is (are) involved? What type(s) of terrain is (are) involved?		
Occupancy		
Are the structures occupied? If yes, how many people are likely to be affected?	Yes ☐	No ☐
Are there special considerations (e.g., children, elderly)? If yes, what are the special considerations?	Yes ☐	No ☐
Weather		
Will weather conditions affect your safety? If yes, how will your safety be affected?	Yes ☐	No ☐
Will weather conditions affect the search and rescue situation? If yes, how will the search and rescue situation be affected?	Yes ☐	No ☐
Hazards		
Are hazardous materials involved? If yes, at what location?	Yes ☐	No ☐
Are any other types of hazards involved? If yes, what other hazards?	Yes ☐	No ☐

NERT Search and Rescue Size up Checklist		
Step 2: Assess and Communicate the Damage		
For structural searches, take a lap around the building. Is the damage beyond the NERT's capability? If yes, what special requirements or qualifications are required?	Yes ☐	No ☐
Have the facts and the initial damage assessment been communicated to the appropriate person(s)?	Yes ☐	No ☐
Step 3: Consider Probabilities		
Is the situation stable?	Yes ☐	No ☐
Is there great risk or potential for more disaster activity that will impact personal safety? If yes, what are the known risks?	Yes ☐	No ☐
What else could go wrong?		
Step 4: Assess Your Own Situation		
What resources are available with which you can attempt the search and rescue?		
What equipment is available?		
Step 5: Establish Priorities		
Can a search and rescue be *safely* attempted by NERT responders? If no, do *not* attempt a search and rescue.	Yes ☐	No ☐
Are there other, more pressing needs at the moment? If yes, list.	Yes ☐	No ☐

NERT Search and Rescue Size up Checklist	
Step 6: Make Decisions	
Where will deployment of available resources do the most good while maintaining an adequate margin of safety?	
Step 7: Develop Plan of Action	
Determine how personnel and other resources should be deployed.	
Step 8: Take Action	
Put the plan into effect.	
Step 9: Evaluate Progress	
Continually size up the situation to identify changes in the: Scope of the problem Safety risks Resource availability	

Step 1: Gather Facts

The facts of the situation must guide your search and rescue efforts.

When gathering facts, NERT members need to consider:

- The time of the event and day of the week. At night, more people will be in their homes, so the greatest need for search and rescue will be in residential settings. Conversely, during the day, people will be at work, so the need will be in commercial buildings. Search and rescue operations may also be affected by where people are located in their homes and the amount of daylight available.
- Construction type and terrain. Some types of construction are more susceptible to damage than others. The type of terrain will affect how the search is conducted.
- Occupancy. The purpose for which the structure was designed may indicate the likely number of survivors and their location.
- Weather. Severe weather will have an effect on survivors and rescuers alike and will certainly hamper rescue efforts. Forecasts of severe weather should be considered as a limiting factor on the time period during which search and rescue can occur.
- Hazards. Knowledge of other potential hazards in the general and immediate areas is important to search and rescue efforts. For example, if a gas leak is suspected, taking the time to locate and shut off the gas can have a big impact in loss of life.

SAFETY DURING SEARCH AND RESCUE OPERATIONS (CONTINUED)

STEP 2: ASSESS AND COMMUNICATE DAMAGE

There are general guidelines for assessing damage in interior searches and exterior searches. When in doubt about the condition of a building, NERT responders should always use the more cautious assessment. If unsure about whether a building is moderately or heavily damaged, assume heavy damage. The NERT mission changes depending on the amount of structural damage.

NERT MISSION AND TYPES OF DAMAGES

The NERT mission for interior searches changes if:

- Damage is light (superficial or cosmetic damage, superficial cracks or breaks in the wall surface, minor damage to the interior contents)

  Locate; triage; treat the killers; continue size up; and document.

- Damage is moderate (visible signs of damage, decorative work damaged or fallen, many visible cracks in the wall surface, major damage to interior content, building is on its foundation)

  Locate; treat airway, major bleeding, and shock; evacuate; warn others; continue size up while minimizing the number of rescuers and time spent inside the structure.

- Damage is heavy (partial or total collapse, tilting, obvious structural instability, building off its foundation, heavy smoke or fire, hazardous materials inside, gas leaks)

  Secure the building perimeter and warn others of the danger in entering the building.

NERT members are not to enter a building with heavy damage under any circumstances.

LIGHT DAMAGE

Light damage includes:

- Superficial damage
- Broken windows
- Superficial cracks or breaks in the wall surface, for example, fallen or cracked plaster
- Minor damage to the interior contents

SAFETY DURING SEARCH AND RESCUE OPERATIONS (CONTINUED)

MODERATE DAMAGE

Moderate damage includes:

- Visible signs of damage
- Decorative work damaged or fallen
- Many visible cracks or breaks in the wall surface
- Major damage to interior contents
- Building still on foundation

HEAVY DAMAGE

Heavy damage includes:

- Partial or total collapse
- Tilting
- Obvious structural instability
- Building off foundation

ASSESSING DAMAGE

Assessing the damage of a building or structure will require an examination from all sides. Be sure to do an initial "lap around."

In assessing damage, NERT responders must consider probable levels of damage based on the type and age of construction.

In addition to a visual assessment, rescuers should also “listen” to damaged structures. If a building is creaking or “groaning,” it is unstable and should not be entered.

COMMUNICATING DAMAGE

You can describe different locations within and around the structure by using the ABCD standard, with A corresponding to the front of the building and B, C, and D representing the sides of the building moving clockwise from A.

Using this system, the area inside of a structure can be further broken down by quadrants to facilitate communication. For instance, a hazard or survivor located closest to the A and B sides of the structure is in the A/B quadrant.

You must communicate your findings to the NERT neighborhood command post or responding agencies.

Probable Severity and Type of Earthquake Damage Based on Construction Type

Construction Type	Description	Probable Damage Areas	Severity
Single-Family Dwelling	Wood frame	Masonry chimney Utilities	Light
	▪ Pre-1933	Foundation movement Utilities Porches	Moderate
	Hillside	Unique hazards Ground failure	Heavy
Multiple-Family Dwelling	Up-and-down and/or side-by-side living units	Soft first floor Utilities	Moderate
Unreinforced Brick	Pre-1933 construction Lime or sand mortar "King Row" or "Soldier Row" (bricks turned on end every 5-7 rows) Reinforcing plates Arched windows and doors Recessed windows and	Walls collapse, then roof	Heavy
Tilt-Up	Large warehouses and plants Concrete slabs lifted into place Walls inset approximately 6-8 inches Lightweight roof construction	Roof collapses, then walls	Heavy
High-Rise	Steel reinforced	Broken glass Content movement Exterior trim and fascia	Light

SAFETY DURING SEARCH AND RESCUE OPERATIONS (CONTINUED)

STEP 3: CONSIDER PROBABILITIES

Because you will be working in such close proximity to the dangerous situation, considering what will probably happen and what could happen are of critical importance. Be sure to identify potentially life-threatening hazards and ask:

- How stable is the situation? Even within a structure that appears from the outside to have only minimal or moderate damage, nonstructural damage or instability inside the structure can pose real danger to the rescue team. NERT responders should think about what they already know about the structure that's been damaged. Are lawn chemicals, paints, or other potentially hazardous materials stored within the structure? How are they stored? Where are they? It won't take much time to answer these types of questions, but the answers could make a huge difference in how to approach the search.
- What else could go wrong? Based on the information gathered during Steps 1 and 2 of the size up, NERT responders should take a few moments to play "What if?" to try to identify additional risks that they may face. What if the electricity fails during the search? What if a wall that appears stable shifts and collapses?
- What does it all mean for the search and rescue? Based on the probabilities, NERTs should think about what they can do to reduce the risks associated with the probabilities that they have identified. Is a spotter necessary to look for movement that could indicate a possible collapse and warn the rescue team? Is some remedial action required to stabilize nonstructural hazards before beginning the search? Remember that YOUR safety is the first priority.

STEP 4: ASSESS YOUR SITUATION

Remember that size up is a building process, with each step building upon the previous steps until the decision is made to begin the search and rescue operation (or that the situation is unsafe). You need to draw on everything you've learned from Steps 1 through 3 to assess your situation to determine:

- Whether the situation is safe enough to continue
- The risks that rescuers will face if they continue
- What resources will be needed to conduct the operation safely and what resources are available

Assessing resources, including personnel, tools, and equipment, is extremely important to search and rescue operations.

Search and Rescue Resource Planning Questions	
Resource	**Planning Questions**
Personnel	How many trained NERT members are available for this operation? Who lives and/or works in the area? During which hours are these people most likely to be available? What skills or hobbies do they have that might be useful in search and rescue operations? What might be the most effective means of mobilizing their efforts?
Equipment	What equipment is available locally that might be useful for search and rescue? Where is it located? How can it be accessed? On which structures (or types of structures) might it be most effective?
Tools	What tools are available that might be useful for lifting, moving, or cutting disaster debris?

RESCUE RESOURCES

Search and rescue resources include:

- Personnel
  - How many NERT responders are available for this operation?
  - In addition, who lives and/or works in the area?
  - When are they likely to be available?
  - Do they have skills that might be useful in search and rescue operations?
  - How can their efforts be mobilized?
- Equipment
  - What equipment is available that might be useful for search and rescue?
  - Where is it located?
  - How can it be accessed?
  - On which structures (or types of structures) might it be most effective?
- Tools
  - What tools are available that might be useful for lifting, moving, or cutting debris?

SAFETY DURING SEARCH AND RESCUE OPERATIONS (CONTINUED)

STEP 5: ESTABLISH PRIORITIES

After evaluating the situation and keeping in mind that **the safety of the NERT responder is always the top priority**, the next step is to determine:

- What should be done?
- In what order?

Remember your goal: to rescue the greatest number in the shortest amount of time. Think through the situation logically before acting.

STEP 6: MAKE DECISIONS

At this point in the size up you will make decisions about where to deploy your resources to do the most good while maintaining an adequate margin of safety. Many of your decisions will be based on the priorities established during Step 5 based on:

- The safety of NERT members
- Life safety for survivors and others
- Protection of property
- Protection of the environment

STEP 7: DEVELOP PLAN OF ACTION

Step 7 is where all of the information you have about the situation comes together. During Step 7, the NERT Incident Commander/Team Leader (IC/TL) will decide specifically how the team will conduct its operation, considering the highest priority tasks first.

An action plan does not need to be written, but when search and rescue operations are required, the situation is probably complex enough that a written plan of some type will be important.

A plan should:

- Help focus the operation on established priorities and decisions
- Provide for documentation to be given to responding agencies when they arrive on scene
- Provide for documentation that will become part of the record of the NERT's overall operation

Keep notes as you develop your action plan. Any changes made to the initial plan based on new information that comes in should also be documented.

SAFETY DURING SEARCH AND RESCUE OPERATIONS (CONTINUED)

STEP 8: TAKE ACTION

This step involves putting the plan developed in Step 7 into action.

STEP 9: EVALUATE PROGRESS

Step 9, Evaluate Progress, is the most critical step, not only in terms of evaluating whether the plan works, but also from a safety standpoint.

Remember that size up is ongoing and that information gained during Step 9 needs to be fed back into the decision-making process for possible revision of priorities and updated action planning.

Specific Safety Considerations

Regardless of the severity of structural damage, rescuer safety must be the primary concern.

The two most frequent causes of rescuer deaths are:

- Disorientation
- Secondary collapse

Follow these guidelines during all search and rescue operations:

- Use a buddy system. Successful search and rescue depend on teamwork.
- Be alert for hazards (e.g., power lines, natural gas leaks, hazardous materials, sharp objects, etc.). You should never attempt to search an area where water is rising.
- Use safety equipment. Wearing gloves and a helmet will protect a rescuer's hands and head. Also, the primary cause of rescuer problems after working in a structural collapse is breathing dust, so a dust mask is essential. However, a dust mask will not filter out all harmful materials. If the presence of chemical or biological agents is suspected, NERTs must evacuate to an upwind location and notify professional responders.
- Have backup teams available to allow rotating of teams, prevent fatigue, and ensure help if a team gets into trouble. Have teams drink fluids and eat to keep themselves fresh.

Conducting Interior and Exterior Search Operations

When the decision is made to initiate search operations, NERT field team responders will inspect the area assigned by the NERT Incident Commander/Task Force Leader (IC/TL). NERT roles/assignments covered in class session 5.

The search operation involves two processes:

1. Employing search techniques based on the size up
2. Locating any survivors

By using these processes, search operations will be more efficient, thorough, and safe. They will also facilitate later rescue operations. Although the processes are related, this section addresses them one at a time. Interior search operations are the most common and will be discussed first; exterior search operations will be discussed later in this unit.

LOCATING POTENTIAL SURVIVORS IN A STRUCTURE

The first step in locating potential survivors in a structure is to conduct a size up of the interior of the building to gather more precise information about damage and to develop priorities and plans.

The data gathered will provide information about areas of entrapment — or voids.

STRUCTURAL VOIDS

There are several types of voids:

- Pancake void
- Lean-to void
- "V" void

If NERT members see collapsed floors or walls, they should leave the premises immediately.

INDIVIDUAL VOIDS

Individual voids are spaces into which the survivor may have crawled for protection. Examples of individual voids include bathtubs and the space underneath desks. Children may seek shelter in smaller places like cabinets.

After identifying the possible areas of entrapment, NERT responders must:

- Determine the potential number of survivors
- Identify the most probable areas of entrapment

Some information may be known through assessment, information can be gained by talking to bystanders or those who are familiar with the structure.

CONDUCTING INTERIOR AND EXTERIOR SEARCH OPERATIONS (CONTINUED)

Ask questions when talking with these individuals, including:

- How many people live (or work) in the building?
- Where would they be at this time?
- What is the building layout?
- What have you seen or heard?
- Has anyone come out?
- What are the normal exit routes from the building?

Be aware that bystanders may be confused by the event. They may tend to exaggerate potential numbers or may not even remember the event accurately. Gather as much information as you can, though, because it will be useful for planning search priorities and implementing the search.

SEARCH METHODOLOGY

An effective search methodology:

- Indicates rescuer location
- Locates survivors as quickly and safely as possible
- Prevents duplication of effort

Search Markings

Experienced search and rescue personnel use the following system. The same system will be used by NERTs. This will save fellow NERT responders and other responders time during the search and continual size up of the structure.

1. Upon entering a search area, you will make a mark next to the door to indicate that you are entering. Do not make the mark on the door or on the wall where the door swings. Make a single slash and write the agency or group ID at the “9 o’clock” position. Then write the date and “time in” at the “12 o’clock” position.
2. Upon exiting the search area, make another slash to form an “X” (the agency or group ID will be in the left quadrant). Enter the search “time out” In the top quadrant.
    - Right quadrant: Enter the areas of the structure searched and any specific information about hazards.
    - Lower quadrant: Enter information about the victims found in the search area. “L” represents living survivors, while “D” represents dead victims. The search marking on the front of a structure or building should contain the total number of victims, whereas search markings inside the structure or building will include victim totals for specific search areas. Also indicate where victims and survivors have been taken.

CONDUCTING INTERIOR AND EXTERIOR SEARCH OPERATIONS (CONTINUED)

SEARCH METHODOLOGY (continued)

1. Upon entering each space or room, call out to survivors. Shout something like, "Rescue Team. If anyone can hear my voice, come here." If any survivors come to you, ask them for any information that they may have about the building or others who may be trapped, then give them further directions such as, "Stay here" or "Wait outside" (depending on the condition of the building).

   Remember that even those who are able to get to you may be in shock and confused. When giving directions to survivors, look directly at the survivors, speak in short sentences, and keep their directions simple.

2. Use a systematic search pattern. Ensure that all areas of the building are covered. Examples of systematic search patterns to use include:
   - Bottom-up/top-down
   - Right wall/left wall

Keep in mind that every interior space has six sides — including the floor and ceiling. Rescuers must check all six sides specially to locate hazards such as fixtures that may be hanging from the ceiling.

3. Stop frequently to listen. Listen for tapping, movement, or voices.

4. Triangulate. Triangulation can be used when a potential survivor's location is obscured. If access permits, three rescuers, guided by survivor sounds, form a triangle around the area and direct flashlights into the area. The light shining from different directions will eliminate shadows that could otherwise hide survivors. **Triangulation should not be used as an initial search method.**

5. Report results. Keep complete records both of removed victims and survivors and of survivors who remain trapped or victims who are dead. Report this information to emergency services personnel when they reach the scene.

Exterior Search

In addition to searching inside a structure, NERT responders might also be required to search open areas outside of buildings.

Conducting an effective search in open areas requires that searchers work methodically and follow standard procedures established by those in charge of the search operation. This is true in all cases, and especially if the area to be searched is a crime scene where all potential evidence must be protected.

CONDUCTING INTERIOR AND EXTERIOR SEARCH OPERATIONS (CONTINUED)

When searchers are needed, they assemble in a central staging area and sign in. Authorities will brief the searchers on what they will be looking for, what areas they are responsible for searching, the pattern of the search, and what they should do if they discover the missing person, evidence, or related information.

Exterior search patterns include grid, line, quadrant or zone, and spiral. A grid pattern is typically used in large open areas. To conduct a grid search:

- The area to be searched is viewed as a grid, with searchers initially positioned at one side of the grid.
- The distance between the searchers should be set according to visibility and debris. In all cases, searchers must remain within line of sight and voice contact with searchers on either side of them.
- It is also critical that the area to be covered by each searcher overlaps that of the searchers on either side of them.
- The searchers proceed, maintaining as straight a line as possible across the entire search area. As each searcher moves across the area, they conduct a thorough search for survivors within their designated row of the grid.
- In order to ensure full coverage, NERTs must record each area that has been searched.

A grid search might be particularly useful following a tornado or hurricane.

Conducting Rescue Operations

Rescues involve three primary functions:

- Moving objects and debris to free survivors and to create a safe rescue environment
- Triaging survivors by checking for the “three killers,” airway obstruction, major bleeding, and shock
- Removing survivors as safely and as quickly as possible

CREATING A SAFE ENVIRONMENT

There are three safety considerations for all rescue operations:

- To maintain rescuer safety
- To triage in lightly and moderately damaged buildings
- To evacuate survivors as quickly as possible from moderately damaged buildings while minimizing additional injury

None of these can be achieved without creating as safe an environment as possible before attempting rescue. There are, therefore, certain precautions that rescuers must take to minimize risk.

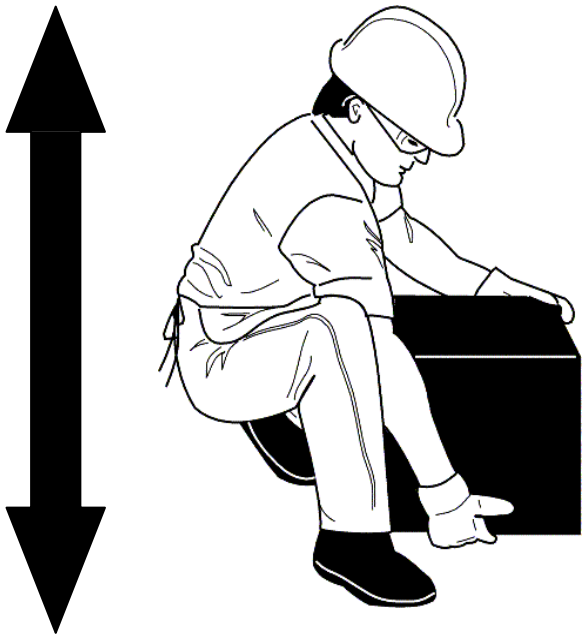
CONDUCTING RESCUE OPERATIONS (CONTINUED)

PRECAUTIONS TO MINIMIZE RISK

There are certain precautions that rescuers must take to minimize risk and increase their chances of achieving their rescue goals.

- Know your limitations. Many volunteers have been injured or killed during rescue operations because they did not pay attention to their own physical and mental limitations. NERT responders should take the time to eat, drink fluids, rest, and relax so that they can return with a clear mind and improved energy.
- Follow safety procedures. Always use the proper safety equipment required for the situation and follow established procedures, including:
  - Work in pairs.
  - Triage and treat only in lightly damaged buildings.
  - In moderately damaged buildings, triage only and remove survivors as quickly as possible.
  - Never enter an unstable structure.
  - Lift by bending the knees, keeping the back straight, and pushing up with the legs.
  - Carry the load close to the body.
  - Lift and carry no more than is reasonable.
  - Remove debris as needed to minimize risk to rescuers and free trapped survivors.

Proper Body Position for Lifting



Proper body position for lifting showing the back straight and lifting with the knees

CONDUCTING RESCUE OPERATIONS (CONTINUED)

LEVERAGING AND CRIBBING

You may encounter situations in which debris needs to be moved to free survivors. In these situations, NERT responders should consider leveraging and cribbing to move and stabilize the debris until the rescue is complete.

- Leveraging is accomplished by wedging a lever under the object that needs to be moved, with a stationary object underneath it to act as a fulcrum. When the lever is forced down over the fulcrum, the far end of the lever will lift the object.
- A crib is a wooden framework used for support or strengthening. Box cribbing means arranging pairs of wood pieces alternately to form a stable rectangle.

Leveraging and cribbing are used together by alternately lifting the object and placing cribbing materials underneath the lifted edge to stabilize it.

Safety is number one: "Lift an inch; crib an inch." Leveraging and cribbing should be gradual — both for stability and to make the job easier.

It may also be necessary to use leveraging and cribbing at more than one location (e.g., front and back) to ensure stability. Leveraging and cribbing at opposite ends should never be done at the same time because doing so will increase the instability of the debris. If leveraging is required at both ends, lift and crib at one end, then repeat the process at the other end.

Positioning the pry tool and the fulcrum correctly is critical for safe operations. The fulcrum and pry tool must be perpendicular (90 degrees) to the edge of the object being lifted. Also, attempting to leverage a heavy object using too sharp an angle is inefficient and can result in back injury.

Box cribbing is stable, but it requires pieces of cribbing material of relatively uniform size. When such material is not available, “unboxed” cribbing can also work effectively to support and stabilize the heavy object.

A variety of cribbing materials may be used for these procedures and you will probably need to improvise by using materials such as tires or structural debris. Whatever you use, don’t put form over function.

When you are able to achieve sufficient lift, you should remove the survivor and reverse the leveraging and cribbing procedure to lower the object. You should never leave an unsafe condition, unless the structure or building is obviously compromised.

When you must remove debris to locate survivors, you should set up a human chain and pass the debris from one person to the next. Be careful, however, to set up the chain in a position that will not interfere with rescue operations.

Wear your PPE to protect yourself at all times. Kneepads can be an important addition to your PPE during rescue operations.

CONDUCTING RESCUE OPERATIONS (CONTINUED)

Leveraging and Cribbing (continued)

1. Conduct a size up of the scene: Gather facts, identify hazards, and establish priorities.

2. Have one person in charge and formulate a plan of action, based upon the information you have received, to identify how and where to lift and crib and how the survivor will be removed from underneath the debris.

3. Gather necessary materials for lifting/cribbing operations: Lever, fulcrum, cribbing blocks, spacers/wedges. During an actual emergency, you may have to use creative, substitute materials.

4. Use cribbing materials to stabilize the object prior to lifting.

5. Distribute cribbing materials as necessary to be readily accessible during the lifting operation.

6. Prepare to lift the object: Assemble the lever and fulcrum at the previously identified location.

7. Assign a person to monitor and be ready to remove the survivor as soon as possible.

8. Initiate the lift, using the lever and fulcrum for mechanical advantage.

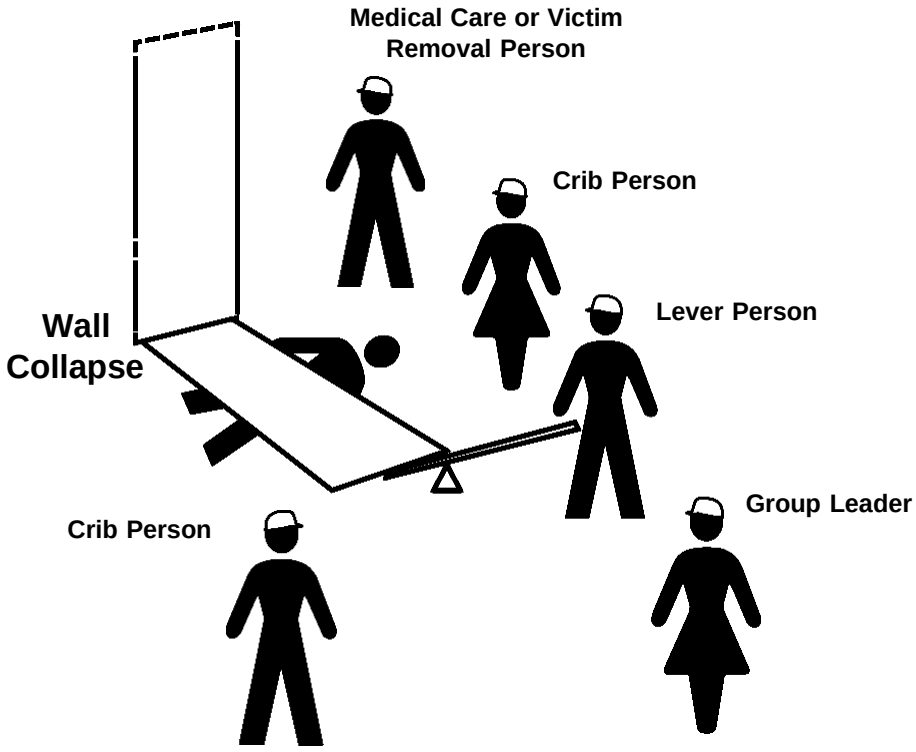
9. As the object is lifted, add cribbing as needed, one layer at a time.

10. When the object is adequately supported, remove the lever and fulcrum. The survivor may then be removed.

11. Unless the structure is obviously compromised and you need to evacuate immediately, reinitiate the lift and begin removing cribbing materials, reversing the process by which the crib was built.

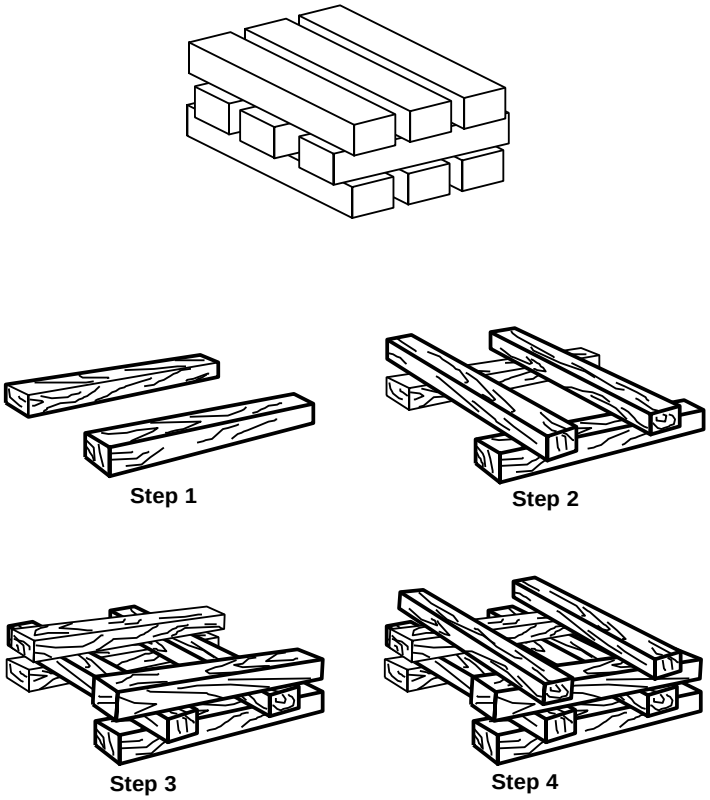
12. Progressively lower the object to the ground. Always return the heavy object to a stable position unless you must evacuate immediately.

13. Before you leave, remember to collect the lifting/cribbing supplies to be available for additional operations.



Team organization for leveraging/cribbing operation, showing the survivor underneath a collapsed wall and the NERT members at the following locations:

- **Group Leader: In front of collapse, positioned so that he or she can view the entire operation while remaining out of the rescuers' way**
- **Lever Person: At the front edge of the collapsed wall and positioned so that he or she can position a fulcrum and lever under the wall**
- **Crib Persons: On either side of the collapsed wall and positioned to enable the placement of cribbing as the wall is raised with the lever**
- **Medical Care/Survivor Removal Person: Next to the Crib Person who is closest to the survivor's head**



Four steps for building box cribbing:

Step 1: Position two pieces of wood parallel to each other on either side of the collapse.

Step 2: Place two pieces of wood perpendicularly across the base pieces.

Steps 3 and 4: Add additional layers of wood, with each perpendicular to the previous level.

REMOVING SURVIVORS

There are two basic types of survivor removal:

- Self-removal or assist
- Lifts and drags

It is usually best to allow an ambulatory survivor to extricate him- or herself. Be aware that sometimes ambulatory survivors are not as strong and uninjured as they think they are. When survivors become free from entrapment, they may need assistance to exit the structure.

CONDUCTING RESCUE OPERATIONS (CONTINUED)

Extrication Method

The type of extrication method selected should depend on the:

- General stability of the immediate environment
- Number of rescuers available
- Strength and ability of the rescuers
- Condition of the survivor

If safety and time permit, you should not use lifts and drags to remove survivors when closed-head or spinal injury is suspected. In such cases, the spine must be stabilized using a backboard. Doors, tables, and similar materials can be used as improvised backboards. The backboard must be able to carry the person and proper lifting techniques must be used.

When moving survivors, rescuers must use teamwork and communication and keep the survivor's spine in a straight line. Remember, rescuer safety and the condition of the building will dictate the approach.

One-Person Arm Carry

If a rescuer is physically able and the survivor is small, the rescuer may use the one-person arm carry to lift and carry the survivor by:

- Reaching around the survivor's back and under the knees
- Lifting the survivor while keeping the rescuer's back straight and lifting with the legs

Consider the size of the survivor and the distance he or she needs to be carried before using this carry.

Pack-Strap Carry

Another way for a single rescuer to lift a survivor safely is by using the one-person pack-strap carry. Using this method, the rescuer should:

- Step 1: Stand with his or her back to the survivor.
- Step 2: Place the survivor's arms over the rescuer's shoulders and grab the hands in front of the rescuer's chest.
- Step 3: Hoist the survivor by bending forward slightly, until the survivor’s feet just clear the floor.

Note: The pack-strap carry is most effective for quick removal of a survivor over a short distance.

CONDUCTING RESCUE OPERATIONS (CONTINUED)

Two-Person Carry

Survivor removal is easier when multiple rescuers are available. The survivor's upper body will weigh more than his or her lower body; therefore, rescuers with greater body strength should be positioned at the survivor's upper body.

A survivor may be removed using a two-person carry:

- Rescuer 1: Squat at the survivor's head and grasp the survivor from behind around the midsection. Reach under the arms and grasp the survivor's left wrist with rescuer's right hand, and vice versa. Crossing the wrists creates a more secure hold on the survivor and also pulls the survivor's arms and elbows closer to their body. This will be helpful if the survivor is carried through any narrow passages.
- Rescuer 2: Squat between the survivor's knees, facing either toward or away from the survivor. Note that, if the rescuers will carry the survivor over uneven areas such as stairs, the rescuers will need to face each other. Grasp the outside of the survivor's legs at the knees. Both rescuers: Rise to a standing position while keeping backs straight and lifting with the legs. Walk the survivor to safety.

Chair Carry

Two rescuers can also remove a survivor by seating him or her on a chair:

- Rescuer 1: Cross the survivor's arms in his or her lap. Facing the back of the chair, grasp the back upright.
- Rescuer 2: Grasp the two front legs of the chair.
- Both rescuers: Tilt chair back, lift simultaneously, and walk out. Use a sturdy chair.

Note that, if rescuers will need to carry the survivor over uneven surfaces such as stairs, the rescuers must face each other.

Blanket Carry

You can use the blanket carry for survivors who cannot be removed by other means. The blanket carry requires four to six rescuers to ensure stability for the survivor and that one rescuer must be designated the lead person:

- Step 1: Position a blanket next to the survivor, ensuring that the blanket will extend under the survivor's head.
- Step 2: Tuck the blanket under the survivor and assist the survivor in moving to the center of the blanket. If necessary, use the log rolling technique to position them on the blanket.
- Step 3: With three rescuers squatting on each side, roll up the edges of the blanket against the survivor to grasp a "handle." The lead person checks the team for even weight distribution and correct lifting position.
- Step 4: The lead person calls out, "Ready to lift on the count of three: One, two, three, *lift.*"

CONDUCTING RESCUE OPERATIONS (CONTINUED)

- Step 5: The team lifts and stands in unison — keeping the survivor level — and carries the survivor feet first.

The team must also **lower** the survivor together, using the following steps:

- Step 1: The lead person calls out, "Ready to lower on the count of three: One, two, three, *lower.*"
- Step 2: The team lowers the survivor in unison, exercising caution to keep the survivor level.

A variety of materials — such as blankets, carpets, and folded tables — can be used as improvised stretchers.

Log Rolling

Log rolling should be used to move survivors with a suspected or confirmed cervical spine injury. If the survivor is unconscious, assume he or she has a cervical spine injury. The rescuer at a survivor's head should give commands as fellow rescuers roll the survivor as a single unit onto the blanket, backboard, or other support.

Types of Lifts and Carries

One-Person Arm Carry
One-Person Arm Carry, with the rescuer holding the victim around the victim's back and under the knees.

One-Person Pack-Strap Carry
One-Person Pack-Strap Carry in which the rescuer places the victim's arms over his or her shoulders and grabs the victim's wrists over his or her chest, then hoists the victim by bending over slightly.

Types of Lifts and Carries

Two-Person Carry

Two-Person Carry in which Rescuer 1 squats at the victim's head and grasps the victim from behind at the midsection. Rescuer 1 should use his right hand to grab the victim's left wrist, and vice versa. Rescuer 2 squats between the victim's knees, grasping the outside of the knees. Both rescuers rise to a standing position."

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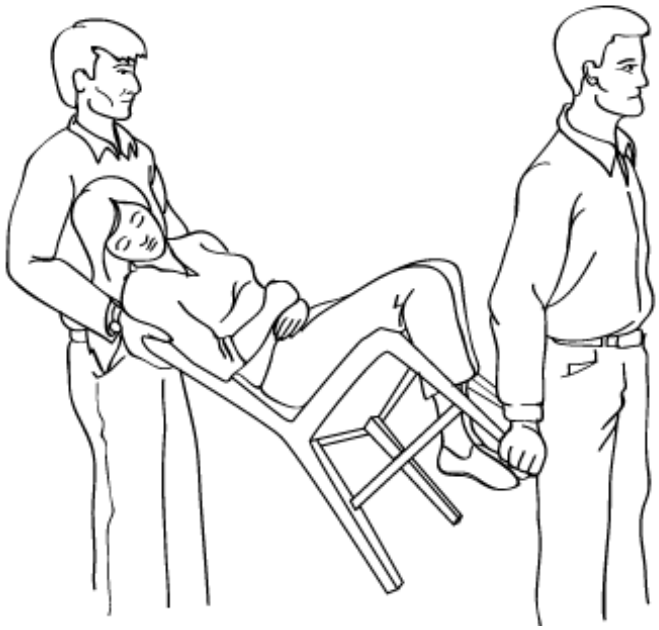
Chair Carry

Chair Carry in which the victim is placed in a sturdy, non-swivel chair and tilted backward as rescuers lift the victim. This carry requires two rescuers. If possible, secure victim to the chair.



Note that if rescuers will need to carry a survivor over uneven surfaces, such as stairs, the rescuers must face each other.

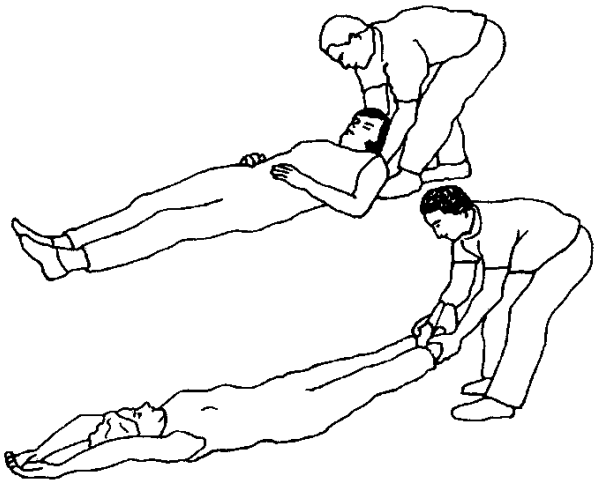
CONDUCTING RESCUE OPERATIONS (CONTINUED)

Blanket Drag

When necessary, one rescuer can use the blanket drag by following these steps:

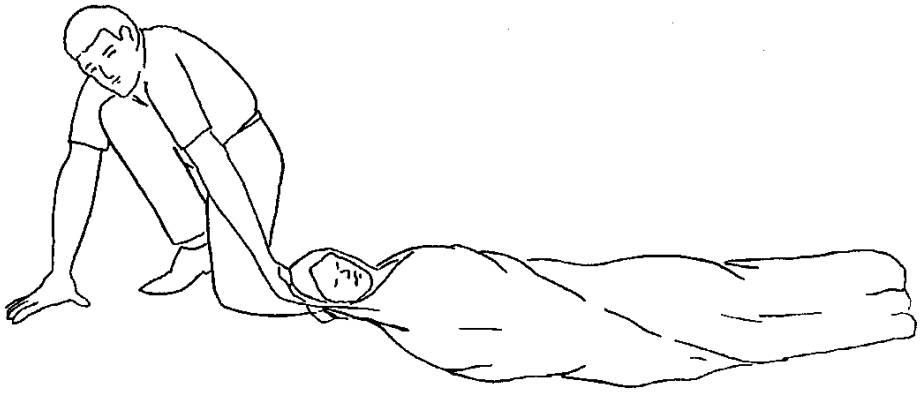
- Step 1: Wrap the survivor in a blanket.
- Step 2: Squat down and grasp an edge of the blanket.
- Step 3: Drag the survivor across the floor.

Correct Drag Techniques



Correct Drag Technique

Correct drag technique, showing the rescuer grasping the survivor by either the feet or shoulders and dragging him or her clear of the hazard



Blanket Drag

Blanket drag, showing the survivor wrapped in a blanket with the rescuer squatting at the survivor's head. The rescuer grasps the blanket behind the head and drags him or her clear of the hazard.

CONDUCTING RESCUE OPERATIONS (CONTINUED)

EXERCISE: SURVIVOR CARRIES

Purpose: This exercise will provide you with an opportunity to practice different drags and carries to safely move survivors.

Instructions:

1. Break into teams of seven.
2. Members of your team will volunteer to be "survivors" that other team members will move using the drags and carries demonstrated in the class.
3. Use chairs and other items as needed to perform the drags and carries.
4. Be sure to trade off "survivor" and "rescuer" roles so that everyone on your team has a chance to practice the drags and carries.
5. Remember to know your limits! Do not attempt any lift or carry that will not be safe for you and the survivor.

EXERCISE: SURVIVOR EXTRICATION

Purpose: This exercise will provide you with an opportunity to practice the removal of entrapped survivors from a damage site, using leveraging/cribbing and drags and carries.

Instructions:

1. Break into teams of seven.
2. Your team will be directed to a "damage site." Consider your plan of action.
3. Enter the "damage site" and conduct a room search. Locate survivors and make a plan for extricating them from the debris.
4. Use leveraging and cribbing procedures as needed to free the survivor.
5. Use appropriate lifts and drags to remove survivors from the room (and, if possible, from the building).
6. If there is a second "damage site," conduct another rescue operation.

Unit Summary

The key points in this unit:

- The decision to attempt a rescue should be based on:
  - The risks involved
  - Achievement of doing the greatest good for the greatest number
- The objectives of interior and exterior search and rescue are to:
  - Always maintain rescuer safety
  - Rescue the greatest number of people in the shortest amount of time
  - Get the walking wounded and ambulatory survivors out first
  - Rescue the lightly trapped survivors next

NERTs are restricted to *light search and rescue*. Your mission when dealing with heavily damaged structures or situations that are clearly unsafe is to warn others.

- Search and rescue size up follow the same process as size up for other NERT operations. Size up continues throughout search and rescue efforts and provides information about how to proceed. Should size up indicate that evacuation of the team is necessary, ensure safety and organization during the evacuation.
- When the decision to begin search operations is made, NERT searchers must:
  - Employ appropriate search techniques
  - Locate any survivors and check for the “three killers”
- To locate survivors, complete a size up of the building then conduct a search that:
  - Is systematic and thorough
  - Avoids unnecessary duplication of effort
  - Documents results
- Rescue involves three main functions:
  - Moving objects and debris to create a safe rescue environment and to free survivors
  - Triaging survivors by checking for the “three killers” (airway obstruction, major bleeding, and shock)
  - Removing survivors as safely and as quickly as possible

UNIT SUMMARY (CONTINUED)

Remember that rescuer safety is always the top priority.

Rescue operations hinge on maintaining rescuer safety, which requires NERT responders to recognize their own limitations. *Never* attempt anything that exceeds YOUR limitations *at that point in time.*

Leveraging and cribbing may be used to lift heavy debris and give access to trapped survivors.

Survivors can be removed in a number of ways, depending on:

- Their condition
- The number of rescuers available
- The strength and ability of the rescuers
- The stability of the environment

If the building's condition allows, survivors with suspected head or spinal injury should be stabilized on some type of backboard before being removed. When possible, these removals should be deferred to trained EMS personnel.

HOMEWORK ASSIGNMENT

Read and become familiar with Unit 6: NERT Organization and Unit 7: Disaster Psychology that will be covered in session 5.

UNIT 6: NERT ORGANIZATION

In this unit you will learn about:

- **NERT Organization:** How to organize and deploy NERT resources according to ICS organizational principles.
- **Documentation:** Strategies for documenting situation and resource status.
- **Team Organization:** A tabletop exercise to apply your knowledge of team organization.

Introduction and Unit Overview

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Describe the NERT structure.
- Identify how NERTs interrelate with the Incident Command System (ICS).
- Explain documentation requirements.

UNIT TOPICS

This unit will provide you with a thorough understanding of NERT organization, command post operations and policy.

- NERT Organization
- NERT Mobilization
- Documentation

Effective NERT operations, like all aspects of emergency response, rely on effective communication.

NERT Organization

PRINCIPLES OF ONSCENE MANAGEMENT

On scene management in a disaster situation has three primary goals:

- Maintain the safety of disaster workers. The NERT **Incident Commander/Task Force Leader (IC/TL)** must continually prioritize response activities based on the team's capability and training and the principle that rescuer safety is the number one concern. **NERT functional leadership** assigns activities and accounts for team members. **NERT field team responders** work in the buddy system and respond based on their size up of the situations that they encounter.
- Provide clear leadership and organizational structure by developing a chain of command and roles that are known by all team members. Each NERT member has only one person that he or she takes direction from and responds to.
- Improve the effectiveness of rescue efforts. Disaster information is collected, and responses are prioritized based on rescuer safety and doing the greatest good for the greatest number according to the team's capabilities and training.

NERT organization is based on the Incident Command System (ICS), which is a proven management system used by emergency responders.

NERT ONSCENE MANAGEMENT

The specific NERT organizational structure and protocols provide:

- A location to meet and establish the Emergency Response Team, the "NERT Staging Area"
- A well-defined management structure (e.g., leadership, functional areas, reporting chain, working in teams)
- A manageable span of control that provides for a desirable rescuer-to-supervisor ratio of between three and seven rescuers per supervisor
- Common terminology that contributes to effective communication and shared understanding
- Effective communication among team members and with professional responders, including the use of radios
- Consolidated action plans that coordinate strategic goals, tactical objectives, and support activities
- Comprehensive resource management that facilitates application of available resources to the incident in a timely manner
- Accountability

NERT ORGANIZATION (CONTINUED)

OBJECTIVES FOR NERT ONSCENE MANAGEMENT

In a disaster situation, the NERT:

- Identifies the scope of the incident (What is the problem?)
- Determines an overall strategy (What can we do, and how will we do it?)
- Deploys teams and resources (Who is going to do what?)
- Documents actions and results

THE NEED FOR FLEXIBILITY

Disasters create a dynamic, ever-changing environment. The NERT organizational framework is flexible so that it can expand or contract depending on the ongoing assessment priorities determined by the NERT Incident Commander/Task Force Leader (IC/TL), and people and resources available. This helps ensure:

- Rescuer safety
- Doing the greatest good for the greatest number
- A manageable span of control
- Accountability of NERT responders

INCIDENT COMMAND SYSTEM

The Incident Command System (ICS) is the system used by emergency response agencies to manage emergency operations. When NERTs activate, they become part of that system.

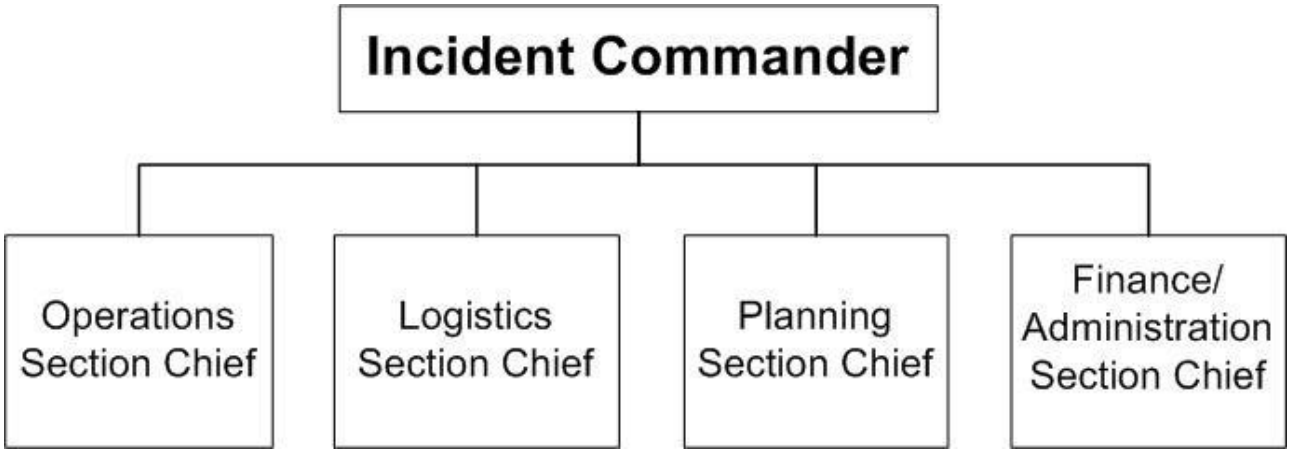
Basic ICS structure for NERT is established by the person who arrives first on the scene. This person becomes the Incident Commander/Task Force Leader (IC/TL). Initially, the IC/TL may handle all of the command positions of ICS but, as the incident evolves, he or she may assign personnel as needed to the four ICS Command Functions:

- Operations Section Chief
- Logistics Section Chief
- Planning Section Chief
- Finance/Administration Section Chief

Through an effective ICS, all NERT members report through a chain of command to the IC/TL. The IC/TL reports to the first fire or law enforcement official at their location and takes direction from that person until otherwise directed or until the NERT is relieved.

NERT ORGANIZATION (CONTINUED)

ICS COMMAND FUNCTION ORGANIZATION CHART



NERT COMMAND POST SECTIONS

Although there are a number of detailed responsibilities under each ICS function, the system itself is straightforward. NERTs will typically require the Operations, Planning, and Logistics functions. The NERT Incident Commander/Task Force Leader (IC/TL) is responsible for handling or delegating each function.

As the incident expands, NERT members are assigned or re-assigned to each section to handle specific aspects of the response while maintaining an effective span of control.

NERT Incident Commander/Task Force Leader

- Provides overall leadership for incident response
- Ensures incident safety
- Establishes incident objectives
- Is responsible for all functions until delegated
- Delegates authority to others
- Provides information to internal and external parties
- Establishes and maintains liaison with other responders (e.g., fire, law enforcement, public works, other NERTs)
- Takes direction from agency official

NERT Operations Section

- Directs and coordinates all incident tactical operations
- Is typically one of the first functions to be assigned
- Directs Field team responders

NERT ORGANIZATION (CONTINUED)

Planning Section

- Tracks situation status
- Prepares the Team's action plan
- Provides NERT operations with field team directives and incidents
- Develops alternative strategies
- Provides documentation services

Logistics Section

- Tracks resource status (e. g., number of NERT members who have "reported for duty" and what section they are assigned to)
- Provides communications
- Seeks sources of food and provides medical support to Team members
- Manages team supplies and facilities/staging area

Finance and Administration Section

- Timekeeping
- Track receipts for potential reimbursement. Reimbursement is not guaranteed for any purchase
- Organize and file all completed paperwork

Finance and Administration is a broader function in the formal Incident Command System; however, NERTs will have specific need for this function – tracking documentation.

NERT OPERATIONS

Based on the principles of ICS, NERTs follow these protocols:

- Each NERT must establish a command post structure at their staging area.
- The NERT Incident Commander/Task Force Leader (IC/TL) directs team activities. During activation for a disaster, the first person at the predesignated staging area assumes this responsibility. The initial IC/TL may hand off this role to someone else who arrives after them.
- The IC/TL establishes the NERT Command Post (NCP). **The IC/TL stays in the NCP**. If the IC/TL has to leave, the responsibility of IC/TL must be delegated to someone in the Command Post.

NERT ORGANIZATION (CONTINUED)

Using the ICS structure, NERTs are assigned to assist with a range of functions:

- Logistics — managing resources and responder assignments, services, and supplies
- Planning/Intelligence — collecting and displaying information; collecting and compiling documentation; providing Operations with assignments for field teams
- Operations — Directing field teams to conduct fire suppression, medical operations, search and rescue

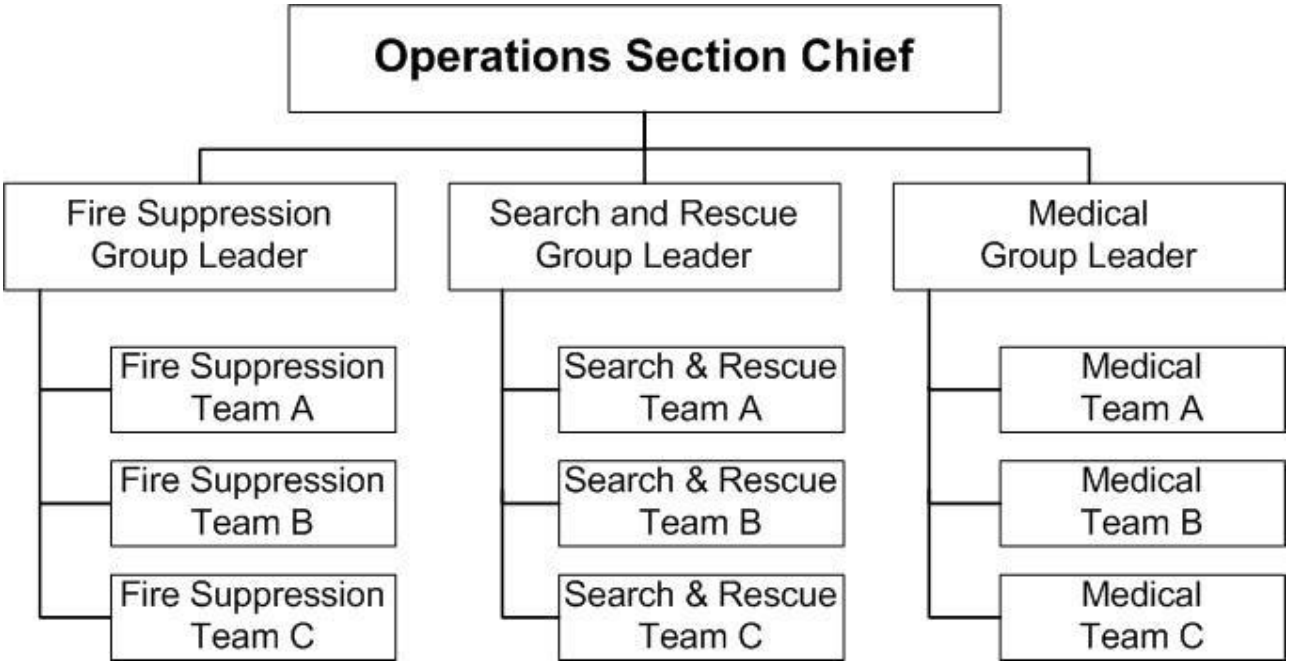
In all situations, each field team assigned must have an identified leader to supervise tasks being performed, to account for team members, and to report information to his or her designated leader.

In all situations, a manageable span of control is three to seven team members reporting to their designated leader.

NERT responders assigned to Operations should always be assigned to teams consisting of at least three to four persons:

- One person will serve as runner and communicate with the NCP
- Two people will "buddy up" to respond to the immediate needs.
- Search and rescue teams must include at least four people; a safety person remains outside the area to be searched and at least two people conduct the search.

EXPANDED NERT OPERATIONS STRUCTURE



NERT operations section structure, showing the Operations Section Chief at the top and the three Group Leaders underneath

NERT ORGANIZATION (CONTINUED)

DEALING WITH THE MEDIA

NERT members should refer any media inquiries to the NERT IC/TL. The IC/TL should then refer the media inquiries to the Public Information Officer of the SFFD.

If the Public Information Officer of the sponsoring organization refers media to the NERT IC/TL or otherwise authorizes them to speak with the media, the IC/TL should:

- Wait to do so until it will not inhibit or delay the team's ability to do the greatest good for the greatest number in the shortest amount of time
- Establish an area for briefing the media if necessary
- Be careful about the information he or she releases, making sure it is both accurate and approved for release, while also keeping in mind survivors' right to privacy
- Not feel compelled to answer every question asked

NIMS COMPLIANCE

The Incident Command System is part of the National Incident Management System (NIMS). NIMS provides a consistent, comprehensive approach to incident management. It applies at all jurisdictional levels and across all emergency management functions and types of incidents.

NIMS was established so that first responders, including NERT members, from different jurisdictions and disciplines can work together to respond to disasters and emergencies.

- While not required to be a NERT responder, to meet NIMS standards, NERT members must complete the IS-100.a (*Introduction to Incident Command System*) and IS-700.b (*Introduction to National Incident Management System [NIMS]*) courses.
- The courses are available online from FEMA at http://training.fema.gov/IS/NIMS.asp.

NERT Mobilization

The following steps describe how NERTs mobilize when an incident occurs. Immediately following the incident, NERT members take care of themselves, their families, their homes, and their neighbors.

- The NERT standard operating guideline (SOG) calls for self-activation. NERT members proceed to the predesignated staging area with their disaster supplies. Along the way, they make damage assessments that would be helpful for the NERT IC/TL's decision-making.
- The first NERT member at the staging area becomes the initial IC/TL for the response. As other NERT members arrive, the NERT IC/TL may pass leadership to someone else. The NERT IC/TL establishes operations to ensure effective communication, to maintain span of control, to maintain accountability, and to do the greatest good for the greatest number without placing NERT responders in harm's way.

NERT MOBILIZATION (CONTINUED)

- One of the NERT IC/TL's first decisions will be to locate the team's Neighborhood Command Post (NCP). The staging area is the default location, however, if another location would be safer or otherwise better, the NCP should be set up there.
- As intelligence is collected and assessed, the IC/TL must prioritize actions and work with the Section Chiefs or leaders. The Planning Section Chief can make many decisions about directing field team assignments with permission and guidelines from the IC/TL. The NERT organization is flexible and evolves based on new information.

Following an incident, information — and, therefore, priorities — may be changing rapidly. Communication between the NCP and field response teams ensures that NERTs do not overextend their resources or supplies.

RESCUER SAFETY

Effective emergency scene management requires the formulation and communication of strategic goals and tactical objectives to do the most good for the greatest number while maintaining the safety of rescue personnel.

Rescuer safety is paramount. First ask "Is it safe for the NERT responders to attempt the assignment?" **Review size up procedures as part of the team Safety briefing**.

NERT TASKS BASED ON DAMAGE LEVEL

Light Damage Site

Fire	Search & Rescue	Medical (on site)	Medical (off site)
- Shut off utilities as needed - Extinguish small fires - Document	- Locate - Triage - Treat airway/major bleeding - Continue sizeup - Document	- Triage again - Move to treatment area - Head-to-toe assessment - Treatment - Facilitate transport as needed - Document	- Triage again - Head-to-toe assessment - Treatment - Facilitate transport as needed - Document

Moderate Damage Site

Fire	Search & Rescue	Medical (nearby)	Medical (off site)
- Shut off utilities if safe - Extinguish small fires - Document	- Locate - Triage - Treat airway/major bleeding - Evacuate - Warn others - Continue sizeup - Document	- Triage again - Move to treatment area (nearby safe location) - Head-to-toe assessment - Treatment - Facilitate transport as needed - Document	- Triage again - Head-to-toe assessment - Treatment - Facilitate transport as needed - Document

Heavy Damage Site

Fire	Exterior Search & Rescue Only
- Shut off utilities if safe - Document	- Mark area for heavy damage - Warn others - Gather information - Inform CERT IC/TL immediately - Document

Tasks required of Fire, Search and Rescue, Medical, and Treatment Area teams based on the degree of damage to the structure.

Documentation

It is extremely important to document information about the disaster situation and resource status. Efficient flow of information makes it possible for resources to be deployed effectively and for professionals to be informed. Write it down! So that:

- The NERT IC/TL will know what is happening throughout the incident.
- The NERT IC/TL will have written information to pass on to the SFFD.
- The NERT will be able to show volunteer hours it provided for Disaster Declaration reimbursement to San Francisco.
- Liability exposure will be documented.
- Communication will be improved between the functional areas and between shifts:

Under the NERT structure, each level of organization has documentation responsibilities:

- Section Chiefs are responsible for providing the NCP ongoing information about damage assessment, group status, and needs.
- The Command Post is responsible for documenting the situation status of:
  - Incident locations and Identified hazards
  - Access routes
  - Support locations: staging area, medical treatment area

Every entity such as a functional team or staging location must have a scribe to record everything. The leader typically designates the scribe and provides some instructions.

DOCUMENTATION FORMS

These are the forms that can be used to facilitate documentation and information flow. These forms are functionally consistent with Incident Command System (ICS) forms.

- Damage Assessment
- Volunteer Information Card
- Personnel Resources Sign-In
- Incident Status Record
- Incident Report Form
- Unit Log (ICS214)
- Survivor Treatment Area Record
- Communications Log
- Equipment Inventory
- General Message (ICS213)

Remember that scribes can produce useful, high-quality documentation without using the forms as long as they take detailed notes of all activities.

FORMS USED FOR RESPONSE DOCUMENTATION	
FORM	**PURPOSE**
Damage Assessment	Completed by NERT members as they travel through the area to the staging area, then given to the NERT Planning section. It provides a summary of overall hazards in selected areas and is essential for the NERT to make an action plan, including: - Fires, Utility hazards, Structural damage - Injuries and casualties - Access Routes
Volunteer Information Card	Completed by every NERT member and used to sign in at the Logistics section
Personnel Resources Sign-In	Used by the Logistics section to track personnel availability to and provides information about: - Who is on site - When they arrived - Where they were assigned
Incident Status Record	A master status tracking sheet used in the Planning section to keep a record of all incident information that comes into the NCP. The scribe assigns the incident a number when it is recorded on the sheet.
Incident Report Form	Used by the Planning section to record essential information about an incident from the Incident Status Record Form and provide it to the Operations section so that a Field Team can be briefed and dispatched.
Unit Log (214)	This is used to record/journal major times and details in your response. Used by every member of the NERT who a leader: - IC/TL - NCP Section leaders - Field team leaders
Survivor Treatment Area Record	Completed by medical treatment area personnel to record survivors entering the treatment area, their condition, and their status
Communications Log	Completed by the radio operator; used to log incoming and outgoing transmissions
Equipment Inventory	Used in the Logistics section to check in NERT managed equipment and supplies
General Message (213)	Used for sending messages between command levels and groups; messages should be clear and concise. Examples include: - Additional resources requested/required - Special information - Information that the radio operator should transmit to Battalion

DOCUMENTATION (CONTINUED)

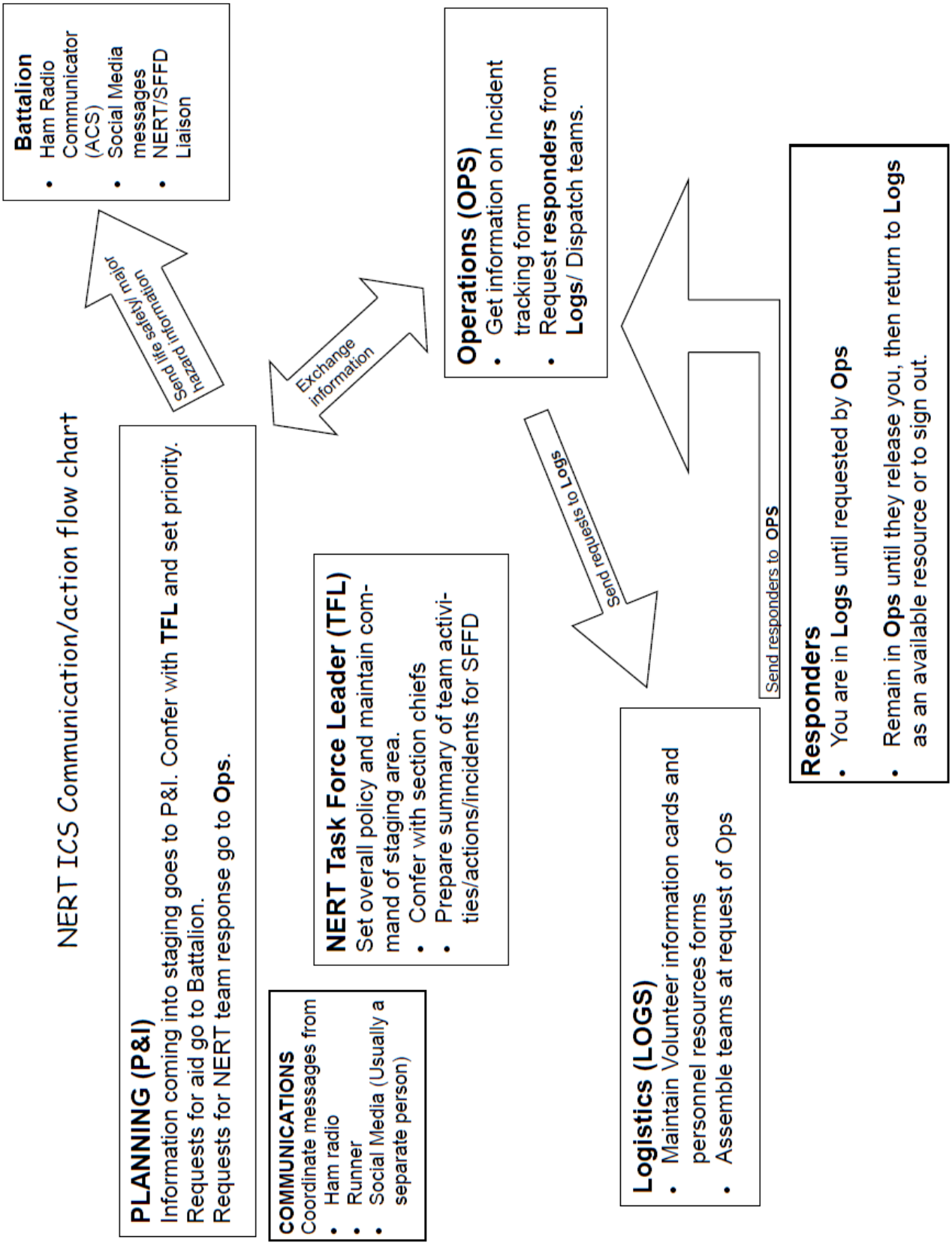
DOCUMENTATION FLOW

Here is how a NERT would use the standard documents within the NCP. Remind participants that, even if the forms are not used, this should give them an idea of the preferred information that needs to be collected and communicated between groups.

- The Damage Assessment Form is completed by NERT members as they travel through the area to the staging area. The form is then given to the Planning Section. The form provides a summary of overall hazards in selected areas. The information is used for recording prioritizing and formulating activities.
- The Operations Section leader assembles teams and makes assignments based on the damage assessment information provided to them from the Planning Section on the Incident Report Form. The Operations section provides a briefing to the Field Team Leader from this form. This is tool for recording the activities of the field teams when the return and should be returned to the Planning section at that time.
- A scribe at the Logistics section collects the Volunteer Information Card and signs in each volunteer using the Personnel Resources Sign-In Form. Logistics will note where a NERT member is assigned on that form. Any available NERT member is assigned at Logistics until they receive another assignment.

ADDITIONAL DOCUMENTATION

Area maps, site maps, and building plans are also very useful for assisting and tracking response activities.


NERT ICS Communication/action flow chart
Battalion
Ham Radio Communicator (ACS)
Social Media messages
NERT/SFFD Liaison
Send life safety/ major hazard information
Exchange information
Operations (OPS)
Get information on Incident tracking form
Request responders from Logs/ Dispatch teams.
PLANNING (P&I)
Information coming into staging goes to P&I. Confer with TFL and set priority.
Requests for aid go to Battalion.
Requests for NERT team response go to Ops.
COMMUNICATIONS
Coordinate messages from
Ham radio
Runner
Social Media (Usually a separate person)
NERT Task Force Leader (TFL)
Set overall policy and maintain command of staging area.
Confer with section chiefs
Prepare summary of team activities/actions/incidents for SFFD
Send requests to Logs
Send responders to OPS
Logistics (LOGS)
Maintain Volunteer information cards and personnel resources forms
Assemble teams at request of Ops
Responders
You are in Logs until requested by Ops
Remain in Ops until they release you, then return to Logs as an available resource or to sign out.

FORMS

NERT DAMAGE ASSESSMENT FORM

Page:	Person Reporting:	NERT Task Force/Battalion:
Date & Time:	Person Receiving/ICS Position:	Block:

Fire **B**urning, **O**ut, **N**one	**Hazard** **G**as, **W**ater, **E**lectrical, **H**azMat, **N**one	**Damage** **H**eavy, **M**edium, **L**ight, **N**one	**Street** **O**pen, **B**locked

Address	Fire	Hazard	Damage	Street	Other
	Injured	Trapped	Need Shelter	Dead	Not Home
Actions Taken, Resources Needed, Resources Available					
Address	Fire	Hazard	Damage	Street	Other
	Injured	Trapped	Need Shelter	Dead	Not Home
Actions Taken, Resources Needed, Resources Available					
Address	Fire	Hazard	Damage	Street	Other
	Injured	Trapped	Need Shelter	Dead	Not Home
Actions Taken, Resources Needed, Resources Available					
Address	Fire	Hazard	Damage	Street	Other
	Injured	Trapped	Need Shelter	Dead	Not Home
Actions Taken, Resources Needed, Resources Available					
PLEASE PRINT CLEARLY!					

NERT VOLUNTEER INFORMATION CARD

NERT Volunteer Information

Name, Address and Personal Information. Print clearly.			
1. First Name	2. Last Name		3. Middle Initial
3. Street	4. Unit #	5. City	
6. State	7. ZIP Code	8. Home Phone	9. Cell Phone
10. Are you being treated for any medical condition? Yes I am → No I am not	11. Explain		
Emergency Contact Information. Print clearly.			
12. First Name	13. Last Name		14. Middle Initial
15. Relationship	16. Home Phone	17. Cell Phone	
18. Street			19. Unit #
20. City		21. State	22. ZIP Code

I hereby state under penalty of perjury that the information I have given here is correct. I also understand that this information will only be used for identification purposes by the San Francisco Fire Department.

Signature _____ Date _____

NERT SAP 212 P	23. Prepared By (if not signer):	24. Date/Time Prepared	25. Accepted By - Name/ICS role:

Page Break

NERT Volunteer Information (2)

1. How long are you available to work?	Days/hours/a specific time →				
2. NERT Trained?	YES	NO	☑ Basic NERT	☑ ICS	
			☑ Heavy Lifting Training	☐ Other	
3. Disaster Service Worker?	YES	NO	☐ Volunteer Center	☐ Other	
4. Licensed driver?	YES	NO	Vehicle available?	YES	NO
5. Language other than English?	YES	NO	List:		
6. Medical training?	YES	NO	☐ Basic First Aid	☐ Advanced First Aid	
			☐ First Responder	☐ EMT	
7. Construction experience?	YES	NO	☑ Basic carpentry	☑ Basic electrical	
			☑ Basic plumbing	☐ HVAC	
			☐ Heavy equipment	☐ Other	
8. Communications experience?	YES	NO	☑ Ham	☐ Other	

NERT PERSONNEL RESOURCES

DATE:	PERSON REPORTING:							PAGE #:
PRINT NAME AND TIME IN			SKILL SPECIALTY RANK FROM 1-5 OR PRINT					
NAME	TIME IN	TIME ASSIGNED	FIRE	MEDICAL	S&R	TRANSPORT	DOCUMENT	ASSIGNED TO: (ICS Section)

FOR USE BY LOGISTICS

Sign in NERT members and mark their special skills. When you assign someone to a section, enter the section in the last row and enter the time assigned. When someone returns from an assignment, draw a line through their name and all boxes and add their name to the bottom of the list. When someone leaves the staging area FOR GOOD (to go home), remember to draw a line through their name. Remember to check how long people have been assigned and who hasn't been assigned yet.

NERT INCIDENT STATUS RECORD

Page #:_____

Date:_____

Staging Area/Team Name:

INCIDENT #	START TIME	FINISH TIME	ADDRESS / LOCATION	FIRE	SEARCH RESCUE	MEDICAL	UTILITY CONTROL	TEAM/UNIT ASSIGNED
	COMMENT:							
	FOLLOW UP:							
	COMMENT:							
	FOLLOW UP							
	COMMENT:							
	FOLLOW UP							

NERT INCIDENT REPORT FORM

Incident Report Form

Staging Area:_____ Date/Time: _____ Incident # _____ page 1

Planning							Fill out #1-9 and give to TFL or take action per their instructions.
✓	Condition/Incident			Location:			
1. People	Injured	Red	Yellow	Green	Black	Need Shelter	Special Need
	Trapped	Describe (Where trapped, injured)					
2. Fire	Smoke	Color	Flame	Exposure A - B - C - D		Other	
3. Hazard	Electric	Gas	HazMat	Water	Describe		
4. Streets	Blocked	Damaged	Streets Involved				
	Describe						
5. Building Damage	Light	Moderate	Heavy	Detail:			
Type/Use	Wood	Brick	Hi-Rise	Resident	Retail	Industrial	
6. Other	Animal	Criminal	Vehicle	Other	Detail:		
7. Type of Report: ☐ Eyewitness ☐ Third Party ☐ Repeat				8. Reporting party will go with team to incident: ☐ Yes ☐ No			
9. Other Relevant Information							

Incident #_____ page 2

1. Planning	Necessary Information Sent to EDCC: ☐ Yes ☐ No	Message sent by: ☐ Messenger ☐ Radio ☐ Other
2. Task Force Leader	Team will respond: ☐ Yes ☐ No	Priority: ☐ Life ☐ Incident Stabilization ☐ Property Preservation
3. Operations	Fill #4-9. When team returns, fill out #10-11 and return form to P&I	

4. Team Leader:	5. Team Briefed? ☐ Yes ☐ No	6. Team Dispatched?: ☐ Yes ☐ No	7. Date/Time Dispatch:
Team Members:			

8. Equipment and Materials Dispatched: ☐ Blankets ☐ Buckets ☐ Cable ☐ Carts ☐ Carrying Equipment ☐ Crow Bars ☐ Dollies ☐ Duct Tape ☐ Hammers ☐ First Aid Kit ☐ Hand Truck ☐ Jacks ☐ Levers ☐ Picks ☐ Pry Bars ☐ Radio ☐ Rope ☐ Shovels ☐ Tarps ☐ Saws ☐ Other:_____ ☐ Other:_____ ☐ Other:_____

9. Vehicles Dispatched: ☐ Yes ☐ No	☐ Car ☐ Truck ☐ Bus ☐ Van ☐ Other_____		Vehicle License Plate Number	
10. Date/Time Returned:	Team Debriefed? ☐ Yes ☐ No	By? ☐ P&I ☐ OPS	NERTs injured ☐ Yes ☐ No	Incident Completed? ☐ Yes ☐ No

11. Field Team report of the Outcome/Disposition (filled out by Operations upon return of Field Team)

PLANNING Section fills out the front of the card with relevant information from the reported incident. They pass the card to OPERATIONS, who briefs and sends a Field Team. OPERATIONS fills out the back side of the card after the Field Team returns and provides an update. The form is returned to PLANNING.

UNIT LOG (ICS214)

	1. Incident Name	2. Date Prepared	3. Time Prepared

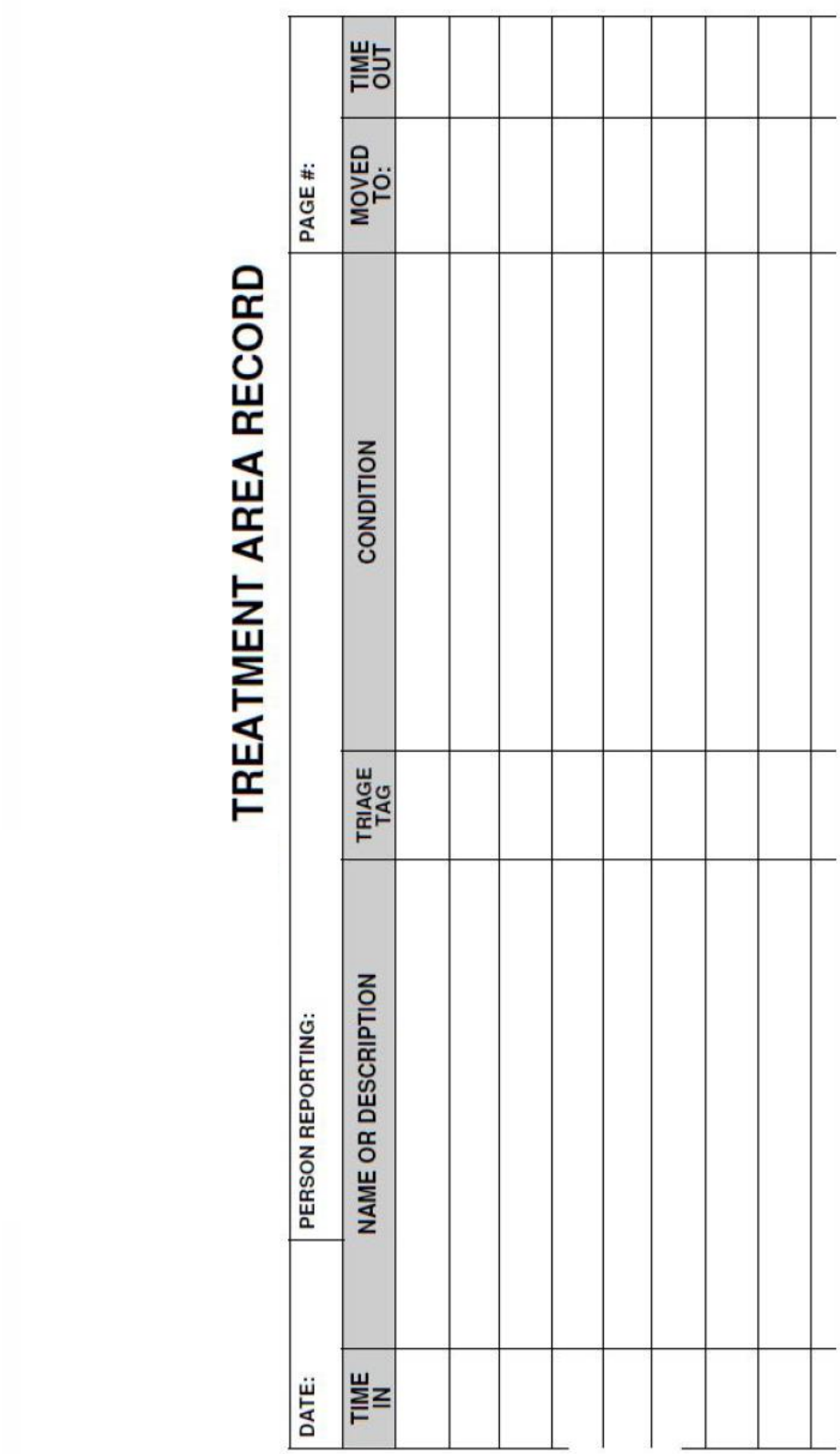
4. Unit Name/Designators	5. Unit Leader (Name and ICS Position)	6. Operational Period

7. Personnel Roster Assigned		
Na	ICS	Home

8. Activity Log	
Time	M

9. Prepared by (Name and ICS Position)

SURVIVOR TREATMENT AREA RECORD



TREATMENT AREA RECORD

DATE: | PERSON REPORTING: | PAGE #:

TIME IN	NAME OR DESCRIPTION	TRIAGE TAG	CONDITION	MOVED TO:	TIME OUT

COMMUNICATIONS LOG

COMMUNICATIONS LOG	CERT	DATE
	RADIO OPERATOR NAME	

LOG			
TIME	FROM	TO	MESSAGE

PAGE_____ OF_____

COMMUNICATIONS section uses this form to track messages sent and received. It is helpful to assign the messages a message number.

EQUIPMENT INVENTORY

EQUIPMENT INVENTORY | CERT: WILSONVILLE | DATE: ## / ## / ##

ASSET #	ITEM DESCRIPTION	OWNER	ISSUED TO		QTY	TIME	INITIALS	COMMENTS
727880	STRETCHER	FD	MED 2	ISSUED	1	10:45 AM	AR	
				RETURNED	1	3:10 PM	AR	
				ISSUED				
				RETURNED				
				ISSUED				
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SCRIBE(S): SYLVIE D'ANJOU

PAGE 1 OF 1

MESSAGE FORM (ICS213)

	TO: _____ _____ **FROM (Team Name/ICS position &** **Staging Site):**_____ **SUBJECT:**_____ _____ **DATE:** _____ **TIME:** _
MESSAGE TEXT:	**What** – is the incident you are reporting? ie. *People trapped, fire burning, road blocked* **Where** – did the incident happen? ie. *822 Connecticut near 20th Street, intersection of Market & Geary* **When** – did the incident happen? ie. *At 12:15 p.m., reported at 2:05 p.m.* **How** – is the Incident Commander responding? *If yes, describe briefly. If no, say no response.*
Examples: assignment completed, additional resources needed, unable to complete, special information/status update.	
REPLY:	**DATE:**_____ **TIME:**_____ **ICS POSITION:**_____

Home Activity

Purpose: This activity will give you an opportunity to relate the ICS functions to specific situations.

Instructions: Review the list of activities and use the initials, "IC/TL," "O," "P," or "L" to indicate which ICS function would cover each activity. Some activities may involve more than one function to be completed. Use the following key to fill in the blank column:

IC/TL = Incident Commander/Team Leader
O = Operations
P = Planning
L = Logistics

	1. It's dark, all the lights are out, you need additional flashlights to continue your response.
	2. The designated first aid site has a downed power line.
	3. A neighbor reports the smell of gas in his house, but he cannot shut off the gas at the meter.
	4. The batteries for the portable radio are dead.
	5. The fire department wants to know the overall status of your neighborhood.
	6. Several of your neighbors have minor injuries and need first aid.
	7. Fire from another neighborhood is moving toward your neighborhood.
	8. There is a pit bull-type dog seen wandering near the first aid station.
	9. A news crew has arrived with a camera to film your activities.
	10. Two hysterical neighbors are demanding help. One cannot find her adolescent child who was playing outside when the disaster struck. The other wants help moving a bookcase off of his wife. He says she's bleeding from a head wound
	11. It's starting to rain. Your command post and the first aid area are not under shelter.
	12. Too many people are coming to the Incident Commander to ask questions. The IC/TL asks for someone to act as a "gatekeeper."
	13. The IC/TL is very tired and is going to hand over responsibilities to someone else. He or she wants a report on the status of the neighborhood before doing so.
	14. Many neighborhood residents have come to volunteer their help.
	15. Reports have come in of damage and injuries in the next block. Teams must be assigned to assess the situation.
	16. A professional responder has arrived at the scene and would like a briefing on situation status.

Unit Summary

The key points from this unit:

- The ICS is the system used by emergency response agencies and NERT to manage emergency operations. ICS provides a flexible means of managing personnel, facilities, equipment, and communication and can be expanded as necessary.
- The key question that NERT Incident Commanders/Task Force Leaders must always ask is: “Is it safe for NERT members to attempt the response activity?”
- It is vital to document and communicate information about situation and resource status to all NERT levels.
  - Sections, Groups, and Teams must provide the Neighborhood Command Post with ongoing information about damage assessment, incident status, and ongoing needs.
  - The command post must document the situation status so that the overall disaster situation can be tracked and reported to emergency response agencies.

UNIT 7: DISASTER PSYCHOLOGY

In this unit you will learn about:

- **Disaster Psychology:** The psychological impact of a disaster on rescuers and survivors and how to provide “psychological first aid.”
- **Caring for Yourself, Your Buddy, and Survivors:** Steps one can take individually and as part of a NERT before, immediately following, and after a disaster.

INTRODUCTION AND UNIT OVERVIEW

NERT members might see and hear things during a disaster that are unpleasant and uncomfortable.

NERT members prepare themselves for their role during and following a disaster by learning about the possible impact of disasters on them and others, emotionally and physically. This knowledge helps NERT members understand and manage their reactions to the event and to work better with others.

Remember what you have learned about team organization. Team organization concepts can help you both operationally and psychologically. Working together and looking out for each other are important aspects of successful teams.

Psychological first aid is not therapy; rather, it is a set of techniques to provide emotional intervention during field operations. The techniques covered in this unit will help you manage personal situations so that the needs of all people, including survivors and NERT responders, can be met.

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Describe the disaster and post-disaster emotional environment for survivors and rescuers.
- Describe the steps that rescuers can take to relieve their own stress and that of other disaster survivors.

UNIT TOPICS

The unit will provide you with an understanding of the following components of psychological first aid:

- Disaster Trauma
- Team Well-Being
- Working with Survivors' Trauma

DISASTER TRAUMA

During a disaster, you may see and hear things that will be extremely unpleasant.

Direct psychological trauma could result from:

- Your own personal losses
- Working in your neighborhood
- Assisting neighbors, friends, coworkers who have been injured
- Not feeling safe and secure

Vicarious trauma, which is also referred to as compassion fatigue or secondary victimization, is a natural reaction to exposure to a survivor's trauma. A person who identifies too strongly with a survivor may take on that survivor's feelings. Vicarious trauma is an "occupational hazard" for helpers.

Taking on the survivors' feelings as your own can affect your ability to do your job as a rescuer and can also have longer term impact. Taking ownership of others' problems will compound your own stress and impact your overall effectiveness.

Be alert to signs of disaster trauma in yourself, as well as in disaster survivors and other survivors, such as fellow NERT members, so that you can take steps to alleviate stress.

POSSIBLE PSYCHOLOGICAL SYMPTOMS

Some of the types of disaster-related psychological and physiological responses that you may experience or observe others experiencing are:

- Irritability or anger
- Self-blame or the blaming of others
- Isolation and withdrawal
- Fear of recurrence
- Feeling stunned, numb, or overwhelmed
- Feeling helpless
- Mood swings
- Sadness, depression, and grief
- Denial
- Concentration and memory problems
- Relationship conflicts/marital discord

DISASTER TRAUMA (CONTINUED)

POSSIBLE PHYSIOLOGICAL SYMPTOMS

- Loss of appetite
- Headaches or chest pain
- Diarrhea, stomach pain, or nausea
- Hyperactivity
- Increase in alcohol or drug consumption
- Nightmares or the inability to sleep
- Fatigue or low energy

TEAM WELL-BEING

There are actions that can be taken before, during, and after an incident to help manage the emotional impact of disaster response work. Knowing in advance the possible psychological and physiological symptoms of disaster trauma that are covered in this unit is one step in managing the impact. Some other aspects of stress management for NERT responders include actions that NERT members can take for themselves and actions that NERT leaders can take during a response.

WAYS TO REDUCE YOUR OWN STRESS

Only you know what reduces stress within yourself and expending the effort required to find personal stress reducers is worthwhile before an incident occurs. You can take the following preventive steps in your everyday life:

- Get enough sleep.
- Exercise regularly.
- Eat a balanced diet.
- Balance work, play, and rest.
- Allow yourself to receive as well as give; your identity is broader than that of a helper.
- Connect with others.
- Use spiritual resources.

In addition to preventive steps, you should explain to your loved ones and friends how to support you when you return from a disaster area.

- Listen when you want to talk.
- Don’t force you to talk if you don’t want to.

You may also want to share with your loved ones and friends the information on possible disaster-related psychological and physiological symptoms discussed earlier.

TEAM WELL-BEING (CONTINUED)

To address personal stress during the incident, try "4 For Calm" Breathing[8]

- Take 4 low slow breaths
- Count silently from 1 to 4 with each breath
- Count silently from 1 to 4 with each breath out.
- Breathe from the belly
- Use the diaphragm (not the upper chest)
- The belly pushes out as you breathe in. The belly pulls in as you push the air out

HOW TEAM LEADERS REDUCE STRESS DURING THE INCIDENT

Steps that can reduce the stress on NERTs before, during, and after an incident:

- Brief NERT responders before the effort begins on what they can expect to see and what they can expect in terms of emotional response in the survivors and themselves.
- Emphasize that the NERT is a team. Sharing the workload and emotional load can help defuse pent-up emotions.
- Encourage rescuers to rest and regroup so that they can avoid becoming overtired.
- Direct rescuers to take breaks away from the incident area, to get relief from the stressors of the effort.
- Encourage rescuers to eat properly and maintain fluid intake throughout the operation. Explain that they should drink water or other electrolyte-replacing fluids and avoid drinks with caffeine or refined sugar.
- Arrange for a debriefing 1 to 3 days after the event in which workers describe what they encountered and express their feelings about it in a more in-depth way.
- Rotate teams for breaks or new duties (i.e., from high-stress to low-stress jobs). Encourage team members to talk with each other about their experiences.
- Phase out workers gradually. Gradually phase them from high- to low-stress areas of the incident. For example, do not stand down and send home a team member that has just completed a high-stress operation; instead, assign them a low-stress responsibility so they can decompress gradually.
- Conduct a brief discussion (defusing) with rescue workers after their shift during which they can describe what they encountered and express their feelings about it.
- Time to Take Five. Look at the stress reactions yourself or NERT teammates are displaying. Are they beginning to impact your judgement or interactions? Making you lose compassion for those you're trying to help? Causing you to make decisions that place yourself or others in danger? **If yes, say "Time to Take Five".**
  - When you hear it, do it.
  - Have the team agree to use this phrase so everyone is more likely to follow it.
  - Step away from the situation and practice self-care (eat, hydrate, practice "4 For Calm").

[8] Dr. Elizabeth McMahon, PhD teaches us "4 for calm", "time to take 5" and more in her course Psychological First Aid for NERT responders. Check the NERT website for scheduled training. https://sf-fire.org/calendar-special-events

WORKING WITH SURVIVORS' TRAUMA

Crisis survivors can go through a variety of emotional phases, and as a rescuer, you should be aware of what you may encounter

- In the impact phase, survivors generally do not panic and may show no emotion.
- In the inventory phase, which immediately follows the event, survivors assess damage and try to locate other survivors. During this phase, routine social ties tend to be discarded in favor of the more functional relationships required for initial response activities (e.g., search and rescue).
- In the rescue phase, as emergency services personnel (including NERTs) respond, survivors are willing to take direction from these groups without protest. This is why NERT identification (helmets, vests, etc.) is important.
    - Survivors are likely to be very helpful and compliant during the rescue phase.

In the recovery phase, the survivors appear to pull together against their rescuers, the emergency services personnel.

- Survivors may express anger or blame to the rescuers as they transition to the recovery phase.
- You should expect that survivors will show psychological effects from the disaster — and you should expect that some of the reaction will be directed toward you.

TRAUMATIC CRISIS

A crisis is an event that is experienced or witnessed in which people's ability to cope is overwhelmed:

- Actual or potential death or injury to self or others
- Serious injury
- Destruction of their homes, neighborhood, or valued possessions
- Loss of contact with family members or close friends

Traumatic stress may affect:

- Cognitive functioning. Those who have suffered traumatic stress may act irrationally, in ways that are out of character for them, and have difficulty making decisions. They may have difficulty sharing or retrieving memories.
- Physical health. Traumatic stress can cause a range of physical symptoms — from exhaustion to health problems.
- Interpersonal relationships. Those who survive traumatic stress may undergo brief or long-term personality changes that make interpersonal relationships difficult.

WORKING WITH SURVIVORS' TRAUMA (CONTINUED)

MEDIATING FACTORS

The strength and type of personal reaction to trauma vary depending on:

- The person's prior experience with the same or a similar event; the emotional effect of multiple events can be cumulative, leading to greater stress reactions.
- The intensity of the disruption in the survivors' lives; the more the survivors' lives are disrupted, the greater their psychological and physiological reactions may become.
- The meaning of the event to the individual; the more catastrophic the survivor perceives the event to be to him or her personally, the more intense his or her stress reaction will be.
- The emotional well-being of the individual and the resources (especially social) that he or she has to cope; people who have had other recent traumas may not cope with additional stresses.
- The length of time that has elapsed between the event's occurrence and the present; the reality of the event takes time to "sink in."

NERT members can't know — and should never assume to know — what someone is thinking or feeling. Keep the phases in mind.

You should not take the survivors' surface attitudes personally. Rescuers may expect to see a range of responses that will vary from person to person, but the responses they see will be part of the psychological impact of the event — and probably will not relate to anything that the NERTs have or have not done.

STABILIZING SURVIVORS

The goal of on scene psychological intervention on the part of NERT members should be to stabilize the incident scene by stabilizing individuals. While any medical needs must be addressed first, you can provide psychological intervention.

- Observe individuals to determine their level of responsiveness and whether they pose a danger to themselves or to others.
- Get uninjured people involved in helping. Engaging survivors in focused activity helps them cope, so give them constructive jobs to do such as organizing supplies. This strategy is especially effective for survivors who are being disruptive.
- Help survivors connect to natural support systems, such as family, friends, or clergy.
- Provide support by:
    - Listening to them talk about their feelings or physical needs. Survivors often need to talk about what they've been through — and they want someone to listen.
    - Empathizing. Caring responses show survivors that someone else shares their feelings of pain and grief.

WORKING WITH SURVIVORS' TRAUMA (CONTINUED)

BEING AN EMPATHETIC LISTENER

Being an empathetic listener requires the listener to listen and to let the survivor talk.

- Put him- or herself in the speaker's shoes in order to better understand the speaker's point of view. Draw upon past experiences or try to imagine how the speaker is feeling. In order to limit the effects of vicarious trauma, be careful not to completely take on the speaker's feelings.
- Listen for meaning, not just words, and pay close attention to the speaker's nonverbal communication, such as body language, facial expressions, and tone.
- Paraphrase the speaker periodically to make sure that you have fully understood what the speaker has said and to indicate to the speaker that you are listening. This reinforces the communication process.

Survivors that show evidence of being suicidal, psychotic, or unable to care for themselves should be referred to mental health professionals for support. (This will be infrequent in most groups of survivors.)

WHAT NOT TO SAY

When providing support, you should avoid saying the following phrases. On the surface, these phrases may be meant to comfort the survivors, but they can be misinterpreted.

- "I understand." In most situations we cannot understand unless we have had the same experience.
- "Don't feel bad." The survivor has a right to feel bad and will need time to feel differently.
- "You're strong" or "You'll get through this." Many survivors do not feel strong and question if they will recover from the loss.
- "Don't cry." It is okay to cry.
- "It's God's will." With a person you do not know, giving religious meaning to an event may insult or anger the person.
- "It could be worse," "At least you still have …", or "Everything will be okay." It is up to the individual to decide whether things could be worse or if everything can be okay.

Rather than provide comfort, these types of responses could elicit a strong negative response or distance the survivor from the listener.

It is okay to apologize if the survivor reacts negatively to something that was said.

MANAGING THE DEATH SCENE

One unpleasant task that NERT members may face is dealing with a victim who dies while under the team's care. The guidelines below (T.W. Dietz, 2001; J.M. Tortorici Luna, 2002) are useful for dealing with this situation:

- Cover the body; treat it with respect. Wrap mutilated bodies tightly.
- If the person has died while at the treatment area, move the body to your team's temporary morgue. (If the person was tagged as "dead" during triage, do not remove from the incident area.)
- Follow local laws and protocols for handling the deceased.
- Talk with local authorities to determine the plan.

INFORMING FAMILY AND FRIENDS OF A DEATH

In some cases, family members or friends may not know of the death of their loved one, and NERT members may have to tell them. In this situation, NERT members should:

- Separate the family members and friends from others in a quiet, private place.
- Have the person(s) sit down, if possible.
- Make eye contact and use a calm, kind voice.
- Use the following words to tell the family members and friends about the death: "I'm sorry, but your family member has died. I am so sorry." It is okay to reference the deceased person's name or their relation to the survivor if you know it.
- Let the family and friends grieve.

Unit Summary

- During a disaster, rescuers may be exposed to things that are extremely unpleasant or uncomfortable. These experiences will be stressful and may be traumatic.
  - Over-identifying with survivors may subject rescuers to vicarious trauma.
  - There are both psychological and physiological symptoms of trauma that may be observed in survivors and rescuers after a disaster.
  - NERT leaders can take steps to reduce stress on rescue workers before, during, and after an incident.
  - NERT responders can take steps to personally reduce stress.
- The critical incident stress debriefing (CISD) is one component of critical incident stress management. CISD has seven phases and is an intervention for dealing with trauma.
- Research shows that survivors go through distinct emotional phases following a disaster.
  - Impact phase
  - Inventory phase
  - Rescue phase
  - Recovery phase
- Traumatic stress may affect cognitive functioning, physical health, and interpersonal reactions.
  - Different people react differently to traumatic stress based on a variety of mediating factors.
  - A traumatic crisis occurs when a person's ability to cope is overwhelmed.
- The goal of on scene psychological intervention is to stabilize the incident by stabilizing individuals.
- Provide support for survivors by being an empathetic listener.

HOMEWORK ASSIGNMENT

Review the final exam and prepare for the final session. Wear clothes for out-door and indoor conditions. Prepare for time of day that you are training. Wear closed toes shoes and long pants. Consider bringing a flashlight.

UNIT 8: TERRORISM AND NERT

In this unit you will learn about:

- **What Terrorism Is:** The definition of terrorism and terrorist goals.
- **Terrorist Targets:** How terrorists choose their targets.
- **Terrorist Weapons:** The weapons that terrorists are known or are suspected to have and the risk posed by various terrorist weapons.
- **CBRNE Indicators:** Cues that help to identify a when terrorist attack may have occurred or may be imminent.
- **Preparing at Home, Work, and in Your Neighborhood:** Ways to prepare for a terrorist incident.
- **NERTs and Terrorist Incidents:** NERT protocols for terrorist incidents and protective action following an event.

Introduction and Unit Overview

UNIT OBJECTIVES

At the end of this unit, you should be able to:

- Define terrorism.
- Identify potential targets in the community.
- Identify the eight signs of terrorism.
- Identify NERT operating procedures for a terrorist incident.
- Describe the actions to take following a suspected terrorist incident.

UNIT TOPICS

This unit will cover the following topics:

- What Is Terrorism?
- Terrorist Targets
- Terrorist Weapons
- CBRNE Indicators
- Preparing at Home, Work, and in Your Neighborhood
- NERTs and Terrorist Incidents

What Is Terrorism?

The U.S. Department of Justice's definition of terrorism:

- The unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives

Terrorism may be perpetrated by foreign or domestic individuals or groups.

While the United States has not had as many terrorist incidents as some other countries, we have had several serious attacks, including:

- The bombing of the World Trade Center (1993)
- The bombing of the Alfred P. Murrah Federal Building in Oklahoma City (1995)
- The bombing at the Atlanta Olympic Games (1996)
- Bombings at family planning clinics and gay bars in the Atlanta area (1996 and 1997)
- The destruction of the World Trade Center and a portion of the Pentagon (2001)
- The sending of anthrax through the U.S. mail (2001)

Each of these incidents demonstrates that we live with the possibility of additional terrorist attacks on our own soil.

TERRORIST GOALS

Terrorist attacks can occur with or without warning. Because of the nature of terrorist attacks, they can, and are often intended to, result in:

- Mass casualties
- Loss of critical resources
- Disruption of vital services
- Disruption of the economy
- Heightened fear

Terrorist Targets

Terrorists choose their targets to meet specific goals. For example, the Oklahoma City bombing was a strike against the Federal Government. The September 11, 2001, attacks targeted both our economic center and our military establishment while raising casualty levels to new heights and changing the way Americans think about their safety.

Terrorists may select "soft" or lightly protected targets over "hard" or very secure targets.

Potential terrorist targets might include:

- Seats of government
- Key industries
- Bridges, subways, tunnels, and other key transportation facilities
- Water supplies and utilities
- Places of historical significance

Terrorists may also be drawn to major events such as parades or athletic and entertainment events. Because of this, you may see increased security measures to help deter and prevent terrorism.

Terrorist Weapons

Experts generally agree that there are five categories of possible terrorist weapons. The acronym CBRNE will help you remember the five categories.

1. **C**hemical
2. **B**iological
3. **R**adiological
4. **N**uclear
5. High-yield **E**xplosives

While this unit focuses on terrorism, it is important to remember that CBRNE incidents may occur accidentally (such as a chlorine tanker truck accident) or naturally (such as pandemic influenza).

Another type of terrorist weapon is deliberate, large-scale disruption of computer networks. This is known as cyberterrorism. To help guard against cyberterrorism, it is important that computer users implement appropriate security measures.

CHEMICAL WEAPONS

Unlike biological agents or nuclear materials, which are difficult to produce or purchase, the ingredients used to produce chemical weapons are found in common products and petrochemicals. Terrorists can turn these common products into lethal weapons.

TERRORIST WEAPONS (CONTINUED)

There are five categories of chemical weapons.

- Blister agents cause blisters, burns, and other tissue damage. Exposure may be made through liquid or vapor contact with any exposed skin, inhalation, or ingestion. Blister agents include several families of chemicals, including mustard and lewisite. The effects of blister agents may be similar to those experienced with riot-control agents like "tear" gas but do not clear upon movement into fresh air. In fact, the effects of most blister agents increase with time and may not reach their full impact for 12 to 18 hours.
- Blood agents are absorbed into the bloodstream and deprive blood cells of oxygen. Exposure may be made through liquid or vapor contact with any exposed skin, inhalation, or ingestion. Blood agents include two main families of chemicals, including hydrogen cyanide and cyanogen chloride. Those who are affected by blood agents may appear "bluish" across the nose and cheeks and around the mouth. As the symptoms of blood agents progress, the survivor will convulse and lose consciousness.
- Choking agents attack the lungs. Following exposure through inhalation, the lungs fill with fluid, which prevents oxygen from being absorbed by, and carbon dioxide from being removed from, the blood. Death results from lack of oxygen and is similar to drowning. Two common examples of choking agents are phosgene and chlorine.
- Nerve agents affect the central nervous system. These agents act most quickly and are the most lethal of all chemical agents, acting within seconds of exposure. Survivors of nerve agents experience constricted pupils, runny nose, shortness of breath, convulsions, and cessation of breathing. Sarin is an example of a nerve agent.
- Riot-control agents cause respiratory distress and tearing and are designed to incapacitate rather than kill. Riot-control agents cause intense pain, especially when in contact with mucus membrane in areas such as the eyes, nose, and mouth. Common riot-control agents include "tear" gas and capsicum (also called pepper spray).

The onset of symptoms that result from chemical weapons can range from immediate to 18 hours following exposure. Chemical weapons are considered a moderate risk.

BIOLOGICAL WEAPONS

Biological agents are found in nature and can also be manufactured. It is possible to weaponize biological agents so that they can be disseminated to affect broad segments of the population, animal populations, or crops.

TERRORIST WEAPONS (CONTINUED)

Some biological agents are contagious, but many are not. Routes of exposure for biological weapons are:

- Inhalation
- Ingestion
- Absorption

Many, but not all, biological agents take days or even weeks for their symptoms to appear. It is possible for a biological attack to occur and remain unnoticed for some time. Consequently, more people may be affected before it is clear that an attack has occurred.

It is also possible for contagious biological agents to spread far beyond their initial point of contamination as the daily routines of affected individuals broaden the reach of the agent far beyond the initial contamination area. Therefore, biological weapons are considered a high risk.

RADIOLOGICAL WEAPONS

Radiation is energy in the form of waves or particles given off during radioactive decay or as a consequence of certain physical processes that we can control. Examples of these are x-ray machines and particle accelerators. Radiation cannot be seen, smelled, or otherwise detected by normal senses. High doses or prolonged exposure to radiation can cause radiation sickness and possibly death.

Radiation dispersal devices (RDDs) may be improvised explosive devices, also called "dirty bombs," but can include non-explosive devices that could be used to spread radioactive material as well. It is not necessary to use a bomb to disperse radioactive materials; these materials come in solids, liquids, and powdered forms, which can be spread covertly. The major impact of a dirty bomb is produced by the blast. RDDs are considered to be a much higher threat because radiological materials are much easier to obtain than enriched nuclear materials, and the technology required to detonate an RDD is similar to that involved in detonating conventional explosives.

Radiological materials are readily available in hospitals and other medical facilities, in university science laboratories, and in many products with commercial uses. Terrorists who would attack using an RDD would need relatively small amounts of radioactive material to make an effective device. As such, radiological weapons are considered a moderate to high risk.

TERRORIST WEAPONS (CONTINUED)

NUCLEAR WEAPONS

A nuclear weapon is an explosive device that derives its destructive force from nuclear reaction. All nuclear devices cause deadly effects when exploded, including blinding light, intense heat, initial nuclear radiation, blast, fires started by the heat pulse, secondary fires caused by the destruction, and widespread radioactive material that can contaminate the air, water, and ground surfaces for miles around.

A nuclear device can range from a weapon carried by an intercontinental missile launched by a hostile nation or terrorist organization, to a small portable nuclear device transported by an individual. Terrorists seeking to use nuclear weapons may try to obtain a nuclear warhead from within a country known to possess nuclear weapons or they may acquire fissile material in order to make a much smaller nuclear bomb, known as an improvised nuclear device.

A terrorist attack with a nuclear weapon would be much different from an attack with a conventional explosive device.

- The affected area would be much larger than in a conventional explosion, and debris and other usually harmless items would be contaminated.
- Due to radioactive contamination, there would be potential for physical injury and death to persons who were not injured in the initial attack. People may also become injured in the resulting damaged environment.
- The long-term health effects would be more difficult to ascertain and manage.
- Experts believe that the complexities of a terrorist group's obtaining a nuclear weapon and maintaining the tolerances that are required for the weapon to function make the use of nuclear weapons by terrorist groups a low risk.

HIGH-YIELD EXPLOSIVES

High-yield explosives are the most commonly used terrorist weapons because they are easy to get, easy to hide and activate, and they can cause extensive damage. While terrorists have used military munitions such as grenades, mortars, and shoulder-fired surface-to-air missiles, experts rate high-yield explosives in the form of improvised explosive devices as a greater threat.

Improvised explosive devices (IEDs) include any device that is created in an improvised manner, incorporating explosives or other materials designed to destroy, disfigure, distract, or harass. Most bombs used by terrorists are improvised. The raw materials required for many explosives can be purchased commercially (e.g., ammonium nitrate, which is also used as fertilizer), purchased from commercial blasting supply companies, or developed using readily available household ingredients. An IED may also contain chemicals as a means of increasing their damage potential. High-yield explosives are considered the highest risk when dealing with a potential terrorist attack

TERRORIST WEAPONS (CONTINUED)

ASSESSING THE RISK

- Although nuclear weapons present the highest impact, they are considered the lowest risk because of the difficulty in obtaining enough weapons-grade material and the technical complexity of developing and maintaining the tolerances required for a nuclear device to detonate.
- Chemical and high-yield explosive devices are considered higher risk but lower impact weapons.
- Biological weapons are considered both high-risk and high-impact weapons — but only for diseases that are highly contagious. Other types of biological weapons (i.e., those requiring dispersal devices) are considered a lower risk because of the sensitivity of the biological agents to heat, light, and shock.

Eight Signs of Terrorism

We all have a responsibility to play an active role in keeping the country safe. Everyone should report to authorities anything they see that seems suspicious or out of place. The phrase “If you see something, say something” took on additional power after the foiled Times Square bomb plot in New York City. On May 1, 2010, street vendors in Times Square noticed a smoking SUV with its blinkers on, engine running, and no one inside. They decided to say something to a police officer. Thousands of people were cleared from the area while the bomb was dismantled.

Through funding from DHS, the Center for Empowered Learning and Living (the CELL) produced a video outlining the eight warning signs that terrorist activity may be forthcoming (www.thecell.org). These signs are exhibited by potential terrorists (often in this order) and include:

1. Surveillance: The targeted area is watched and studied carefully. This may include recording or monitoring activities.
2. Elicitation: Information is gathered that is specific to the intended target. This may be by mail, phone, or in person.
3. Tests of security: Local security measures are tested and analyzed, including measuring reaction times to security breaches or attempts to penetrate security.
4. Funding: Raising, transferring, spending money, which may include selling drugs or stolen merchandise, funneling money through businesses or charities
5. Acquiring supplies: Necessary supplies are gathered to prepare the attack, including weapons/weapon components, transportation, and communications. Supplies may be purchased with cash only.
6. Impersonation or suspicious people who don’t belong: People impersonating roles to gain access or information and people who don’t fit in or don’t seem to belong in the location

Eight Signs of Terrorism (Continued)

7. Rehearsal and dry runs: Groups or individuals will often operate test runs before the actual attack.
8. Deployment: The final and most urgent phase when terrorists are deploying assets and getting into position. Attack is imminent.

The presence of even a few of these signs may indicate the possibility of a terrorist attack.

Although it is not the mission of NERT members to keep constant watch for these eight signs, everyone should be alert to changes in their environment as a clue to a possible terrorist attack and report suspicious activities to appropriate authorities.

CBRNE Indicators

INDICATORS AN ATTACK HAS OCCURRED OR IS UNDERWAY

While bombs and explosions have obvious immediate effects, **biological or chemical attacks may not be as immediately noticeable**. Indicators that a biological or chemical attack has occurred or is underway could include:

- Vapor clouds or mists that are unusual for the area or for the time of day. Although many biological and chemical agents cannot be seen with the naked eye, the substances in which they are suspended when dispersed may be visible for a period of time after an attack.
- Unscheduled spraying or abandoned spray devices. Several September 11, 2001, terrorists are known to have made inquiries into purchasing and learning to fly crop duster airplanes. Many other types of agricultural sprayers can be used to disperse biological and (more likely) chemical agents.
- Materials or equipment that are unusual for the area. Dispersal devices, lab equipment, or quantities of hazardous materials that are not typically located in the area may indicate that a terrorist attack is occurring or is about to occur.
- Unusual odors or tastes
- Out of place and unattended packages, boxes, or vehicles. Items that are out of place and unattended could signal a possible terrorist attack. This could include chemical or biological agents as well as explosives.
- Packages that are leaking may be harmless, but they may also signal a terrorist incident. The terrorists who released sarin in the Tokyo subway system (Aum Shinrikyo) merely poked holes in bags containing sarin, then left the area as the poison leaked out.

CBRNE INDICATORS (CONTINUED)

If you observe any of these indicators of a terrorist incident, you should:

- Not touch it!
- Move away from the object or area
- Report it to authorities immediately

Remember: Cellular phones and two-way radios create static electricity and may detonate explosive devices. NERT members should always report suspected explosive devices via landline.

Physical effects on people and animals may also indicate that a chemical or biological attack has occurred. These may include:

- Numerous sick or dead animals, fish, or birds. Wildlife is often more sensitive to chemical or biological agents than humans. The absence of wildlife or insects that are common for the area or animals, fish, or birds that are obviously sick, dying, or dead may indicate the presence of a biological or chemical attack.
- Large numbers of persons seeking medical attention with similar symptoms that are not characteristic of the season. The symptoms of many biological agents mimic the flu or other common illnesses. An unusually large number of persons seeking medical attention for the flu in July could indicate that a biological attack has taken place.
- Multiple survivors who are exhibiting similar symptoms. Symptoms may range from difficulty breathing to skin necrosis to uncontrolled salivating, uncontrolled muscle twitching, convulsions, or seizure activity. All of these symptoms indicate that a chemical attack may have taken place.
- Multiple casualties without obvious signs of trauma may indicate a biological or chemical attack.

Preparing at Home, Work, and In Your Neighborhood

Because personal safety is the first priority, as with hazardous materials, NERT members should treat possible terrorist incidents as a stop sign. **NERTs are not equipped or trained to respond to terrorist incidents.** Professional responders will need specialized equipment and personnel to respond to a terrorist incident.

In addition, it is important to remember that terrorism incident scenes are also crime scenes. NERT members should avoid taking any action that may disturb potential evidence.

PREPARE FOR TERRORIST ACTIVITY

There are ways to prepare for a terrorist incident. The CBRNE events covered in this unit are survivable and what you learn and do now may impact the quality of your survival. Many of the steps for preparing for a terrorist incident are the same as for

natural hazards. Please review Unit 1: Disaster Preparedness on the importance of learning about community alerts and warnings, having household plans, and assembling supplies in multiple locations. This unit will focus on some of the preparedness actions and protective measures that are particularly relevant for CBRNE events. These include sheltering-in-place; understanding the concepts of time, distance, and shielding; and decontamination.

SHELTER-IN-PLACE PROCEDURES

Procedures for sheltering-in-place during a chemical or biological attack include:

- Shut off the ventilation system and latch all doors and windows to reduce airflow from the outside.
- Go to your shelter-in-place room (where your precut plastic, duct tape, radio, and other supplies should be stored).
- Use precut plastic sheeting to cover openings where air can enter the room, including doors, windows, vents, electrical outlets, and telephone outlets. When cut, the sheeting should extend several inches beyond the dimensions of the door or window to allow room to duct tape the sheeting to the walls and floor.
- Tape the plastic sheeting around all doors and windows using duct tape to ensure a good seal.
- Seal with duct tape other areas where air can come in, such as under doors and areas where pipes enter the home. Air can be blocked by placing towels or other soft objects in areas where air could enter, then securing them with duct tape.
- Listen to a battery-powered radio for the all clear. Chemicals used in an attack will be carried on the wind and will dissipate over time. **You will generally not need to stay in a sealed room for more than a few hours.** Listen to Emergency Alert System broadcasts to know when it is safe to leave the safe room.
- After contaminants have cleared, open windows and vents and turn on fans to provide ventilation.

To be able to execute these procedures during an actual event requires that you:

- Store precut plastic sheeting in your identified shelter-in-place room
- Assemble and store food, water, and a battery-operated radio in the shelter-in-place room
- Practice sealing the room
- Establish shelter-in-place procedures wherever you spend significant amounts of time at home, at work, at school

As a rule of thumb, 10 square feet of floor space per person will provide sufficient air to prevent carbon dioxide buildup for up to 5 hours, assuming a normal breathing rate while resting.

NERTS and Terrorist Incidents

PROTECTION FROM RADIOACTIVE FALLOUT

There are three factors that significantly affect safety after an incident that involves radiation, such as a dirty bomb or a nuclear device. They are distance, shielding, and time. A critical protective action in a radiological or nuclear event is to get inside as quickly as possible, stay inside, and stay tuned to local radio or television stations for further guidance.

- Go Deep Inside (distance/shielding): It is important to find adequate shelter quickly to avoid radioactive fallout resulting from the explosion. Get inside as soon as possible and go to the farthest interior room or to a basement. Flat roofs collect fallout particles so the top floor is not a good choice, nor is a floor adjacent to a neighboring flat roof. The more distance between you and the fallout particles, the better.

  If you are outside when the event occurs, do not look at the flash or fire ball. It can blind you. Take cover behind anything that will offer protection, lie flat, and cover your head. If the explosion is some distance away, it could take 30 seconds or more for the blast wave to hit. Get inside as soon as you can. If you are not able to get inside, maintain as great a distance as possible from the incident and shield yourself with any available resources: earth, concrete, bricks, books.

- Stay Inside (time): Limiting the amount of time in the area of an incident is important to limit exposure to avoid radioactive fallout resulting from the explosion.
  Stay inside unless threatened by fire, building collapse, medical necessity, or other immediate threats. Remain inside until you receive notification from authorities that it is safe to leave the building. Be prepared to shelter inside for up to 2 to 3 days.

- Stay Tuned: Radiation levels outside will gradually drop and authorities will tell you when it is safe to go outside, bearing in mind that the explosion will have caused significant damage to buildings and infrastructure.

BASIC DECONTAMINATION PROCEDURES

The objective of decontamination is to remove harmful chemicals or particles of radioactive dirt or dust that have come in contact with the skin or clothes.

- Leave the contaminated area immediately. Depending on the circumstances, go inside, go outside, or go upwind, uphill, or upstream from the contaminant. (Seek a distance of at least 1,000 to 1,500 feet.)
- Take decontamination action. Seconds count! The goal is to limit the time that the agent is in contact with the skin.
  - Remove everything from the body, including jewelry. Cut off clothing that would normally be removed over the head to reduce the probability of inhaling or ingesting the agent. Seal your clothes in a plastic bag.
  - Wash hands before using them to shower. If no shower is available, improvise with water from faucets or bottled water.

NERTS AND TERRORIST INCIDENTS (CONTINUED)

- Flush the entire body, including the eyes, underarms, and groin area, with copious amounts of cool water. Hot water opens the pores of the skin and can promote absorption of the contaminant. Using copious amounts of water is important because some chemicals react to small amounts of water.

  If soap is immediately available, mix the soap with water for decontamination. Avoid scrubbing with soap because scrubbing can rub the chemical into the skin rather than remove it.

  Wash hair with soap or shampoo or rinse with water if soap is not available. Do not use conditioner as that can bind radioactive materials to your hair and make it difficult to remove.

  If hosing someone else off or pouring water from a container, avoid both physical contact with the person and with the runoff.

  The water used for decontamination must be contained and covered or drained outside of the shelter area to avoid shelter contamination.

- Blot dry using an absorbent cloth. Do not rub the skin! Put on clean clothes.

- As soon as possible, emergency responders will set up mass decontamination capabilities. For radiological events, stations for radiation monitoring and blood tests will also be set up to determine levels of exposure and what next steps to take to protect health.

- Food Safety. Radioactive particles in food or water may be harmful if consumed. Food in tightly covered containers (cans, bottles, plastic, and boxes) will be safe to eat or drink if you dust or wipe off the containers. Be sure to wash fruit and vegetables and peel them carefully. Water will be safe if it is in covered containers or if it has come from covered wells or from undamaged and uncontaminated water systems.

TREATING OTHERS

Remember that the first priority for NERTs is personal safety.

- NERT members should take self-protective measures only.
- They should not attempt to treat the injuries of survivors in the contaminated area.

As with professional responders, NERT members may have difficulty dealing with the idea that they should not try to help others, even partners, who are injured but may have been contaminated. Remember that:

1. You have a responsibility to yourself, to other NERT members, and to your families to operate safely.
2. You are neither trained nor equipped to deal with contaminated survivors.
3. You cannot help anyone if you become a victim. In fact, you may make matters considerably worse if you spread the contamination.

NERTS AND TERRORIST INCIDENTS (CONTINUED)

You must make the best decisions possible with the information that you have at hand. Even if an incident turns out not to be terrorist related, you have made the right decision if you have done the most good for the greatest number and have not become a victim yourself**.**

WHAT PROFESSIONAL RESPONDERS WILL DO

There are several measures that you can expect professional responders to take when they arrive at the scene of a terrorist incident.

The first step that professional responders will take when they arrive at the scene is to conduct a thorough size up. They will follow steps that are very similar to those that NERTs take to determine:

- What is going on
- How bad the situation is and how much worse it could get
- What measures can be taken to control the incident safely
- What resources will be needed

NERTs can expect professional responders to treat terrorist incidents much the same as hazardous materials incidents. As such, the next step that they will take is to establish three incident zones to minimize the risk of spreading contamination from the incident site.

- The Hot Zone includes the incident scene and the contaminated area around the scene. If the incident is outdoors, the Hot Zone will spread downwind, taking wind speed into consideration.
- The Warm Zone is upwind (and upstream if the contaminant is waterborne) from the Hot Zone and is used to isolate survivors during decontamination. It is called the Warm Zone because the evacuees can carry or spread a contaminant into this area. Professional responders will hold those who require decontamination in the Warm Zone until decontamination is complete so that contaminants do not spread.
- The Cold Zone is located upwind and beyond the Warm Zone. Those who are not contaminated or who have been decontaminated will be evacuated to the Cold Zone and kept there until professional responders authorize them to leave.

Unit Summary

Terrorism may be perpetrated by foreign or domestic individuals or groups. Terrorists attack to:

- Intimidate the government or the civilian population
- Further their objectives

When terrorists attack, their goals are to:

- Create mass casualties
- Disrupt critical resources, vital services, and the economy
- Cause fear

The acronym CBRNE helps to remember the types of weapons that terrorists might be expected to use chemical, biological, radiological, nuclear, high-yield explosives.

There are a range of environmental and physical indicators for terrorist attacks. Paying attention to what is not present in the environment that should be is as important as what is present that should not be. NERT members should treat possible terrorist incidents the same as they would HazMat incidents — as a stop sign. If they observe indicators of a possible terrorist incident.

- Do not touch it!
- Move away from the object or area
- Report it to authorities immediately

NERTs can help limit their exposure to the harmful effects of terrorist weapons by:

- Evacuating the area as quickly as possible, being sure to move perpendicular to or upwind of an airborne plume, and upstream if contaminants are waterborne
- Using the protection of a sturdy building as shielding, going inside if contaminant is outside and going outside if contaminant is inside. If the event includes radioactive fallout, it is important to go quickly deep inside a building for protection.
- Safely decontaminating themselves when necessary

NERT members should take immediate action to protect themselves and, if exposed, follow basic decontamination procedures immediately. Because the safety of NERT members is the number one priority, NERT members should not attempt to treat anyone who has been contaminated or perform decontamination procedures for them.

Terrorist incident scenes are also crime scenes. NERTs DO NOT disturb potential evidence.

HOMEWORK ASSIGNMENT

Review materials from the previous units and complete the exam in your book to prepare for the final session.

UNIT 9: COURSE REVIEW & FINAL EXAM

This unit includes:

- **A Review of Key Points from the Course**
- **A Final Exam**

Course Review

COURSE OVERVIEW

Here are the key points of the course. If you do not remember a particular point, refer back to that specific unit.

DISASTER PREPAREDNESS UNIT

- Home and workplace preparedness:
  - Assembling a disaster supply kit
  - Developing a disaster plan
  - Developing a safe room
  - Evacuation versus sheltering-in-place

FIRE SAFETY AND UTILITY CONTROLS UNIT

- Hazardous materials:
  - Identification
  - Defensive strategies
- Utility control:
  - Gas
  - Electric
  - Water
- Size up: The importance of NERT size up and the steps in the size up process
- Firefighting resources:
  - General resources available
  - Interior wet standpipes, including operation and limitations (if applicable)
  - Portable fire extinguishers, their capabilities and limitations
- Safety considerations:
  - Safety equipment must be used at all times.
  - NERT members must always use the buddy system.
  - Fire suppression group leaders should always have a backup team available.

COURSE REVIEW

DISASTER MEDICAL OPERATIONS UNITS

- The “three killers”
- Head-Tilt/Chin-Lift method of opening an airway
- Methods for controlling bleeding:
  - Direct pressure
  - Elevation
  - Pressure points
- Treatment for shock:
  - Patient position
  - Maintenance of body temperature
- Conducting triage
- Head-to-toe assessments
- Wound care, splinting and bandaging
- Treatment area considerations

LIGHT SEARCH AND RESCUE

- Goals of search and rescue:
  - Rescuing the greatest number of people in the shortest amount of time
  - Rescuing the lightly trapped survivors first
- Size up:
  - Construction types
- Structural damage:
  - Light damage
  - Moderate damage
  - Heavy damage
- Search techniques:
  - Be systematic and thorough
  - Mark areas searched
  - Document search results
- Rescue techniques:
  - Leverage and cribbing
  - Survivor carries lifts and drags

COURSE REVIEW

NERT ORGANIZATION

- Organizational structure:
  - Well-defined management structure
  - Effective communications among agency personnel
  - Accountability
- Command objectives:
  - Identify the scope of the incident through damage assessment
  - Determine an overall strategy and logistical requirements
  - Deploy resources efficiently but safely

DISASTER PSYCHOLOGY

- In the aftermath of disasters, survivors and disaster workers can experience psychological and physiological symptoms of stress.
- The steps NERT leaders should take to reduce stress on team members
- The steps NERT responders can take to reduce their own stress levels
- Strategies for helping survivors work through their trauma

TERRORISM

- CBRNE indicators
- NERT protocols for terrorist incidents
- Protective actions following a terrorist incident

Course Summary

Don't forget the importance of continuing education and training to maintain and improve your skills and knowledge. You can attend:

- Ongoing training that is offered every 3rd Saturday of the month, with April and October being Citywide drills
- Neighborhood meetings and activities
- Standard and advanced first aid courses
- Cardiopulmonary resuscitation (CPR) classes
- Independent Study (IS) courses available online from FEMA at www.training.fema.gov/IS/

Final Exam

This take-home examination consists of 31 multiple choice and short answer questions. Answer each question using the information presented in class or in the manual. Correct answers will be discussed during the review session at the start of the fifth class.

1. A part of our self-preparedness goal is to develop a capacity for self-sufficiency. List six preparation steps you can take to improve your chances for surviving an earthquake.

_____ _____ _____

_____ _____ _____

2. During an earthquake, many people are injured entering or exiting a building. Where is a safe place to take shelter?

Indoors: _____

Outdoors: _____

In a car: _____

3. Water is probably the most important item to store in preparation for an earthquake. What is the recommended minimum you should have on hand?

_____ per person, per _____, for _____ days.

4. Any event that has a profound emotional impact can evoke strong reactions. List some common responses to stress.

_____ _____ _____

_____ _____ _____

5. There are four classes or types of fire. What types of fuels are represented by the following classes?

_____ _____ _____

_____ _____ _____

6. What is the primary hazard associated with a fire involving energized electrical equipment?

a. Explosion b. Toxic gas
c. Electrical shock d. Heat

7. We use the acronym P.A.S.S. to remind us of the steps required to properly operate a fire extinguisher. What does each letter stand for?

P A S S_____
_____
_____
_____

8. As rescuers, we should be concerned about our safety, as well as the safety of the victim. List three pieces of personal protective equipment that should be used during light search and rescue operations.

_____ _____ _____

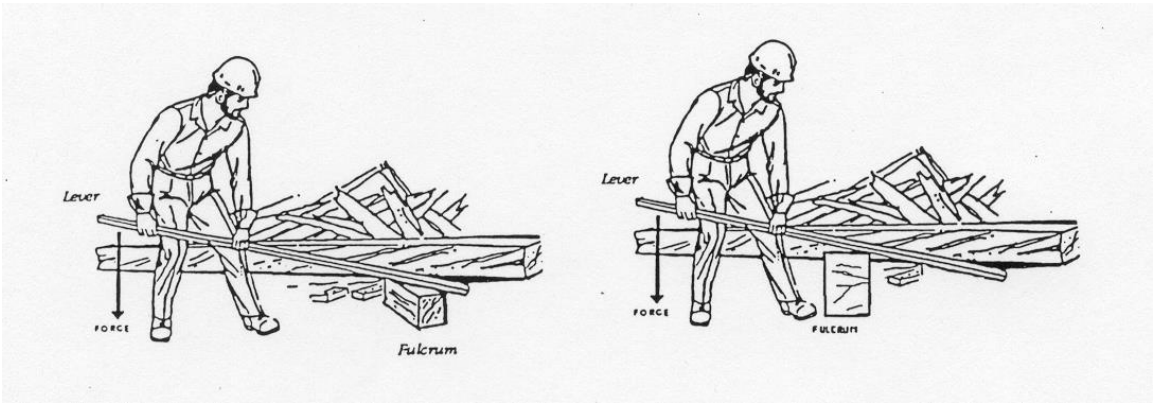
9. When moving heavy objects, it is good practice to stabilize them during the lifting operation using blocks, books, or other available materials. What is this procedure called?

10. Brick buildings constructed prior to 1933 are particularly prone to damage or collapse from earthquakes. List three ways to recognize these buildings.

_____ _____ _____

11. Mechanical advantage is often needed to remove heavy objects from trapped victims. Which of the following diagrams is the most effective use of mechanical advantage?

A **B**



12. It is important that there be a marking on the outside of a building telling that a search is in progress. What marking would you put on the outside of a building before entering?

_____

What marking would you use when exiting the building?

_____

What information goes in the four quadrants?

_____ _____

_____ _____

13. The most common airway obstruction is?

a. Dentures
b. Food
c. Tongue
d. Body fluids

14. Our first attempt at controlling bleeding should be to apply:

a. Pressure bandage next to wound
b. Direct pressure to wound
c. Pressure point above wound
d. Elevation

15. Shock is defined as widespread inadequate tissue perfusion. It is a life-threatening condition that can be recognized by changes in mental status. In a disaster, as emergency responders, how can we treat a patient for shock?

_____ _____ _____

16. We can effectively save the lives of many injured victims by checking for life-threatening problems immediately and systematically. What are the four steps in START triage?

_____ _____

_____ _____

17. If during our initial triage, we encounter a victim who is not breathing, we should:

a. Start CPR immediately
b. Reposition the head to open the airway
c. Tag the patient “Dead”
d. Tag the patient “I” for Immediate

18. When performing the blanch test, we can assume that the patient's circulation system is functioning properly if the color returns within the pressure on the nail bed.
seconds of releasing

a. 2
b. 5
c. 10
d. 15

19. To check a patient's mental status, we ask:

a. Their name
b. The day of the week
c. To follow a simple command
d. If they remember what happened

20. What are the three classifications of building damage?

_____ _____ _____

21. What are some of the questions that you must answer before entering a building to do a search?

_____

_____

_____

_____

22. How can you tell if your gas shutoff is working properly?

_____

23. When do you shut off the gas?

_____

_____

24. After an earthquake, you smell gas! You look at your gas meter and see the dials spinning. You must shut off your gas! Circle the diagram that shows the gas valve in the off position.

25. What type of extinguisher is recommended for your home?

_____

26. What are some of the signs of structural damage to a building that can be seen from the street?

_____ _____ _____

_____ _____ _____

27. What are some signs of a Hazardous Materials spill?

_____

_____

_____

_____

28. What are the three categories we use to sort people out during triage?

_____ _____ _____

29. During a disaster, what is the goal of the NERT team operations?

_____

30. If we take immediate action on victims showing signs of three life threatening conditions, we may save many lives. What are these conditions?

_____ _____ _____

31. What is the first thing we check for in all injured victims?

a. Mental status
b. Airway
c. Bleeding
d. Shock

32. How does the FBI define “terrorism”?

_____

_____

_____

33. Fill in the CBRNE acronym below with the correct word as it refers to terrorism weapons.

C _____
B _____
R _____
N _____
E _____

34. What are the body’s three routes of exposure?

_____ _____ _____

35. List four possible CBRNE indicators.

_____

_____

_____

_____

36. What are the first steps of the decontamination process?

_____

_____

_____

_____

37. What is in your disaster supply kit that will allow you to receive information and instructions from when a terrorist incident has occurred?

_____

38. What is rule number one for NERT members?

_____

San Francisco Fire Department Volunteer Code of Conduct

POLICIES:

Purpose of Volunteer Policies

These policies are written to provide overall guidance and direction to staff and volunteers engaged in volunteer involvement and management efforts. These policies do not constitute, either implicitly or explicitly, a binding contractual or personnel agreement. The City and County of San Francisco ("the City") and San Francisco Fire Department ("SFFD") reserves the exclusive right to change any of these policies at any time and to expect adherence to the changed policy. Changes to or exceptions from these policies may only be granted by the Chief of Department, and must be obtained in advance and in writing. Areas not specifically covered by these policies shall be determined by the Neighborhood Emergency Response Team (NERT) Program Coordinator.

Definition of 'Volunteer'

A "volunteer" is anyone who, without compensation beyond approved reimbursement, performs a task at the direction of and on behalf of the SFFD. SFFD must officially accept the "volunteer" prior to performance of the task. Volunteers are not "employees" of the SFFD, nor are volunteers given special considerations for employment.

Definition of 'the Agency'

Any reference to the agency in this document refers to the San Francisco Fire Department (SFFD)

NERT Volunteer and 'Active Status'

A NERT volunteer is a person trained by the SFFD in compliance with the Federal Community Emergency Response Team (CERT) Guidelines. Upon completion of basic training, volunteers are registered as California Disaster Service Worker Volunteers (DSWVP) and issued an identification card valid for 2 years. To remain in an "Active Status" volunteers must maintain their training by attending, at minimum, the NERT refresher training. A new ID card will be issued at that time. "Active" volunteers are encouraged to attend at least two advanced training classes and participate in at least two practice drills and exercises. NERT training is the basic qualification for SFFD volunteers in the following categories: San Francisco Fire Department Civilian Volunteer (MRC), Animal Care & Control Disaster Animal Rescue Team (DART) and San Francisco Police Department Auxiliary Law Enforcement Response Team (ALERT).The information contained in this code of conduct applies to NERT volunteers in all capacities.

Service at the Discretion of the Agency

A volunteer is accepted in to service at the discretion of the agency and with the understanding that such service is revocable at will and at the sole discretion of the agency. The volunteer may at any time, for whatever reason, decide to sever the volunteer's relationship with the agency. Notice of such a decision should be communicated as soon as possible to the NERT program coordinator. NERT equipment and ID shall be returned at that time.

Volunteers expressly acknowledge that the permission granted hereunder is entered into at the discretion of the program and is freely revocable by SFFD and in view of such fact volunteers expressly assume the risk of making any expenditure in connection with this permission, even if such expenditures are substantial.

Representing NERT

Volunteers are asked not to contact organizations or individuals on behalf of NERT unless they are given express written directions to do so by the NERT Program Coordinator. Prior to any action or statement which might significantly affect or obligate the SFFD, volunteers should seek prior consultation and approval from the NERT Program Coordinator. These actions may include, but are not limited to, public statements to the press, coalition or lobbying efforts with other organizations, or any agreements involving contractual or other financial obligations. Volunteers are authorized to act as representatives of the agency as specifically indicated within their job descriptions and only to the extent of such written specifications.

Inappropriate use of NERT Membership

Volunteers will not use membership in NERT, or NERT-identified items, to gain favors, access or preferential treatment or to influence others for any purpose other than engaging in authorized emergency activities.

Confidentiality

Volunteers are responsible for maintaining the confidentiality of all proprietary or privileged information to which they are exposed while serving as a volunteer, whether this information involves a single staff, volunteer, client, or other person

or involves overall agency business. Failure to maintain confidentiality may result in termination of the volunteer's relationship with the SFFD or other corrective action.

Screening/Reference Checks
For some assignments, volunteers may be subject to a criminal background check. Volunteers will be screened if they opt in to such positions.

Copyright/Ownership Issues
Material produced by volunteers for the SFFD, including graphics materials, web page designs, narratives, research, compilations, instructional texts, etc., becomes the property of the SFFD upon submission. Volunteers hereby grant SFFD, the City and to City's agents, contractors and assigns, in an unlimited, exclusive and irrevocable license the right to use in whole or in part, screen, post, copy, display and distribute materials produced by volunteers in connection with this volunteer opportunity, in all forms and media as well as for any other City purpose, including but not limited to promotional uses. Volunteers agree to indemnify and hold SFFD and the City harmless from any losses and liabilities (including attorney's fees) for any copyright infringement or any other claims arising out the materials produced by volunteers. Volunteers will receive credit for these contributions.

Contacting Other Volunteers
NERT volunteers are required to interact with each other to coordinate NERT activities. We expect all such communications among volunteers to follow general etiquette guidelines and address each other in a professional and business like manner. The NERT Program Coordinator will not share contact information about a volunteer with another volunteer without a signed Confidentiality of Use form on file. We encourage volunteers to use common sense when communicating with other volunteers.

Inappropriate Communications
If at any point you receive any e-mail that you feel is inappropriate, for any reason and you believe you have received it in conjunction with your involvement with NERT, please forward the email and other details about the communication to the NERT Program Coordinator immediately.

Online Safety
The safety of our volunteers is important to us. To that end, the SFFD will not release a volunteer's phone number, age or other personal information to anyone outside of our organization including advertising requests or other City agencies. We do list volunteers who have agreed to be neighborhood coordinators on a page on our Web site. We are happy to remove any or all of this information for a particular volunteer per written request. Please note that we do not make your e-mail address a "live link" on this page -- this is to prevent spambots from harvesting your address to send you mass unsolicited junk e-mail advertisements.

Ending Your Volunteer Role
You can cease volunteering with NERT at any time. You may stay subscribed to the e-mail lists as long as you wish, regardless of your volunteering status with NERT. If you wish to unsubscribe, please send us an e-mail to let us know that you will no longer be volunteering with us.

Dismissals of Volunteers
Volunteers who do not adhere to the rules and procedures of the agency, ignore the orders of the program coordinator or their designee, or who fail to satisfactorily perform their volunteer assignment are subject to immediate suspension pending termination. Termination will be reviewed and approved by the NERT Advisory Board. Possible grounds for termination may include, but are not limited to, the following: inappropriate communication or email (i.e. non-business like behavior that may be viewed as rude or unprofessional) with the SFFD, other volunteers or the public on behalf of NERT; creating conflict, gross misconduct or insubordination; theft of property or misuse of agency materials; abuse or mistreatment of staff or other volunteers; use of NERT membership to gain access, preferential treatment or favors; failure to abide by agency policies and procedures, and failure to satisfactorily perform assigned duties.

Scope of Volunteer Activity
NERT volunteers will only act within the scope of their training.

AGREEMENT:

- ☐ NERT members are accepted in to service at the discretion of the agency and with the understanding that such service is revocable at will and at the sole discretion of the agency

- ☐ NERT, MRC and SFDC members must be officially deployed and assigned to work in an official capacity by their NERT Program Coordinator or designee in order to ensure compliance with the DSWVP. In the case of a Type I catastrophic event, volunteers should follow the self-activation procedures contained in the student manual and in the Field Operations Guide book.

- ☐ NERT, MRC and SFDC members will only undertake activities that are within their physical capabilities, within the scope of their training, and will not take risks that are likely to cause injury to themselves or others.

- ☐ The use or possession of any alcoholic beverages and non-prescription drugs is strictly prohibited by any member involved in NERT, MRC and SFDC activities. This includes prior to and during response, trainings, exercises, meetings, and special events.

- ☐ Use of, or carrying of, any firearms or other weapons (solely intended to cause injury to others) is strictly prohibited by any member involved in NERT, MRC and SFDC activities. This includes prior to, and during response, trainings, exercises, meetings, and special events.

- ☐ NERT, MRC and SFDC I.D. cards, vests and hard hats will only be worn during official NERT, MRC and SFDC activated activities. In addition, you will not use your membership in NERT, or your NERT-identified items, to gain access, favors or preferential treatment or to influence others for any purpose other than engaging in authorized emergency management activities.

- ☐ Equipment and emergency gear issued to NERT members must be maintained in good working condition, and must be stored in a place that will prevent items from being used by unauthorized persons.

- ☐ Equipment and emergency gear issued to NERT members MUST be worn for all drills and activations or the NERT member may either be placed in an observatory role or asked to leave at the discretion of the supervisor.

- ☐ NERT, MRC and SFDC members will not use their membership in this program or their identification cards to gain favors, preferential treatment, or to influence others for any purpose other than emergency preparedness.

- ☐ NERT, MRC and SFDC members must not receive compensation for any services rendered during their time of activation.

- ☐ NERT, MRC and SFDC members shall avoid conflict of interest situations and refrain from actions that may be perceived as being in conflict with the interests of the SFFD, NERT and any organization in which the individual has a personal, business, or financial interest. Volunteers should reveal any potential or actual conflicts of interest as they arise.

- ☐ NERT, MRC and SFDC members will not operate any vehicles or machinery not owned by them, unless assigned to do so by SFFD personnel.

- ☐ NERT, MRC and SFDC members will not represent themselves in a capacity that exceeds their status in their NERT, MRC and SFDC Program.

☐ NERT, MRC and SFDC members shall treat all individuals with a sense of dignity, respect, and worth. Make a personal commitment to be nonjudgmental about cultural differences, living conditions and the life-style of each person with whom they work.

☐ NERT, MRC and SFDC members will treat each other with courtesy, sensitivity, tact, consideration, and humility and respect each other in all activities and communication.

☐ NERT, MRC and SFDC members shall avoid profane and abusive language and disruptive behavior that is dangerous to self and others.

☐ The program coordinator is the NERT, MRC and SFDC volunteer commander. Programmatic and procedural decisions and authorization shall be determined by the program coordinator. Volunteers will follow the direction of the program coordinator or their designee. During NERT activation, volunteers shall follow the chain of command procedures contained in the student manual and in the Field Operations Guide book.

☐ NERT, MRC and SFDC members will not preach to anyone or pressure anyone to accept any particular political, cultural, or religious beliefs

☐ Reported negative behaviors may result in termination of your volunteer position in NERT, MRC and SFDC

In return, you can expect to:

- Be treated with respect and courtesy.
- Be provided with a safe atmosphere in which to volunteer.
- Be provided with necessary training opportunities.
- Be appreciated for your contributions to the NERT organization.

In an emergency, the final responsibility for health and safety belongs to the individuals and their families. Neither NERT/MRC/SFDC nor the San Francisco Fire Department can guarantee that the plans outlined in the NERT response guidelines will be executed as written. The essence of disaster is its unpredictability and we cannot promise that we will be able to provide the level of help that we would wish. Nevertheless, in disaster it is quite common for people to come together for help and comfort. The purpose of NERT is to facilitate that coming together, to guide the planning process and provide information. The benefit to all of us in participating and contributing to the organizing effort before disaster strikes is that, when the disaster does happen it will help San Francisco return to normal as quickly as possible.

I, _____, do hereby certify that I have
PRINT CLEARLY
read, understand and agree to comply with the code as it is set forth. I understand that failure on my part to comply with any of the rules or the volunteer agreement could result in the termination of my volunteer service on the Neighborhood Emergency Response Team, MRC and or the SFDC. I further understand that if I am removed from service, it is my responsibility to return all issued equipment and materials that I have received from the NERT program. If I fail to return the equipment or materials, I agree to pay the cost to replace any items not returned.

_____ _____ _____
Member Signature NERT Program Manager/Designee (witness) DATE

In case of emergency, contact: (____) _____
Phone number relation

NERT Staging Areas

*This directory is for the **private use of NERT members only**. Any other use is strictly prohibited. After a disaster occurs, report to your neighborhood staging area, not a Fire Station. The NEIGHBORHOOD COMMAND POST is the NERT command for yourneighborhood. The BATTALION STATION is the SFFD command for your NERT team. NERT teams establish a connection with Battalion via Ham Radio or runner. You will find contact for your neighborhood coordinator at https://sf-fire.org/neighborhood-teams. NO coordinator? Call 415-970-2022 to volunteer*

Alamo Square, BATTALION 2
Alamo Square Tennis Courts

Anza Vista, BATTALION 7
See North Panhandle

Balboa Ter./Mt Davidson Manor, BATT 9
Aptos Middle School Field, Aptos @ Ocean

Bayview/Hunters Point, BATTALION 10
M.L.King, Jr. Pool, 3rd @ Carroll

Bernal Heights north, BATTALION 6
Precita Park, Precita @ Folsom

Bernal Heights south, BATTALION 6
Holly Park, Elsie @ Holly Park Circle

Castro, BATTALION 6/2
Eureka Valley Playground,
Collingwood @ 18th

Cathedral Hill/Japantown, BATTALION 2

Chinatown, BATTALION 1
Portsmouth Square

Civic Center, BATTALION 2
Site to be determined

Cole Valley/Ashbury & Parnassus Hghts, BATTALION 5
Grattan Playground

Cow Hollow, BATTALION 4
See Marina

Diamond Heights, BATTALION 6
Christopher Recreation Area

Duboce Triangle, BATTALION 2
Duboce Park, Duboce@Steiner

Eureka Valley, BATTALION 6/2
See Castro

Excelsior, BATTALION 9
Crocker Amazon Park, Moscow@ France

Fisherman's Wharf/N. Waterfront, BATTALION 1
FW Community Benefit District,
Aquatic park

Financial District North, BATTALION 1
Sydney G. Walton Sq., Front @
Jackson

Forest Hill Ext/ Forest Hill, BATT 8
Triangle Park, Laguna Honda/Balceta

Glen Park, BATTALION 6
Glen Park Rec Center

Haight/Ashbury, BATTALION 5
Panhandle, Masonic @ Oak

Hayes Valley, BATTALION 2
Patricia's Green, Octavia@Hayes

Ingleside, BATTALION 9
St. Emydius lot, De Montfort @ Jules

Ingleside Heights, BATTALION 9
Parking Lot, 640 Palmetto

Ingleside Terrace, BATTALION 9
Junipero Serra Blvd.@Mercedes

Inner Richmond, BATTALION 7
Mt. Lake Park, Lake@9th Ave.

Inner Sunset, BATTALION 8
Golden Gate Park, 7th Ave @ Lincoln

Lakeside, BATTALION 9 (see Stonestown)
Serra Playground, Stonecrest Drive

Laurel Heights, BATTALION 4 see lower Pac Heights
Laurel Hill Playground, Euclid/Collins

Lower Pac Heights, BATTALION 4
Hamilton Field Post St @ Scott St

Lone Mountain, BATTALION 7
Contact North Panhandle
Ewing Terrace

Marina, BATTALION 4
Moscone Playground,
Chestnut @ Buchanan

Midtown Terrace/Clarendon Corridor, Forest Knolls BATTALION 8
Playground Olympia @ Clarendon

Mission, BATTALION 6
Niños Unidos, 23rd St @ Treat

Mission Bay
See South Beach

Mission Dolores, BATTALION 6
See Mission
Dolores Park stairs, 19th/Dolores

Mission Terrace/Outer Mission, BATTALION 9
Balboa Park, San Jose @ Ocean

Mt. Davidson/Miraloma, BATTALION 9
Miraloma Playground, Omar @
Sequoia

Nob Hill, BATTALION 1
Huntington Sq Park, California @
Taylor

Noe Valley, BATTALION 6
Noe Courts, Douglass @ 24th

North Beach, BATTALION 1
N.B Playgrnd Powell @ Lombard

North of Panhandle, BATTALION 7
Panhandle, Oak @ Masonic

Oceanview, BATTALION 9
See Ingleside Heights

Outer /Central Richmond, BATT 7
Washington High School, 31st/Geary

Pacific Heights, BATTALION 4
See Lower Pacific Heights
Lafayette Park, Gough @ Sacramento

Portola BATTALION 10
Palega Park, Felton @ Hamilton

Potrero Hill BATTALION 10
Daniel Webster, Missouri @ 20th

Presidio, BATTALION 4
572 Ruger St near Lombard

P***resido Heights, BATTALION 4***
Presidio Heights
Playground, Clay@Laurel

Rincon Hill
See South Beach

Russian Hill, BATTALION 1
Helen Wills Playground

South Beach, BATTALION 3
South Park between 2nd and 3rd

South of Market, BATTALION 3
Moscone - Yerba Buena Gardens

St Francis Woods, BATTALION 9
Terrace Green, Santa Clara @ Terrace

Stonestown, Park Merced, Lakeshore, BATT 9
TBD

Sunnyside, BATTALION 9
Sunnyside Recreation Center

Sunset/Parkside, BATTALION 8
Ortega Library, 39th @ Ortega

Tenderloin, North of Market BATT 2
Boeddeker Park, Jones/Eddy

Telegraph Hill, BATTALION 1
N. Beach Playground, Powell @ Lombard

Treasure Island, BATTALION 3
Adjacent to Fire Station 48, 800 Avenue I at 10th Street

Twin Peaks, BATTALION 8
See Midtown Terrace

Visitacion Valley, BATTALION 9
Community Center, 50 Raymond

West Portal/Inner Parkside, BATT 8
Larson Park, 19th Ave @ Ulloa

Western Addition, BATTALION 2
Margaret S. Haywood Park

Westwood Park, BATTALION 9
Montecito Green, Montecito @ Plymouth

UNIVERSITY PARTNERS:

City College of San Francisco, BATT.9
TBD

San Francisco State (SFSU) BATT 8
Michael Beatty, mbeatty@sfsu.edu

UCSF Campus NERT teams,
Parnassus, BATTALION 7
Mission Bay, BATTALION 3
Laurel Heights, BATTALION 4
Mission Campus, BATTALION 6
eap@police.ucsf.edu

USF Campus NERT (DERTS), Batt 7
John Troccoe, jatroccoe@usfca.com

Battalion & Radio Frequency Information

Ham radio operators: Frequencies are subject to change. Contact the NERT office at 415-970-2022 for any questions.

BATTALION	Address	Simplex	Team TAC ch.
BATTALION 1	(STA 2) 1340 Powell St.	146.415 tone 100	147.495 tone 100
BATTALION 2	(STA 36) 109 Oak St.	147.510 tone 100	147.570 tone 100
BATTALION 3	(STA 8) 36 Bluxome St.	146.460 tone 100	146.475 tone 100
BATTALION 4	(STA 38) 2150 California St.	146.550 tone 100	146.430 tone 100
BATTALION 5	(STA 21) 1443 Grove St.	147.405 tone 100*	147.585 tone 100*
BATTALION 6	(STA 11) 3880-26th St.	147.435 tone 100	147.555 tone 100
BATTALION 7	(STA 31) 441-12th Ave.	147.540 tone 100	146.445 tone 100
BATTALION 8	(STA 40) 2155-18th Ave.	147.450 tone 100	147.480 tone 100
BATTALION 9	(STA 15) 1000 Ocean Ave.	146.505 tone 100	147.585 tone 85.4
BATTALION 10	(STA 9) 2245 Jerrold	146.595 tone 100	147.525 tone 100
BATTALION 11	The Presidio (BATTALION 4)	147.435 tone 85.4	146.490 tone 100
TREASURE ISLAND		147.465 tone 100	146.535 tone 100

* Low Power Only

Nert Volunteer Involvement

NERT depends on its graduates before as well as after a disaster! Please help your neighborhood team. Return completed form to the Class Instructor/volunteer coordinator in attendance or mail to the NERT Program Office. (Address on back)

PLEASE PRINT CLEARLY

Name_____ NERT class graduation date_____

Address_____ SF Neighborhood_____

Email_____ Cell Phone #_____

Check all that apply:

- ❑ I want to **join** a neighborhood team, and am interested in:
  - ❑ being part of the team leadership (Coordinator, planning group member)
  - ❑ being a block captain
  - ❑ calling team members and NERT graduates in my neighborhood
  - ❑ attending team meetings and practices
  - ❑ hosting team meetings and practices
  - ❑ learning ham radio operation
  - ❑ Teaching my neighbors about preparedness
  - ❑ Staffing a table at events to share NERT and preparedness
- ❑ There is no team in my area. I want to **start or help organize** a team in my neighborhood
- ❑ I have skills, training, or expertise that might be helpful to NERT. (These do not have to be disaster related.)
  - ❑ _____
  - ❑ _____
  - ❑ _____

How did you hear about NERT_____:

Please turn this form in at the end of NERT training or mail it at your convenience. Fold along the dotted lines, tape shut and adhere the proper postage.

Place Stamp Here

San Francisco Fire Department, N.E.R.T. Training
2310 Folsom Street
San Francisco, CA 94110

SAN FRANCISCO FIRE DEPARTMENT
NEIGHBORHOOD EMERGENCY RESPONSE TEAM TRAINING

Course Evaluation

Class Location: _____ ***Date of Training:*** _____

To assist the San Francisco Fire Department in the continuing review of this course, please complete after each class. Please submit this completed form after the 6th session. Score from 0 to 5, five being the highest score. Use the back, if you have additional comments. Thanks for your input.

CLASS CONTENT		INSTRUCTOR PRESENTATION	SPECIFIC COMMENTS
SESSION #1 **Earthquake Awareness, Personal Preparedness, Mitigation**	**0 1 2 3 4 5**	**0 1 2 3 4 5**	
SESSION #2 **Hazards, Utilities, Firefighting**	**0 1 2 3 4 5**	**0 1 2 3 4 5**	
SESSION #3 **Disaster Medicine** **Triage**	**0 1 2 3 4 5**	**0 1 2 3 4 5**	
SESSION #4 **Lifting Heavy Objects, Search & Rescue**	**0 1 2 3 4 5**	**0 1 2 3 4 5**	
SESSION #5 **Team Organization, Terrorism**	**0 1 2 3 4 5**	**0 1 2 3 4 5**	
SESSION #6 **Final Exam, Hands-On Training**	**0 1 2 3 4 5**	**0 1 2 3 4 5**	

San Francisco Fire Department N.E.R.T. Training 2310 Folsom Street – San Francisco, CA 94110-2011
(415) 970-2022 Fax: (415) 970-2020 www.sfgov.org/sffdnert e-mail: sffdnert@sfgov.org

Please turn this form in at the end of NERT training or mail it at your convenience. Fold along the dotted lines, tape shut and adhere the proper postage.

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San Francisco Fire Department, N.E.R.T. Training
2310 Folsom Street
San Francisco, CA 94110

Notes Page

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