This manual is designed to provide you, the residents of Marin County, with the information necessary to prepare you for your role as a Disaster Service Worker and to assist you in getting yourself and your neighborhood prepared for the inevitable disaster.

As a resident, you have a significant role in Marin County’s emergency response organization and your response to disasters is an important part of our collective ability to prepare for, respond to, and recover from a variety of emergencies and disasters. Your actions influence others within the community and directly impact our overall ability to protect lives, property, and the environment.

Your primary role during a disaster is one of a community leader and responder when our public safety officials are overwhelmed and unable to meet the demands of the emergency as quickly as desired. You know the needs of your community and you have already established effective channels of communication within your neighborhoods.

As with all of our first responders, your ability to support emergency response efforts within your neighborhood will depend directly upon your preparedness at home and at work. Please take the time to familiarize yourself with this manual.

Publish date: January 2011
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 UNIT 1
INTRODUCTION

Unit Objectives

Understand the importance of personal emergency preparedness and available resources for preparedness information.

Know your role as a CERT member and Disaster Service Worker and how you are protected as a volunteer.

Understand important psychological implications of working as a CERT member.
INTRODUCTION

You Can't Predict – But You Can Prepare

We have all seen the effects of disasters on others; we may have even been affected ourselves. We have seen our neighbors homes go up in flames and our local businesses flooded. We all have watched as people have been stranded on rooftops, without food and water, waiting for assistance. We have seen the destruction to our entire social system through major earthquakes. We have watched as people have waited helplessly for assistance from others during disasters. Knowing and accepting all this, it is important we take the steps now to make ourselves, our families, and our communities prepared.

The foremost reason for CERT training is to give people the decision-making and physical skills needed to offer immediate assistance to family members, neighbors, and associates. While people will respond to others in need without the training, the goal of the CERT program is to help them do so effectively and efficiently without placing themselves in unnecessary danger.

The fact that no one can predict what might be encountered during and after a catastrophic event is the reason for the wide spectrum of training and preparedness provided in this program. Unlike a first aid class or a wilderness survival course that covers specific points of care and preparation, CERT training will, in fact, cover many of these same points. Additionally, it will introduce further skills that typically are not included in most training courses. The course wraps up with a simulated realistic disaster scenario that will allow the participant to use the skills that they have learned and apply basic hands-on techniques to respond to and manage emergency situations.

Students will receive the following training during a CERT basic course:

- Unit 1: Introduction and Disaster Service Workers, Disaster Psychology
- Unit 2: CERT Organization
- Unit 3: Disaster Medical Operations
- Unit 4: Fire Safety & Suppression
- Unit 5: Light Search & Rescue
- Unit 6: Disaster Simulation & Beyond CERT Training

CERT members will be:

1. **Prepared** to be more self-sufficient following a disaster.
2. **Able** to provide emergency assistance to their family, colleagues and neighbors.
3. **Trained** to work as a team in their neighborhood in the event of a major disaster.
4. **Empowered** to be a survivor and not become a victim.

You can make a difference by using CERT training to save lives, protect property & the environment. With training and practice, and by working as a team, you will be able to *do the greatest good for the greatest number of people* after a disaster.
**GENERAL EMERGENCY PREPAREDNESS**

**Take Steps to Get Ready Before a Major Disaster**

Marin County is exposed to a wide variety of hazards, both natural and man-made. Earthquakes, fires, severe storms, are just some of the potential emergencies we may encounter. In a major disaster, it might be several days before vital services are restored and individuals should be prepared to be on their own for up to 7 days.

Imagine that you have no electricity, no gas, no water and no telephone service. Imagine that all the businesses are closed and you are without any kind of emergency services.

- What will you do until help arrives?
- Do you have enough food and water on hand to support yourself? Your family?
- What about the pets?
- Do you know where you will meet with your family if you have to leave your home?
- Do you know how and when to turn off your gas/propane, water or electricity?
- Do your children know the plan?

These are just some of the questions we want you to have the answers to...before the event.

There are some easy steps you can take to get yourself, your home, your family and loved ones prepared. As part of the appendices in your student manual you have a copy of the Get Ready Marin! Individual and Household Disaster Preparedness manual. Within it there are sample emergency supply lists, diagrams of how to create an evacuation plan, information about how – and when – to secure your utilities, steps to take to put together your family emergency plan, and more. Information on developing a personal emergency preparedness plan can be found on a variety of local, state, and national organization websites as well as in the local telephone directories.

Unless you are prepared personally you will not be in a position to help your community as a CERT team member. Please take the time now to become better prepared and help us to build a more resilient community. Together we can be a community of survivors and not victims.
CERT members in Marin County performing within the duties of the Marin County CERT program are generally protected by “Good Samaritan” laws that protect people who provide emergency care in a “prudent and reasonable manner.” In a disaster, CERT members are also protected by the Volunteer Protection Act of 1997, a Federal law that protects volunteers from liability as they are acting in accordance with the training they have received.

The California Disaster Service Worker Program

As a CERT member you are a Disaster Service Worker. Disaster Service Workers are volunteers who are registered with their city or town that they reside in, and who have chosen to volunteer their time and service to assist in providing limited emergency service responsibilities. The California Disaster Service Worker (DSW) Program provides workers' compensation insurance coverage in the event a volunteer is injured while performing assigned disaster duties. The DSW program was created to ensure volunteers who contribute their services to protect health & safety and preserve lives & property are protected from financial loss resulting from injury, as well as providing them limited immunity from liability in the course of their disaster service duties.

For Marin County CERT members to be covered under the DSW program, they must:

- Be officially registered with their local Disaster Council
- Take an Oath of Loyalty, as required by California law
- Not receive any pay, monetary or otherwise, for the service being provided

Marin County CERT members are registered with their local Disaster Council and provided the Oath of Loyalty at the beginning of their CERT training class. The registration form is required documentation when filing claims for worker's compensation coverage.

Filing Claims

Registered DSW volunteers may file a claim for injuries sustained while engaged in the following activities:

- Performing disaster service, including travel to and from the incident site, when called to duty during an emergency or disaster, or while participating in a search and rescue operation.
- Participating in an authorized and documented, planned disaster training activity or disaster exercise. Coverage for these activities does not include travel to and from the training site.

Filing a Claim

If a CERT member is injured while training or operating under emergency conditions and needs to file a claim, they should contact their local CERT supervising agency.
During a disaster, CERT members will see and hear things that will be extremely unpleasant. From death and injury to damage and destruction, members will experience emotional and physical trauma in themselves as well as in disaster victims.

**Disaster Effects**

Traumatic stress as a result of a disaster may affect:

- **Cognitive functioning.** Those who have suffered traumatic stress may act irrationally, have difficulty making decisions; or may act in ways that are out of character for them normally. They may have difficulty sharing or retrieving memories.
- **Physical health.** Traumatic stress can cause a range of physical symptoms from exhaustion to heat problems.
- **Interpersonal relationships.** Those who survive traumatic stress may undergo temporary or long-term personality changes that make interpersonal relationships difficult.

Following are some psychological and physiological responses that may be observed in rescuers after a disaster:

**Psychological symptoms may include:**

- 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

**Physiological symptoms may include:**

- Loss of appetite
- Headaches or chest pain
- Diarrhea, stomach pain, or nausea
- Hyperactivity
- Increase in alcohol or drug consumption
- Nightmares
- The inability to sleep
- Fatigue or low energy

**Vicarious Trauma**

The process of change in the rescuer resulting from empathic engagement with survivors. It is an “occupational hazard” for CERT members.
A person’s personal reaction may vary because of:

- 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 victim perceives the event to be to him or her personally, the more intense will be his or her stress reaction.
- 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.”

**Reducing Stress**

Below are some steps that CERT team leaders can take to reduce the stress on rescue workers before, during, and after an incident:

- Provide pre-disaster stress management training to all CERT personnel.
- Brief CERT personnel 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 CERT is a team. Sharing the workload and emotional load can help defuse pent-up emotions.
- Encourage rescuers to rest and re-group 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.
- Rotate teams for breaks or new duties (from high-stress to low-stress jobs). Team members can talk with each other about their experiences. This is very important for their psychological health.
- Phase out workers gradually from high- to low-stress areas of the incident.
- Conduct a brief discussion (defusing) with workers after the shift, in which workers describe what they encountered and express their feelings about it.
- 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.

CERT leaders may invite a mental health professional trained in Critical Incident Stress Management (CISM) to conduct a Critical Incident Stress Debriefing (CISD). CISD is a formal group process held between 1 to 3 days after the event and is designed to help emergency services personnel and volunteers cope with a traumatic event.
Spend some time thinking about other ways to reduce stress personally. Only you know what reduces stress within yourself and that expending the effort required to find personal stress reducers is worthwhile before an incident occurs.

CERT members can take the following preventive steps in their everyday lives:

- Get enough sleep
- Exercise
- Eat a balanced diet
- Balance work, play, and rest
- Allow themselves to receive as well as give. They should remember that their identity is broader than that of a helper
- Connect with others
- Use spiritual resources

Experienced rescue workers find these steps helpful in controlling their stress levels. In some cases it might be necessary to seek help from mental health professionals.

**On-Scene Psychological Intervention**

The goal of on-scene psychological intervention on the part of CERT members is to stabilize the incident scene by stabilizing individuals. Following are some suggested ways of doing this:

- Assess the survivors for injury and shock. Address any medical needs first. Observe them to determine their level of responsiveness and whether they pose a danger to themselves or to others.
- Get uninjured people involved in helping. Focused activity helps to move people beyond shock, so give them constructive jobs to do, such as running for supplies. This strategy is especially effective for survivors who are being disruptive.

Provide support by:

- Listening to people talk about their feelings and their physical needs. Victims often need to talk about what they’ve been through and they want someone to listen to them.
- Empathizing. Show by your responses that you hear their concerns. Victims want to know that someone else shares their feelings of pain and grief.
- Help survivors connect to natural support systems, such as family, friends, or clergy.

When providing support, avoid saying the following phrases. On the surface, these phrases are meant to comfort the survivors, but they do not show an understanding of the person’s feelings.

- “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 / 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 ok to cry.
- “It’s God’s will.” Giving religious meaning to an event to a person you do not know may insult or anger the person.
- “It could be worse” or “At least you still have …” It is up to the individual to decide whether things could be worse.

These types of responses could elicit a strong negative response or distance the survivor from you. Remember, it is ok to apologize if the survivor reacts negatively to something that you said.
UNIT 2
CERT ORGANIZATION

Unit Objectives

Learn the origins and history of CERT and how CERT is applied in Marin County.

Understand the Incident Command System, how it works, and the basic elements of team organization and communications.

Understand the process for size-up and how it is applied throughout CERT operations.
1985
In February of 1985, the idea to train volunteers from the community to assist emergency service personnel during large natural disasters began. A group of Los Angeles City officials went to Japan to study its extensive earthquake preparedness plans. The group encountered an extremely homogenous society that had taken extensive steps to train entire neighborhoods in one aspect of alleviating the potential devastation that would follow a major earthquake. These single-function neighborhood teams were trained in fire suppression, light search and rescue operations, first aid, and evacuation.

In September of 1985, a Los Angeles City investigation team was sent to Mexico City following an earthquake there that registered a magnitude 8.1 on the Richter scale and killed more than 10,000 people and injured more than 30,000. Mexico City had no training program for citizens prior to the disaster. However, large groups of volunteers organized themselves and performed light search and rescue operations. Volunteers are credited with more than 800 successful rescues; unfortunately, more than 100 of these untrained volunteers died during the 15-day rescue operation.

The lessons learned in Mexico City strongly indicated that a plan to train volunteers to help themselves and others, and become an adjunct to government response, was needed as an essential part of overall preparedness, survival, and recovery.

1986
The City of Los Angeles Fire Department developed a pilot program to train a group of leaders in a neighborhood watch organization. A concept developed involving multi-functional volunteer response teams with the ability to perform basic fire suppression, light search and rescue, and first aid. This first team of 30 people completed training in early 1986 and proved that the concept was viable through various drills, demonstrations, and exercises. Expansion of the program, however, was not feasible due to limited City resources, until an event occurred in 1987 that impacted the entire area.

1987
On October 1, 1987, the Whittier Narrows earthquake vividly underscored the threat of an area-wide major disaster, and demonstrated the need to expedite the training of civilians to prepare for earthquakes and other emergencies. Following the Whittier Narrows earthquake, the City of Los Angeles took an aggressive role in protecting the citizens of Los Angeles by creating the Disaster Preparedness Division (now the Disaster Preparedness Section) within the Los Angeles Fire Department. Their objectives included:

- Educate and train the public and government sectors in disaster preparedness.
- Research, evaluate, and disseminate disaster information.
- Develop, train, and maintain a network of Community Emergency Response Teams (CERTs).

1989
The Loma Prieta earthquake strikes the Bay Area and serves as an impetus for the establishment of CERT training in Marin County.
1993
The Federal Emergency Management Agency (FEMA) decided to make the concept and program available to communities nationwide. The Emergency Management Institute (EMI), in cooperation with the LAFD, expanded the CERT materials to make them applicable to all hazards.

2002
In January 2002, CERT became part of the Citizen Corps, a unifying structure to link a variety of related volunteer activities to expand a community's resources for crime prevention and emergency response.

2004
As of January 2004, 50 states, three territories and six foreign countries are using the CERT training.
CERT IN MARIN COUNTY

In the late 1990s, Marin County recognized the importance of training community members to be self-sufficient during a disaster and began offering the CERT program. Since then, the program has trained thousands of residents in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following / during a disaster.

Fire Departments, Office’s of Emergency Services, local disaster councils, and a team of tremendously dedicated volunteers, provide CERT training to Marin County residents throughout the year. Once residents are trained in CERT, they are encouraged to participate in organizing their neighborhoods and fostering a community approach to disaster operations.

Since the mid-1990s Marin has implemented CERT training in the county in a variety of fashions, ultimately leading to the development of six independent CERT programs offered throughout the county. Recognizing the challenges of running six separate CERT programs and working with limited resources, each of the respective CERT programs committed to work in a collective, multi-jurisdictional Marin County CERT program beginning in 2011. 2011 marks the first year of implementation of the new and enhanced countywide Marin County CERT program.

Five training zones have been created within the Marin County CERT program. These training zones reflect geographic regions within Marin County in which residents can receive CERT basic training. The training zones are:

- Southern Marin (Sausalito, Mill Valley, Tiburon, Belvedere, Marin City, Tam Valley, Strawberry)
- Central Marin (Corte Madera, Larkspur, Fairfax, San Anselmo, Ross, Kentfield, Sleepy Hollow)
- San Rafael, Marinwood, Santa Venetia
- Novato
- West Marin (all unincorporated areas of West Marin)
CERT Objectives
1. Identify the scope of the incident. **What is the problem?**
2. Determine an overall strategy. **What can we do, and how will we do it?**
3. Deploy resources. **Who is going to do what, and with what?**

Because the CERT organizational structure is flexible, it can change depending on the need to achieve these objectives. The organization defines functions that need to be filled or addressed; they do not necessarily represent specific assignments. CERT members may find themselves responsible for multiple functions and/or may get reassigned depending on the needs of the situation.

CERT Organization by Way of ICS
The basic structure of how a CERT team is organized falls within the Incident Command System (ICS). ICS originated and has evolved from the obvious need for a structured and organized approach to the complexities and challenges of managing major emergency and disaster situations.

This “organization” was developed as a need for a new approach to organize a lot of people and resources at an incident. The goal was to provide a basic structure for a coordinated response with some clear lines of authority. As we know from everyday life, with a little planning, organization and structure, things may often work smoother and operate more efficiently.

ICS is common and effective way of organizing resources during the event of a disaster, no matter how big or small. Most emergency response agencies operate at an incident within this structure. As CERT is born out of a federal program geared towards citizen preparedness at the time of an event, CERT strives to follow this basic structure to organize its response teams as well.

Breaking Down ICS to Make it All Work
The goal is to have some organization, a common way of organizing things so as CERT members you can help people and do the greatest good for the greatest number.

- **I:** You have an incident. This can be a simple event, something planned or unplanned, big or small.
- **C:** You need to have one overall leader, this is the command.
- **S:** Then you have the way that people are organized and structured into teams, by function, this is the system.

With this way of organizing people, we can take those who want to help, assign them a role, and everyone can work as a team. These individuals, coming together as a team can:

- Put out small fires
- Work to search for and rescue people after a building collapses
- Treat those who might be injured
- And other things that we will learn that may fall within the scope of practice as a CERT member
TEAM ORGANIZATION

How a CERT Team is Organized

With this organization you have some positions to fill. Below are the team leader titles and what each is responsible for under that position.

“Team Leader” (Incident Commander)

The team leader:

- Is someone with a take charge attitude that can encourage others to do the greatest amount of good for the greatest number of people. Really, we’re all team leaders and share that common goal, but you have to have one person in charge to help get organized.
- Has the big picture of how things should be organized based on what needs to be accomplished.
- Would be the one interfacing with the first responders when they arrive on scene, so there is one authority figure communicating all of what has happened.
  - What is going on
  - Victims found and treated
  - Victims trapped
  - Any fatalities in the area
  - Fires extinguished

This is a big job and the team leader may want someone to help write notes down and keep track of what is going on with the other teams; this person would be called a scribe.

“Plans It” Team (Planning & Intelligence)

This person and / or team are your quick thinkers.

- This person will think about what the team will do now and in the future.
- Works closely with the Team Leader and the “Does It” team to come up with an overall action plan.
- Keeps thinking about what is going on and evaluating the situation – since you know scene size-up never stops.
- Plans for any expected and unexpected probabilities like aftershocks, additional personnel, weather conditions, work shifts, etc.
- Keeps the “Does It” team, “Gets It” team, and Team Leader updated with current action plans and information.
“Does It” Team (Operations)
The “Does It” team is responsible for carrying out the fire suppression, search & rescue, and disaster medical operations. As these operations become larger, an individual will be appointed by the ‘Does It’ team leader to oversee all of those operations within those functions.

- Fire Safety and Suppression Team.
  - The fire team works to secure utilities if necessary and suppress small fires.

- Search and Rescue Team (SAR).
  - People on the SAR team work to search for trapped victims.
  - Upon searching for and finding people in structures, SAR performs the initial triage before the medical team cares for the victims.
  - SAR rescues the victims from the structure, and transfers care to the medical team.

- Medical Team.
  - The medical team performs basic first aid and disaster medicine. They also set up a triage area, care for patients, manage fatalities, and continue to reassess the patients in the triage / medical treatment area.

“Gets It” Team (Logistics)
This “Team” is responsible for all the resources to be gathered and used during the incident. A good “Gets It” team leader is someone who is organized and likes to organize things. Having resources like volunteers, and supplies like bandages, special equipment like fire extinguishers and chainsaws, are going to come in handy during a disaster. If someone needs something, this is the “go to person”.

CERT Organization

![CERT Organization Diagram]

- Team Leader (Incident Commander)
- “Does It” (Operations)
  - Fire Team
  - Search & Rescue Team
  - Disaster Medical Team
- “Plans It” (Planning)
- “Gets It” (Logistics)
  - Volunteer Management
  - Resources
  - Communications
As the incident grows and the size and complexities of the various operations increase, it is important to remember to maintain an appropriate span of control in order to remain effective. A recommended ratio for effectively managing personnel or tasks is 5 to 1. That is, 1 person should not be supervising more than 5 other people or assignments. Assign additional people as needed to maintain a proper span of control.
CERT Mobilization

After a disaster incident has taken place, CERT organization proceeds in the following manner:

1. CERT members take care of themselves, their families, and their neighbors.
2. CERT members proceed to the staging area with their disaster supplies. Along the way, they make damage assessments that would be helpful for the CERT Team Leader’s decision making.
3. The first CERT member at the staging area becomes the CERT Team Leader for the incident. As other CERT members arrive, the CERT Team Leader makes team assignments for Operations, Planning, and Logistics.
4. As additional members arrive to assist, Logistics will assign them a role as needed. Assignments will be made based on their capabilities and the requirements of the incident.
5. As the damage from the disaster is realized, the CERT Leader must prioritize actions and work with the functional team leaders to accomplish the CERT mission.

Remember that the incident priorities and objectives will be changing rapidly. The CERT Leader must stay in close contact with the Logistics (“Gets It”) Team Leader and other functional team leaders to ensure that CERT members do not overextend their resources, supplies, or themselves.
Size-up Process

Scene Safety and Scene Size-up

Size-up is a continual data gathering process. No matter where you are or what you are about to do (suppress a small fire, rescue someone trapped in a home, or render some medical aid) approach the size-up of any situation with these seven steps in mind.

1. Gather facts.
   - Ask yourself what happened? What’s going on?
   - Are there hazards that I need to be aware of?
     - Downed wires? Gas leaks? Hazardous materials?
   - How many injured people are there?
   - What special tools or equipment may I need?

2. Assess the scene.
   - Is the scene is deemed safe? (as safe as can be in the event of a disaster)

3. Identify your resources.
   - How many people do you have to work with?
   - Do you have the personal protective equipment that you need to be safe?
   - Do you have enough supplies to do what it is that needs to be done?
     - Do you have fire extinguishers? How many?
     - Do you have medical supplies? Tarps? Materials for splints?
     - Do you have other people that can help you?

4. Establish your priorities.
   - What needs to be done first? Second? Third?
     - Are there fires to be extinguished?
     - Are there trapped people that need to be rescued?
     - Do people need medical aid?

5. Develop a plan.
   - Assign people to do what needs to be done, first, second and third. Remember, the plan may change and you may need to multi-task.

6. Conduct operations.
   - Suppress small fires
   - Secure utilities, if needed
   - Provide medial treatment and aid
   - Perform search and rescue operations

7. Evaluate your progress.
   - Closely monitor your operations.
     - Is situation improving or getting worse?
     - Is the anything else you can do?
     - Are team members holding up ok? Do you need more resources?

Size-up will be explained again in each unit as it applies to fire suppression, disaster medicine and light search and rescue. Size-up is very important as your data gathering process and applicable to all CERT operations.
COMMUNICATIONS

A key part of team organization and team member accountability is communications.

It is important to define a communication infrastructure for emergency and non-emergency situations. Identify how you will communicate within your team and with others during the incident. Will you communicate with runners? Family-talk radios? Amateur radio operators?

Also consider how you will communicate the status of your neighborhood to government officials when they arrive? Do you know where to communicate to?

All parts of communication are important and necessary to figure out. Talk to your local jurisdiction after you complete your CERT basic training and find out more about emergency communications plans and trainings.

Forms
There are developed CERT response and operations forms that aid in effective communications. Using forms helps to identify & track resources, manage patients, track damage assessment, among other things. Template forms with samples have been provided to you in the appendices of this manual.
UNIT 3
DISASTER
MEDICAL OPERATIONS

Unit Objectives

Understand the principles and application of triage.

Learn injuries commonly seen in a disaster environment and how to treat those injuries.

Learn the techniques to safely transport victims to medical treatment areas.
Disaster medicine is a very comprehensive subject. The goal of the disaster medicine module is to teach CERT members how to do the most good for the most people by quickly being able to identify those you can help with basic medical care. No matter what the injury or the severity of the injury, your scope of practice will be to treat all injured victims by:

- Making sure the victim has an open airway
- Taking measures to control excessive bleeding through dressing and bandaging
- Treating victims to prevent shock

In this unit you will learn:

- What injuries are commonly seen in disaster situations
- How to find those injuries
- How to treat injuries within the CERT scope of practice

What is presented in this class is not a definitive lesson. It is recommended that every CERT member reinforce the material presented in this lesson through additional first aid training.

Medical care and first aid in a disaster are different than the usual emergencies because the professional resources may not be available in as timely manner as hoped for, if at all. CERT team members will often be the ones providing the first aid and patient care and feeling as overwhelmed as the professionals. It is almost certain there will be more victims than rescuers, so rescuers have to be as effective as possible. Fortunately, many lives can be saved by employing a few simple techniques which we will review in class and in the coming pages.

**Rescuer Safety**

Every CERT rescuer should take protective measures with personal protection equipment (PPE). With the use of latex gloves, protective eyewear, and a face mask, we are taking simple measures and protecting ourselves from the blood and bodily fluids that may be present with the victims we are helping.

Keep in mind that seeing family members, members of the community, your neighbors, with injuries may be challenging. Make sure to take care of yourself as well and be aware of how this may effect your psychologically.

**Biohazards in Disaster Medicine**

Make effort to contain soiled and used bandages so as not to create a dangerous situation that could cause infection and compromise the health and safety of yourself and other rescuers. Set up an area where used bandages, gloves, face masks can be contained and disposed of safely.

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**Don’t Forget Size-Up**

1. Gather facts
2. Assess the scene
3. Identify your resources
4. Establish your priorities
5. Develop a plan
6. Conduct operations
7. Evaluate your progress
**ABCs**

The ABCs as they relate to disaster medicine are:

- **Airway**: First and foremost, you want to make sure the person has an open airway.
- **Breathing**: Once they have an airway, you want to make sure they are breathing with non-labored breaths within a normal range (between 10-30).
- **Circulation**: We want to make sure, to the best of our ability that oxygenated blood is able to get to all vital organs, tissues and cells. We will learn methods for checking circulation to make sure the body is getting oxygenated blood delivered to all vital organs.

As you would imagine, these three things are very important to a person’s well being. Take one away and there’s a negative domino effect that may cause challenges for patient care.

**The “3 Killers” as related to the ABCs are:**

1. No airway
2. Excessive bleeding
3. Shock

In triage you will learn how to quickly assess the ABCs of your patients as related to the “3 Killers” and sort out the patients for medical care and attention.
In disaster medicine it is not important to diagnose what type of injury you may see because the care you will administer will roughly be the same.

Some of the conditions you may treat:
- Open wounds
- Fractures
- Burns
- Possible spinal cord injuries
- Exposed or protruding organs

The treatment of many of these injuries will be dressing and bandaging and the application of emergency splints and treatment for shock.

With all disaster victims or patients you see, you will work towards these common things:
- Manage a patient’s airway
- Work to control excessive bleeding
- Apply a splint if appropriate
- Treat patients to prevent shock

Wounds range from relatively minor ones, such as small punctures and scratches to major cuts, tears or gashes. Remember, a wound visible on the surface may not reflect the damage caused below the skin. Immediate and appropriate disaster medicine is essential.

Crush Injuries
The most common type of injuries that you will see are crush injuries. With crush injuries the wounds can either be:
- Closed wounds, where there may be evident bruising but the bones may be broken beneath the skin.
- Or an open wound, where a piece of bone is protruding.

Crush injuries are often caused by heavy objects that have fallen on a person during an earthquake. We may also see sprains, strains, dislocations, burns, cuts, scrapes, and more serious injuries.
Open Wounds
Open wounds are breaks in the skin. They bleed and are at risk for infection and should receive prompt attention. There are five types of open wounds.

1. **Abrasion**
   - Shallow wound caused by rubbing or scraping a hard surface across skin.
   - Wound not deep but at high risk for infection due to large area of exposed tissue.
   - May be very painful.
   - Bleeding may be minimal.

2. **Laceration**
   - A jagged, rough cut to the skin.
   - More damage to soft tissue and greater chance of infection.

3. **Avulsion**
   - Skin and underlying tissue and / or muscle torn from body completely, or hang in a flap.
   - When avulsed tissue (fingers, limbs, large pieces of skin and tissue, etc.) is torn from the body, try to retrieve avulsed part.
   - If possible, wrap in dry sterile dressing, place in plastic bag on ice, transport with victim to medical care facility.
   - Make sure the part stays dry and not in direct contact with ice or icy water.

4. **Puncture**
   - Stab wound from nail, shard of glass, or sharp piece of wood.
   - Sometimes external bleeding is minimal due to small size of wound.
   - Internal injury may be severe due to depth of wound. Especially if objects causing the injury reach major blood vessels or body organs.
   - Always assume there is internal damage with puncture wounds.

5. **Impaled Puncture Wound**
   - Object embedded in skin.
   - Leave object where it is as clotting often takes place around impaled object.
   - Removing object will disrupt clotting and cause excessive bleeding or damage to nerves and muscles.
   - Can result in death.
   - Think of the impaled object as the finger in the dyke.
   - Dress wound around the object securely in place.
   - Seek further medical attention.
   - Transport patient to field hospital or medical facility with object still in place and stabilized.
   - The only time you will move an impaled object is when it is obstructing the airway.
Spinal Cord Injuries

Many traumatic events trigger spinal cord injuries. It is important to recognize the signs and symptoms of spinal cord injuries as moving these people can result in additional injury or death. Signs and symptoms may include the following:

- **Pain**: Is patient aware of pain in injured area?
- **Tenderness**: Does gently touching affected area cause more pain?
- **Pain upon movement**: Patient may experience pain if trying to move injured area. Never try to move affected area for patient as it may cause additional damage.
- **Bruises and cuts**: If spine is injured along the neck, bruises and cuts may show on head and face. If spine is injured elsewhere, bruises may appear along shoulders, back, or abdomen.
- **Deformity**: While unusual, an abnormal bend or bony protrusion may be visible.
- **Paralysis**: If patient is unable to move or feels no sensation in any part of their body, they may have a spinal injury.

Patients with a suspected spinal cord injury may be conscious or unconscious. Some injuries are indicative of others. For example, a fall on the face could injure the neck.

If victim is conscious:

- **Ask** questions such as: “What Happened?”, “Events leading up to injury?”, “Does it hurt?”, “Can you feel me pinching your fingers or toes?”
- **Look** for signs of trauma such as bruises, cuts, or deformities.
- **Feel** for areas that may be tender, sensitive, or deformed (twisted and / or with protrusions).
- **Ask** “Can you move?” if so, move patient slowly.
- **Ask** “Any pain associated with movement? If so, where?”

With an unconscious victim it is difficult to check for spinal cord injuries. If the victim presents any symptoms for findings you should treat as a spinal cord injury.

- **Look** for cuts, bruises, or deformities.
- **Feel** for deformities and swelling.
- **Ask** bystanders or witnesses what happened.

Exposed or Protruding Organs

- Cover them to reduce the chance of infection
- Keep coverings moist for internal injuries
- Do not try to clean or replace protruding organs
Before you begin treating injuries you must first assess the victim to get a clear understanding on the number and severity of injuries. This can happen immediately upon finding a victim or after you have conducted triage. This process for assessing a victim’s injuries is called a Primary and Secondary Survey.

**Primary Survey**

When conducting a primary survey you will be focusing on the following three factors (also used during triage): Respiration, Perfusion, and Mental Status.

- Check airway
  - Is it open?
  - Look, listen, and feel.
- Is breathing adequate?
  - Normal breathing is between 10 and 30 breaths per minute.
- Check circulation
  - Is capillary refill less than 2 seconds or greater?
- Is there a pulse?
  - Normal pulse is between 60 and 100 beats per minute.
- Check mental status
  - Is victim responding appropriately to questions?
  - Appropriate motor / sensory functions?

Following the Primary Survey, move on to the Secondary Survey.

**Secondary Survey**

The Secondary Survey is a systematic method of checking a victim for injuries not immediately apparent. Once starting the Secondary Survey, make sure to complete it; don’t stop to treat wounds until finished. This gives a fairly complete picture of the victim’s injuries before starting treatment. Remember, the most visible injuries are not always the most life threatening, which is why it is important that you do a Secondary Survey. Continue talking to patient throughout entire secondary survey to ascertain areas of pain and monitor mental status. When working with children start at the feet and work your way to the head so as not to alarm them with the survey.

Start with the head and work your way down to the feet

- **Head and Scalp**
  - Check for lumps, bumps, bleeding, and depressions.
  - Check for possible concussions.
- **Ears and Nose**
  - Check for blood or fluid.
  - Check for deformities.
- **Mouth**
  - Check for injuries, jaw movement, obstructions.
  - Check for possible airway obstruction.
  - Check teeth. Are they injured? Are they false teeth? (could dislodge and become airway obstruction).
• Face
  o Check for lacerations, fractures, condition of skin.
• Neck
  o Check that trachea (windpipe) is midline.
  o Check for medic alert tags.
  o Check for neck vein distension.
• Clavicles, Arms, and Hands
  o Feel for deformity, pain, dislocations, and breaks.
  o Check for pulses on both wrists.
  o Have victim squeeze your fingers with both hands, checking for equal grip strength.
  o Check nail beds for capillary refill.
• Chest
  o Compress ribs gently and check for pain, deformities, and breaks.
  o Listen to patients breathing.
  o Does chest rise and fall equally on both sides?
• Abdomen
  o Check for signs of swelling.
  o Gently feel for pain, tenderness, rigidity. (could be sign of internal bleeding.)
• Pelvic region
  o Press hips together gently to check for pain or abnormal movement.
  o Look for signs of bladder or bowel loss.
• Back
  o Without moving patient, slip your hand under victim’s back and feel for fractures, deformities, swelling, and bleeding.
• Legs
  o Feel legs, knees, ankles, and feet.
  o Check for wounds, abnormal alignment, dislocation, discoloration, or swelling.
• Feet
  o Check skin temperature.
  o Check capillary refill.
  o Grasp victim’s toes and have them pull up and then push down against your hands, checking for equal strength and movement.

Once Primary and Secondary Surveys have been completed and a better picture of the victim’s condition is known, begin to treat injuries. Remember that victims must be reassessed regularly for changes in condition. Document what you find and do for treatment.

No matter what the injury or the severity of the injury, your scope of practice will be to treat all injured victims by:
  • Making sure the victim has an open airway.
  • Taking measures to control excessive bleeding through bandaging and dressing.
  • Treating victims to prevent shock.
Methods for Establishing an Airway

Head-tilt – chin-lift

1. At an arm’s distance, shake the victim by touching the shoulder and shout, “Can you hear me?”
2. If the victim does not / 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 over the victim’s mouth, looking toward the victim’s feet, and place a hand on the victim’s abdomen.
5. Look for chest rise.
7. Feel for abdominal movement.

Jaw-thrust maneuver

The purpose of the jaw-thrust maneuver is to open the airway without moving the head or neck. If a head, neck or spine injury is suspected you will want to use the jaw-thrust method to open the airway. Once you use this method you cannot leave the patient unattended as their airway will close since you are using force to open their airway. This is not something you would do during triage or if you had limited rescuers and many victims to attend to. This is a method you would apply during if you had many rescuer resources.

How to perform a jaw-thrust maneuver

1. Carefully keep the patient’s head, neck and spine aligned, moving them as a unit as you place them in the laying down on their back position.
2. Kneel at the top of the patient’s head. For long term comfort it may be helpful to rest your elbows on the same surface as the patient’s head.
3. Carefully reach forward and gently place one hand on each side of the patient’s lower jaw, at the angle of the jaw below the ears.
4. Stabilize the patient’s head with your forearms.
5. Using your index fingers, push the angle of the patient’s lower jaw forward.
6. You may need to retract the patient’s lower lip with your thumb to keep the mouth open.
7. Do not tilt or rotate the patients head.
Methods for Controlling Bleeding

Uncontrolled bleeding initially causes weakness. If bleeding is not controlled, the victim may begin to go into shock within a short period of time, and may eventually die.

Types of Bleeding

- Arterial bleeding - Arteries transport blood under high pressure. Bleeding from an artery is spurting bleeding.
- Venous bleeding - Veins transport blood under low pressure. Bleeding from a vein is flowing bleeding.
- Capillary bleeding - Capillaries also carry blood under low pressure. Bleeding from capillaries is oozing bleeding.

An adult has about five liters of blood. If there is excessive bleeding our vital organs, tissues, and cells are not getting enough oxygenated blood and irreversible damage could be done. Losing one liter can result in death.

There are three methods for controlling bleeding:

1. Direct pressure
2. Elevation
3. Pressure points

Direct Pressure

- Apply direct pressure to wound using a clean, dry bandage or other type of dressing.
- If bleeding continues, apply another dressing over existing one and continue to apply dressings as needed.
- Wrap dressing to hold in place and continue to apply direct pressure.
- Can take 5 - 7 minutes to control bleeding.
- If the victim’s limb is turning blue or becoming numb below the bandage, then it should be loosened.
- Reduces blood flow and prevents further contamination.

Be creative with what you can use for bandaging (old t-shirts, sheets, towels, etc.). In an emergency situation all of these things can work.

Elevation

- Elevate the wound if possible.
- Critical that the wound is immobilized and the patient kept still.
- Direct pressure along with elevation will control most bleeding.

Note: For nose bleeds have the individual apply pressure to their nose and lean forward. This prevents blood from draining into the throat through the sinuses which could then become another form of an airway obstruction if the bleeding is excessive.
Pressure Points
When direct pressure / elevation techniques do not work, apply pressure directly to pressure points.

- Pressure points are where arteries lie close to the surface while passing over a bone.
- Apply pressure to these areas to minimize blood flow to the affected area.
- The pressure points most often used are the:
  - Brachial pressure points in the arm
  - Femoral pressure points in the leg

Tourniquets
Tourniquets will only be used as a last resort to stop bleeding. Tourniquets are a device twisted around an extremity to stop uncontrolled bleeding. They are rarely, if ever, necessary. Examples include partial or complete traumatic amputations or when major arteries are severed.

Tourniquets may:
- Cause substantial damage to tissue beneath tourniquet resulting in more damage than original injury
- Result in remainder of limb being amputated.

If using a tourniquet, write in a highly visible location (usually on forehead) that patient has tourniquet and the time it was applied. Before applying a tourniquet, ask yourself “Is this a situation of life or limb?”

Warning!
Never use a tourniquet except when blood flow is continuing and victim will lose their life as a result.
Dressing, Bandaging, and Splinting Injuries
Most cases of open wound care require the application of a dressing and a bandage.

Dressing
Any material applied to a wound in an effort to control bleeding and prevent further contamination. Dressings should be sterile.

Bandage
Any material used to hold a dressing in place. Bandages do not need to be sterile.

Various dressings are carried in emergency care kits and first aid kits. These dressings should be sterile, meaning that all microorganisms and spores that can grow into active organisms have been killed. Dressing also should be aseptic, meaning that all dirt and foreign body debris have been removed.

In emergency situations, when commercially prepared dressings are not available, suitable alternatives may be:

- A clean cloth
- Towels
- Sheets
- Handkerchiefs
- And other similar materials

Pressure Dressing
Pressure dressings are used to control bleeding. Gauze pads are placed on the wound and a bulky dressing is placed over the pads. A self-adherent roller bandage is wrapped tightly over the dressing and above and below the wound. Distal pulse (the pulse furthest away from the injury) must be checked and frequently rechecked to ensure adequate circulation. You may need to readjust the pressure to ensure circulation.
Occlusive Dressing

Occlusive dressings are used when it is necessary to form an airtight seal. This is done when caring for open wounds to the abdomen, for external bleeding from large neck veins, and for open wounds to the chest. Sterile, commercially prepared occlusive dressings come in many sizes. Non-sterile wrap and foil can also be used in an emergency situation. Even plastic credit cards and plastic bags can be used. The goal is create an airtight seal and control the bleeding.

Large dressings are sometimes needed in emergency care. Sterile, disposable burn sheets are commercially available. Bed sheets can be sterilized and kept in plastic wrappers to be later used as dressings. These sheets can make an effective burn dressing or may be used in some cases to cover exposed abdominal organs.

Bandages are provided in a wide variety of types. The preferred bandage is the self-adhering, form fitting roller bandage. It eliminates the need to know many specialized bandaging techniques developed for use with ordinary gauze roller bandaging.

Dressings can be secured using:
- Adhering or non-adhering gauze roller bandage triangular bandages
- Strips of adhesive tape
- Strips of cloth
- Handkerchiefs and other such materials

When bandaging an extremity it is best to wrap a large area, ensuring a steady, uniform pressure. Apply the bandage from the smaller diameter of the limb to the large diameter to help ensure the proper pressure and contact. The joints have to be considered. You can bandage across a joint, but do not bend the limb once the bandage is in place. To do so may restrict circulation; loosen the dressing, bandage, or both. In some cases, it may be necessary to apply a splint or to use a sling and swathe to prevent movement of the joint.

There is an exception to the rule of prohibiting the removal of dressing. If a bulky dressing has become blood-soaked, it may be necessary to remove the dressing so that direct pressure can be reestablished or a new bulky dressing can be added and a new pressure dressing created. Protection for the wound site is better maintained if one of more gauze pads is placed on the injured tissues before placing the bulky dressing without disturbing the wound.
Emergency Splinting

Emergency splinting is performed to immobilize injuries. This reduces the chance of additional damage to affected area and minimizes the amount of pain felt by the victim. Be creative by making splints from a variety of materials found at the emergency scene, such as:

- Soft materials like clothing and bedding
- Rigid materials like lumber, rolled-up magazines, pieces of cardboard boxes, PVC pipe, baseball bats, shovels, brooms, etc.
- An injured leg can be splinted to the good leg, if necessary

When splinting a patient, leave fingertips and toes exposed, so rescuer can periodically check capillary refill to ensure adequate blood circulation.

Check distal pulse before AND after splinting.
If you cannot locate a pulse distal to the injury it may mean your bandaging is too tight and restricting blood circulation. Loosen the bandage but still splint appropriately so you have a distal pulse.

Burns

The skin is the single largest organ of the body. Skin isolates the body in its environment, protects the body, retains fluids, plus other functions. Damage to skin can result in severe bacterial infections, inability to regulate body temperature, and loss of body fluids. Damage to skin is a critical concern.

There are three different ranges of burns and treatment for each.

<table>
<thead>
<tr>
<th>BURN</th>
<th>TREATMENT</th>
<th>CONSEQUENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Degree</td>
<td>Cool the burn with cool tap water.</td>
<td>Damage to only the surface level of the skin.</td>
</tr>
<tr>
<td>Red, sore, not blistered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Degree</td>
<td>Apply large amounts of cool water and remove clothing not stuck to the wound. Remove jewelry.</td>
<td>Damage through all levels of the dermis (skin).</td>
</tr>
<tr>
<td>Blistered, painful.</td>
<td>Fluids may ooze.</td>
<td></td>
</tr>
<tr>
<td>Third Degree</td>
<td>Lay victim flat. Use cool compresses. If the area of the burn is large, cover victim with a sheet to maintain temperature. If the victim is chilled, also use a blanket.</td>
<td>Damage occurs down through the dermis (skin) into the fatty tissues and beyond.</td>
</tr>
<tr>
<td>Pale and white or brown and charred.</td>
<td>May be painless (due to damage to nerve endings).</td>
<td></td>
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</tbody>
</table>
Shock

Shock is a very serious disorder resulting from ineffective circulation of blood to the body and its vital organs. Shock is a person’s automatic response to physical or emotional trauma. It is a progressive failure of the cardiovascular system, inhibiting blood flow to tissues, resulting in a general depression of all bodily functions. The body will initially compensate for blood loss and mask the symptoms of shock. Continually evaluate patients for signs of shock and monitor their condition.

Important Signs and Symptoms of Shock

- Anxiety and restlessness
- Rapid, shallow respirations
- Rapid, weak pulse
- Capillary refill of greater than 2 seconds
- Failure to follow simple commands
- Cool, clammy skin
- Sweating
- Incoherence, disorientation, babbling
- Feeling of despair, talk of doom or death
- Thirst

Treat Patients to Prevent for Shock

1. Lay the victim on his or her back.
2. Elevate the feet 6-10 inches above the level of the heart (if no neck injury is expected).
3. Maintain an open airway.
4. Control obvious bleeding.
5. Maintain body temperature (cover the ground and the victim with a blanket if necessary).
6. Avoid rough or excessive handling unless the rescuer and victim are in immediate danger.
7. Do not give any fluids or foods as vomiting will often occur and can lead to aspiration problems.
**Rescue Lifts & Carries**

During disaster operations we need to remove victims from the unsafe environment as quickly as possible. There are two basic types of victim removal:

1. Self-removal or assist
2. Lifts or drags

It is usually best to allow an ambulatory victim to extricate themselves. However, sometimes ambulatory patients are not as strong or uninjured as they may think.

The method of patient carry chosen will depend on:

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

You should not use lifts and drags to remove victims 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. Stress that the backboard must be able to carry the person, and that proper lifting techniques must be used. When moving victims, rescuers must use teamwork and communication, and keep the victim's spine in a straight line. Remember, rescuer safety and the condition of the building will dictate the approach.

Remember to use proper body mechanics to facilitate lifting and moving to prevent injury to yourself. Keep your back straight, lift with your legs, push don't pull and keep the weight of the load close to the core of your body.

**Single Person Carries**

**One-Person Arm Carry**

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

- Reaching around the victim's back and under the knees.
- Lifting the victim while keeping the rescuer's back straight and lifting with the legs.
One-Person Pack-Strap Carry

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

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

Two Person Carries

Two Person Seat Carry

This carry is a technique used to transport the patient in a “seat” made from the rescuer's arms. It allows for quick rescue and transportation and can be used in narrow passageways. Do not use this carry if spinal injuries are suspected.

1. Assemble two rescuers and place victim in a sitting position.
2. Each rescuer must place one arm around victim’s back to steady them.
3. Each rescuer then slides their other arm under victim’s thighs and grabs the wrist of the other rescuer. Done correctly, one pair of arms will form the “seat” and the other pair will form the “backrest”.
4. Raise patient slowly.
5. Designate one person as the leader.
6. Make sure all movements are in unison.
Two Person Carry
This technique is used to lift a person off the ground, or to carry victims down narrow corridors or stairways when no other method of transportation is possible. This is not a carry to be used for transporting victims a long distance since only one of the rescuers is supporting most of the weight of the victim. Do not use this carry if spinal injuries are suspected.

1. Place victim in a sitting position with knees raised.
2. One rescuer (Rescuer A) kneels behind victim.
3. Rescuer A then places their hands under victim's armpits and locks their hands together.
4. The second rescuer (Rescuer B) kneels, facing victim, and victim's knees.
5. Rescuer A, behind victim's back, will signal when to lift victim.
6. Both rescuers will stand, lifting victim, at the same time.

Rescuer A must take special care to lift with their knees, and not pull using their back. Rescuer A will be lifting the bulk of victim's weight and can sustain severe back injuries if lifting is not performed correctly.

Chair Carry
The victim is placed in a chair and tilted backward as rescuers lift the victim.
Transporting Victims with Spinal Injuries

When attempting to transport people with spinal injuries, or suspected spinal injuries, take special considerations. The primary danger is causing additional damage to the spine. Several methods of moving and transporting victims can be used, depending on the situation, number of rescuers, etc. Moving someone with suspected spinal injuries is an emergency move only. Use these carries only when the person’s life is in immediate danger if not moved. If the injury is non-life threatening leave the victim in place. Professional rescuers can transport the victim later.

Long Axis Drag

Make every effort to pull patient head first, in the direction of the long axis of body, to protect the spine.

1. Moving victim in a headlong direction, the arms will fall to the side and the feet will come together.
2. Sometimes the rescuer can drag victim away from a hazard by grabbing their clothing in neck and shoulder area.
3. Support head and neck without flexing or extending them.
4. Keep head and neck in line with spine.

Blanket Drag

Sometimes it may be easier to place the patient on a blanket and drag the blanket from the scene. The blanket drag is the most effective method for a rescuer to move an injured person. The blanket drag is performed in the following manner:

1. Assemble a couple of rescuers, blanket or tarp.
2. Run blanket along the length of the victim’s body.
3. Line up rescuers on the side of victim’s body opposite the blanket:
   a. Place one person at victim’s head. The rescuer controlling the head and neck is the “Leader”.
4. When Leader gives directive, all rescuers gently and smoothly pull victim’s body up on its side without twisting victim’s body. Victim will be facing rescuers. It is critical that victim’s neck, skull and body remain in line.
   a. Check the back for further injury while victim is on their side.
5. Rescuers now pull edge of blanket or tarp far enough under victim. When the victim is placed back down the edge of the blanket can be grabbed and wrapped around them.
6. Once blanket or tarp is in place, the Leader gives order to move victim back down in a slow, continuous motion.
7. Create a roll with the top of blanket and drag victim to safety, keeping the spine straight.
**Remember…**

Most of these disaster medicine and first aid skills will be part of your hands-on training and will enable you to function effectively in a disaster situation. However, this is a bare bones approach and represents just basic skills.

Your common sense, ingenuity, and creativity will be your greatest assets. Working and communicating effectively with other team members is critical to success. Even if you feel overwhelmed by the magnitude of the event, stay calm, focused and follow your training. You can make a valuable contribution and significant impact on saving lives.

The information you have received and skills you have practiced in this training are very basic and are only intended to provide you very simple steps in treating disaster injuries. It is highly encouraged that you take additional medical training like an American Red Cross First Aid class or other type of advanced medical training.
Setting up a Medical Treatment Area

Medical treatment areas are places where people with injuries can be brought to and cared for in a more efficient and effective manner. The site selected should be:

- In a safe area, free of hazards and debris.
- Close to, but upwind and uphill from, the hazard zone(s)
- Accessible by transportation vehicles (ambulances, trucks, helicopters, etc.)
- Expandable

The treatment area must be protected and clearly delineated using a ground cover or tarp, and signs should identify the subdivisions of the area:

- “I” for Immediate care
- “D” for Delayed care
- “Deceased” for the morgue

The “I” and “D” divisions should be relatively close to each other to allow:

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

A clearly marked treatment area will help in transporting victims to the correct location. Patients in the treatment area should be positioned in a head-to-toe configuration, with two to three feet between victims.
**TRIAGE**

Triage, a French word meaning “to sort”, is a process of prioritizing patients based on the severity of their condition. This helps you treat as many injured as possible when resources are insufficient for all to be treated immediately. In CERT, we want to be able to do the most good for the most people. Triage helps us to do just that when we have multiple victims.

Many people may be crying out our help – how do we know where to start when dealing with all of these people that may need our help? With triage we start where we stand.

Triage separates those that are injured into four groups:

1. **The deceased** who are beyond help.
2. The injured who can be helped by **immediate** medical care.
3. The injured whose medical care can be **delayed**.
4. Those with **minor** injuries, who need help less urgently (aka “walking wounded”).

The key to triage success is allowing time to perform these quick and simple techniques and not spend time where chances of success are not good.

**START Process**

The process for conducting triage and treating patients is known as **START** (Simple Triage and Rapid Treatment). The START process assesses three vital functions:

1. **Respiration** (airway / breathing)
2. **Perfusion** (blood circulation)
3. **Mental status** (alertness / consciousness)

**Triage Procedures**

**Respirations (Airway / Breathing)**

- Check for respiration.
- Look, listen, and feel for breath. Respirations can be present, but shallow and difficult to detect. Shut out extraneous noise and distractions and get in close to the patient.
- If patient is not breathing and trauma and / or spinal injury are suspected:
  - Open airway by head-tilt, chin-lift method - or if c-spine injury is suspected use the modified jaw-thrust method.
- After opening airway, check again for breathing.
- If still **not breathing** - tag patient **Black** (deceased) and move on.
- If patient **is breathing** - count respirations.
  - If respirations are more than 30 per minute - or fewer than 10 per minute - tag **Red** (immediate) and move on.
  - If breathing is adequate (between 10 and 30 breaths per minute) start Perfusion (Blood Circulation) test.
Perfusion (Blood Circulation)
Is adequate blood supply being circulated?
- Check by capillary refill.
  - Press on fingernail bed (base of nail or in light semicircle).
- If patient is breathing and color does not return in less than 2 seconds - tag Red (immediate).
- If patient is breathing and color returns in less than 2 seconds - start evaluating Mental Status.

Mental Status (Alertness / Consciousness)
- Is the patient alert and oriented to person, place, time, and purpose?
- Decreasing level of consciousness is indication of shock.
- Determine mental status by asking simple questions.
  - “What is your name?”
  - “Can you tell me where you are?”
  - “What day is it today?”
- If victim cannot follow simple instructions, tag Red (immediate).

If victim passes all three tests: Respiration, Perfusion, and Mental status, tag Yellow (delayed).

A helpful mnemonic with triage is “30-2-Can Do”
Conducting Triage

1. Stop, look, listen, and think.
   Before you start, 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 and how.

2. Determine the walking wounded.
   Your first action in beginning triage is to ask “All those who can stand and walk, get up and move outside this building” (or next to the red car, etc.). This separates “walking wounded” from the rest of the more severely injured victims. The “walking wounded” get **Green tags** (Minor injuries). Walking wounded can:
   - Assist in controlling bleeding.
   - Hold a victim’s head in neutral alignment for suspected spinal injury.
   - Comfort or monitor the more seriously injured.

3. Conduct voice triage.
   Begin by calling out, “Emergency Response Team. If you can walk, come to the sound of my voice.” If there are survivors who are ambulatory, instruct them to move to a designated location, and continue with the triage operation. (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 victims.

4. Start where you stand and follow a systematic route.
   Start with the closest victims and work outward in a systematic fashion.

5. Evaluate each victim and tag them.
   “I” (immediate), “D” (delayed), or “**Deceased**.” Remember to evaluate the walking wounded.

6. Treat “I” victims immediately.
   Initiate airway management, bleeding control, and / or treatment for shock for Category “I” victims.

7. Document triage results for:
   - Effective deployment of resources.
   - Information on the victims’ locations.
   - A quick record of the number of casualties by degree of severity.

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**Triage tags are available to assist in marking patients.**
Without triage tags use tape and a marking pen. Write “I” for Immediate, “D” for Delayed or the word “Deceased” on some tape and attach somewhere near the victim’s head – or write on forehead.
Challenges with Triage
There are several challenges in triage operations:
- Inadequate medical size-up.
- No team plan / organization / goal.
- Indecisive leadership.
- Too much focus on one injury. (In a disaster, time is critical. You cannot spend very much time with any single victim.)
- Treatment (rather than triage) performed.

Remember, triage is a process that needs to be practiced and many of the problems can be avoided through careful planning and preparation. Practicing triage in disaster simulations as often as you can will help you avoid these pitfalls.

CPR in a Disaster Situation
Cardio Pulmonary Resuscitation (CPR) is not an option if there are multiple victims. Doing CPR on a patient already “deceased” uses a rescuer who could have possibly saved several victims, simply by opening airways.

Disaster Fatalities
In disaster situations, it is estimated that around 40% of deaths could have been prevented, if rescuers had performed one of the following first aid techniques:
- Open airway
- Stop bleeding
- Treat victims for shock

Dealing with Death
An unpleasant task that CERT members may face is managing the family members at the scene of the death of a loved one. Following are some suggested guidelines (T.W. Dietz, 2001; J.M. Tortorici Luna, 2002) for dealing with this situation:
- Cover the body; treat it with respect.
- Have one family member look at the body and decide if the rest of the family should see it.
- Allow family members to hold or spend time with the deceased. Stay close by, but don’t watch and try to distance yourself emotionally.
- Let the family grieve. Don’t try to comfort them out of a need to alleviate your own discomfort.
- Make sure as much documentation about the individual is with that individual.
- Do not let others wander around this area.
- Secure the area.
**Samples of Triage Tags**

Triage tags can be used to visibly mark and identify a patient’s triage status. There are many varieties of tags available for use but the concept remains the same, when a victim is triaged some form of visible marking or identification should be used so that others on your team are able to effectively and efficiently distribute the limited resources and provide immediate care to those most in need.
Scene Safety and Scene Size-up

Disaster medical operations will be working closely with the search and rescue team to treat the victims found in buildings. You may also find victims outside of buildings that you may triage and then begin patient care and treatment. There are seven steps for scene size-up with disaster medicine:

1. Gather facts.
   - Ask yourself:
     - What happened?
     - What’s going on?
   - Are there hazards that I need to be aware of?
     - Downed wires?
     - Gas leaks?
   - How many patients are there?
   - What special tools or equipment may I need?
   - What is wrong with this person? What was or could have been the mechanism of injury?

2. Assess the scene.
   - If the scene is deemed safe, as safe as can be in the event of a disaster, approach the victims and begin triage and our patient assessments. Again, the search and rescue team may be bringing patients out of the building to you, or you may find victims on your own that may have been injured that were not inside the structure.

3. Identify your resources.
   - How many people do you have to work on your medical team?
   - Do you have the personal protective equipment that you need to be safe?
   - Do you have enough medical supplies to treat victims?
   - Will you need to grab some bed sheets or towels for creating bandages?
   - Do you have blankets in order to treat patients for shock?

4. Establish your medical priorities.
   - What you will learn about triage will establish your medical priorities to do the greatest good for the greatest number of people.

5. Develop a medical plan.
   - Treating people in disaster situation may require you wearing several different “hats” at one time. Chances are you will have several victims. Remember to remain flexible as the patient’s condition may change, the medical treatment plan may change and you may need to multi-task.

   - You will treat people based on the CERT scope of practice for disaster medicine. Identify and treat injuries.

7. Evaluate your progress.
   - Closely monitor your patients and make sure you know how they are doing.
   - Is their condition improving or getting worse?
   - Is the anything else you can do for them?
   - Is the triage / medical treatment area still in a safe location?
Un t i t  O b j e c t i v e s

Understand fire chemistry and the equipment used for extinguishing fires.

Understand the techniques for safely extinguishing fires.

Learn about hazardous materials and special considerations when working in fire conditions.
Fire suppression is a dangerous activity. Efforts should be made to contact the fire department. In the event of a catastrophic event, however, first responders may likely be unavailable. The purpose of this unit is to educate you as how to extinguish small fires only.

What is your role as a CERT team member with fire suppression? First and foremost it is your own safety. Never put yourself in harm’s way by trying to fight a fire that is outside the scope of what you are trained for as CERT members. You are only going to attempt to put out small fires that can easily be extinguished with a fire extinguisher.

Goals for Fire Suppression
- Rescuer safety is always the number one priority.
  - CERT members always work with a buddy and wear safety equipment (gloves, helmet, goggles, mask, and boots).
- Extinguishing small fires before they become major fires.
  - Ensuring that a fire, once extinguished, is completely extinguished and stays extinguished.
- Shutting off utilities, when necessary and safe to do so.
- Do the greatest good for the greatest number.

Fire Chemistry
Fire requires three elements to exist:
1. Heat: Heat is required to elevate the temperature of a material to its ignition point.
2. Fuel: The fuel for a fire may be a solid, liquid, or gas.
3. Oxygen: Oxygen feeds the fire.

If any of these elements is missing or if any is taken away, fire will not occur or will extinguish.

Principles of Flammability
Essential for combustion:
- Oxidizing agent (air), combustible material, ignition source.
- Combustible material must reach ignition temperature before it ignites or supports fire.

Burning will continue until:
- Combustible material consumed.
- Air (oxidizing agent) in lower concentration than is needed to support combustion.
- Heat reduced to stop combustion.
- Flames chemically inhibited or sufficiently cooled.

Don’t Forget Size-Up
1. Gather facts
2. Assess the scene
3. Identify your resources
4. Establish your priorities
5. Develop a plan
6. Conduct operations
7. Evaluate your progress
Classes of Fire

Class A
Ordinary combustibles:
- Paper, cloth, wood, rubber, many plastics
- Extinguished by cooling
- The numerical rating on these types of extinguishers indicates the amount of water it holds and the amount of fire it can extinguish.

Class B
Flammable liquids:
- Oils, gasoline, paints, cooking grease, other liquids
- Extinguished by coating to exclude air
- The numerical rating for Class B extinguishers indicates the approximate number of square feet of fire it can extinguish.

Class C
Energized electrical equipment:
- Wiring, fuse boxes, any energized electrical equipment
- Never use water to extinguish Class C fires, the risk of electrical shock is far too great!
- Class C extinguishers do not have a numerical rating. The C classification means the extinguishing agent is non-conductive.

Class D
- Combustible metals:
  - Magnesium, Titanium, Sodium, Potassium, Zinc, powdered Aluminum
  - Combustible metals burn extremely hot, require special extinguishing agent.
  - These types of extinguishers also have no numerical rating, nor are they given a multi-purpose rating - they are designed for class D fires only.
Fire Extinguishers

Everyone should have at least one fire extinguisher at home, but it's just as important to ensure you have the proper type of fire extinguisher. Fire protection experts recommend one for critical areas like the kitchen and the garage.

Fire and fire extinguishers are divided into four categories based on different types of fires (see Classes of Fire). Each fire extinguisher also has a numerical rating that serves as a guide for the amount of fire the extinguisher can handle. The higher the number on the fire extinguisher, the more firefighting power you will have. The following is a quick guide to help choose the right type of extinguisher. Having a multi-purpose fire extinguisher (2A: 10: B-C) is a good option for your kitchen and bedrooms.

Almost all fires start out small and might easily be extinguished if the proper type and amount of extinguishing agent is promptly applied. Portable fire extinguishers are designed for this purpose, but their successful use depends on several factors. Extinguishers must be:

- Readily accessible
- In good working order
- Proper type for fire at hand
- Used when fire still small enough for extinguisher to be effective
- Used by a person who is ready, willing, and able to use it

Components of Fire Extinguishers

- Gauge indicates if extinguisher is full or needs recharge
- Nozzle must be directed at base of fire
- Pin must be pulled for extinguisher to operate
- Hose must be flexible and in good condition
- Label shows type and procedure for use
- State Fire Marshal tag tells date of expiration

How much time do you have to extinguish a fire with a fire extinguisher?

A typical fire extinguisher contains 20 seconds of extinguishing power. This could be less if it has already been partially discharged. Always read the instructions that come with the fire extinguisher beforehand and become familiar with its parts. Once the fire is out, don't walk away! Watch the area for a few minutes in case it reignites. Recharge the extinguisher immediately after use or purchase a new one.
How to Operate a Fire Extinguisher

Operate the extinguisher from a safe distance and then move towards the fire once it starts to diminish. Be sure to read the instructions on your fire extinguisher - different fire extinguishers recommend operating them from different distances. Remember: aim at the base of the fire, not at the flames! The best way to more easily remember how to properly use a fire extinguisher is to use the PASS method.

- **PULL** the pin. This releases a locking mechanism and allows you to discharge the extinguisher.
- **AIM** at the base of the fire, not the flames. You must extinguish the fuel.
- **SQUEEZE** the lever slowly. This releases the extinguishing agent. If the handle is released, the discharge will stop.
- **SWEEP** from side to side. Using a sweeping motion, move the fire extinguisher back and forth until the fire is completely out.

![Diagram of fire extinguisher use](image)
Fire Suppression Safety Rules

- Use safety equipment at all times, including helmet, goggles, dust mask, leather gloves, and heavy shoes. If you are not equipped to protect your personal safety, leave the building and do not attempt to extinguish the fire.
- Make sure everyone has evacuated the building or is in the process of evacuating.
- Work with a buddy as they help to protect your safety. Don’t ever try to fight a fire alone.
- Have a backup team whenever possible. 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.
- Feel closed doors with the back of the hand before entering a room, 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 and you should not enter! Opening the door will feed additional oxygen to the fire.
- Confine the fire, whenever possible, by keeping doors closed.
- If the fire turns to become a larger fire, leave immediately. Close the door behind you, get to a safe location away from the burning building.
- Stay low to the ground as smoke will naturally rise. Keeping low to the ground will provide you with fresher air to breathe.
- Maintain a safe distance and remember the effective range of your fire extinguisher. Don’t get closer than necessary to extinguish the fire.
- Overhaul the fire to be sure that it is extinguished and stays extinguished. If it’s a small fire, rake or hoe the area. Make sure to monitor the area where the fire was to ensure that it stays extinguished.

Smoke

- If smell of smoke is strong evacuate entire building.
- If fire presents immediate danger, close doors and windows if possible, and get out.
- In light smoke conditions, evacuate building and locate source of smoke.
- If fire of minor nature, extinguish fire, and open all windows.
- Smoke rises to the uppermost part of a building and is extremely dangerous in any fire.

Smell of gas

If there is an odor of gas present, do not turn on lights or electrical appliances, including flashlights. Turning on or off an electrical device may cause spark which could result in an explosion.
Before deciding to fight a fire, be certain that:

- The fire is small and not spreading. A fire can double in size within two or three minutes.
- The fire won't block your exit if you can't control it. A good way to ensure this is to keep the exit at your back.
- You know your fire extinguisher works. Inspect extinguishers once a month for dents, leaks or other signs of damage. Assure the pressure is at the recommended level. On extinguishers equipped with a gauge, the needle should be in the green zone - not too high and not too low.
- You know how to use your fire extinguisher. There's not enough time to read instructions when a fire occurs.

Beware of inhaling smoke!
Any sort of fire will produce some amount of carbon monoxide, the most deadly gas produced by a fire. Materials such as wool, silk, nylon and some plastics can produce other highly toxic gases such as carbon dioxide, hydrogen cyanide, or hydrogen chloride. Beware - all of these can be fatal. Make sure to wear all of your safety equipment before attempting to extinguish a fire.

Possible hazardous material situations

- Unusual odors
- Gaseous vapors
- Multiple sick and or unconscious people or animals
- Dead or dying animals
- Excretion of liquid from every orifice of people and animals
- Unnatural color of liquid and or smoke
- Biohazard identification symbol

How to Fight a Fire Safely

- Always stand with an exit at your back.
- Stand several feet away from the fire, moving closer once the fire starts to diminish.
- PASS method. Use a sweeping motion and aim at the base of the fire.
- If possible, use a "buddy system" to have someone back you up or call for help if something goes wrong.
- Be sure to watch the area for awhile to ensure the fire doesn't re-ignite.

Working together

- 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.
- Team Member 2 keeps his or her hand on Team Member 1’s shoulder.
- Team Member 2’s job is to protect Team Member 1.
Never Fight a Fire If:

- The fire is spreading rapidly. Only use a fire extinguisher when the fire is in its early stages. If the fire is already spreading quickly, evacuate and call the fire department.
- You don't know what is burning. Unless you know what is burning, you won't know what type of fire extinguisher to use. Even if you have an ABC extinguisher, there could be something that will explode or produce highly toxic smoke.
- The fire is spreading beyond immediate area—or already a large fire
- The fire could block your escape route
- There is too much smoke or you are at risk of inhaling smoke. Seven out of ten fire related deaths occur from breathing poisonous gases produced by the fire.

Ventilation

The purpose of ventilation is to exhaust noxious or dangerous gas, smoke, or other toxic vapors from a confined space to the outside air. Search and rescue or fire fighting operations may then continue. This is done only after the cause of gas or smoke has been discovered and abated.
HAZARDOUS MATERIALS

Knowledge that hazardous materials are present helps to protect CERT members’ safety and is valuable size-up information for first responders. Hazardous materials pose an ever-present danger. They are stored in all types of locations and are transported by a variety of means. Hazardous materials can also be things like paints, kerosene, lawn and yard chemicals. These can be located in various locations and stored in a variety of containers.

Identifying Stored Hazardous Materials
The pictured placard is an NFPA 704 Diamond—the identification system instituted by the National Fire Protection Association for identifying the hazards associated with specific materials. This placard would be found on a fixed facility. The diamond is divided into four colored quadrants, each with a rating number inside of it, and that the number indicates the degree of risk associated with the material. THE HIGHER THE NUMBER THE HIGHER THE RISK!

The numbers within the NFPA 704 Diamond (shown right) are for professional firefighter use only. CERT members should consider these placards a “stop sign.” The only action CERT members should take when a facility is placarded with an NFPA 704 Diamond is to evacuate persons who are downwind, as necessary, to an uphill and upwind location.

Materials are considered hazardous if they have any of the following characteristics:
- Corrode other materials
- Explode or are easily ignited
- React strongly with water
- Are unstable when exposed to heat or shock
- Are otherwise toxic to humans, animals, or the environment

Hazardous Materials in the Home or Work Place
- Kitchen: Oven cleaners, drain cleaners, ammonia, bleach
- Laundry: Bleach, spot removers, cleaners
- Garage: Gasoline, solvents, pesticides, paints, paint removers, thinners

Here are some things you should consider when storing hazardous materials substances:
- Make a list of hazardous materials
- Read labels on all products purchased
- Segregate, store, or dispose of properly
- Know what steps to take if chemicals are spilled
- Secure and segregate all containers at work.

Products labeled DANGER should not be stored together in the same place to limit the risk of dangerous materials mixing together due to leakage or breakage. For example: Ammonia mixed with Bleach creates chlorine gas.
Scene Safety and Scene Size-up

The first task in fire suppression is the size-up or gathering of information for decision making and planning. Size-up is a continuous data-gathering process that will dictate whether or not to attempt to put out the fire. CERT size-up answers these questions:

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

There are seven steps for scene size-up with fire suppression:

1. **Gather facts.**
   - How big is the fire? Is the fire the size of something that is within the scope of a fire that a CERT member is trained for?
   - Time of day? How many residents may be home and need to be saved?
   - Are there any residents that may require special consideration? Children? Elderly?
   - Will weather conditions impact the fire suppression? If yes, how?
   - Have the utilities on the building been secured, if necessary?
   - Are there other hazards that I need to consider? Hazardous materials? Downed power lines?

2. **Assess the scene.**
   - Is the scene safe to approach?
   - Have you taken a lap around the building? Is the building safe to approach?
   - Do we have appropriate protective clothing and protective equipment on?
   - Is there a backup escape plan in case your main escape route is blocked?

3. **Identify your resources.**
   - Before you go anywhere near the fire, identify your resources that you have available to consider suppressing the fire.
   - How many people do you have on your fire suppression team?
   - Do you have enough fire extinguishers to extinguish the fire(s)?
   - Does everyone know how to operate a fire extinguisher?
   - Do you have the required protective equipment needed? (leather gloves, goggles, mask, etc.).

4. **Establish your fire suppression priorities.**
   - CERT members will only attempt to extinguish small fires.

5. **Develop a plan.**
   - Who will be the lead person with the fire extinguisher?
   - Who will be your buddy to help you extinguish the fire?
   - Do you have a backup team?
   - Do you both understand the plan?
6. **Conduct fire suppression.**
   - Approach the fire and work to extinguish the fire based on the methods learned.

7. **Evaluate your progress.**
   - Closely monitor the fires you extinguish as they may re-ignite.
   - Does your primary fire suppression team need a break? Swap in a backup team if you have the resources.
   - Has the scope of the fire changed?
   - Are there additional safety risks?
   - Has your resource availability changed?
UNIT 5
LIGHT SEARCH & RESCUE

Unit Objectives

Understand building safety considerations and hazards.

Identify the tools and resources for use in search and rescue operations.

Learn the techniques used for conducting light search and rescue operations.
Previous disasters have shown that immediately after almost every disaster, the first response to trapped victims is by spontaneous, untrained, and well-intentioned persons who rush to the site of a collapsed building in an attempt to free the victims. More often than not, these spontaneous rescue efforts result in serious injuries and compound problems. To avoid the problems associated with spontaneous actions, rescue efforts should be planned and practiced in advance.

The decision to attempt a rescue should be based on the risks involved and the overall goal of doing the greatest good for the greatest number of people.

The Search & Rescue function is two separate activities:

1. **Search**: To look through (a place, an area, etc.) carefully in order to find something missing or lost.
2. **Rescue**: To free or deliver from confinement.

As a CERT member, you will confine your efforts to *light search and rescue*; that is, the relatively uncomplicated extrication of victims from situations that pose minimal risk to the rescuer. If the primary and secondary entrances to a home are obstructed consider forcible entry to rescue individuals.

### Goals of Search & Rescue

- Rescue the greatest number of people in the shortest amount of time
- Rescue lightly trapped victims first

### Safety Considerations

In assessing your own situation and making decisions about search and rescue strategies, rescuer safety must be the primary concern. The two most frequent causes of rescuer deaths are disorientation and secondary collapse. The following are guidelines for safe search and rescue.

- **Buddy System**: Always work in pairs, with a third person acting as a runner.
- **Hazards**: Be alert for hazards, such as sharp objects, dust, hazardous materials, power lines, leaking natural gas, high water, fire hazards, and unstable structures. If water is present, check the depth before entering. Never enter rising water.
- **Safety Equipment**: Wear safety equipment and clothing appropriate to the task. In search and rescue operations, the equipment will include:
  - Helmet or hard hat
  - Goggles
  - Dust mask
  - Whistle for signaling other rescue workers
  - Leather work gloves
  - Clothing appropriate for the weather
  - Sturdy shoes (preferably steel-toed)

- **Rotate Teams**: Have backup teams available. Monitor the length of exposure of active teams. Be alert to signs of fatigue. Establish regular search and rescue shifts or rotate personnel (as a team) as needed. Have teams drink fluids and eat to maintain themselves.

### Don’t Forget Size-Up

1. Gather facts
2. Assess the scene
3. Identify your resources
4. Establish your priorities
5. Develop a plan
6. Conduct operations
7. Evaluate your progress
HAZARDS

Always be aware of potential hazards around you, they can be above and below ground.

Above & Ground Level Hazards

- Leaning buildings, walls, and utility poles
- Overhanging building pieces, signs, cornices, decorative work, chimneys
- Utility wires can cause electrocution

**ASSUME ALL WIRES ARE ELECTRICALLY CHARGED!!**

- Glass, nails, broken concrete
- Accumulation of surface water

Below Ground

- Contaminated atmosphere in confined spaces such as:
  - Basements due to gas leaks or smoke
  - Flammable, toxic, or oxygen deficient air
- Flooding due to water leaks:
  - Drowning
  - Electrocution

Signs of Possible Structural Damage

Most buildings that have suffered structural damage show very distinctive outward signs. Before entering any building, thoroughly check for signs of possible structural damage. Buildings typically are built with straight horizontal and vertical lines, when the building has suffered structural damage these straight lines can become distorted. This is a strong indication that the building’s structural stability has been compromised. The following are obvious signs of structural damage:

- Uneven window lines
- Foundation not level
- Any leaning of the walls, garage doors, or entryways
- Large cracks in exterior of building or in foundation

Wood frame buildings, such as homes and apartment buildings, perform very well during an earthquake. They are built to withstand the lateral force of the earthquake if properly prepared with foundation bolts and cripple walls. However, garage doors can be a weak link in a structure during an earthquake since there is no lateral support.

Classifying Building Damage

Once exterior signs of damage are examined, classify buildings according to the amount of damage sustained. There are three classifications of structural damage:

1. Light Damage
2. Moderate Damage
3. Heavy Damage
Light Damage
- Damage to structure superficial, broken windows, fallen or cracked plaster.
- Major damage involves interior contents.

Primary Duties:
- Search, locate, triage, and prioritize removal of victims to designated triage area established by the medical group.
- Shut-off utilities if necessary.
- Record all actions taken.

Moderate Damage
- Damage more extensive.
- Decorative work on exterior either damaged or fallen off building.
- Large amount of visible cracking but building not leaning.
- Still attached to foundation.
- No other outward signs of structural damage.
- Possible major damage to interior contents.

Primary Duties:
- Before entering, get information on location of potential victims from witnesses, if possible.
- Locate, stabilize and immediately evacuate victims to safe area outside building.
- Do not treat injured inside, except to open an airway and stop major bleeding.
- Aftershock may make building structurally unsound, spend minimum time in it.
- Document location of heavily trapped victims and communicate information to professional rescue teams.
- Shut off utilities, if necessary.
- Record all actions taken.

Heavy Damage
- Partial or total collapse.
- Buildings are tilting, off their foundations, or obviously structurally unstable.
- Do not enter these buildings!

Primary Duties:
- Secure building perimeter and control access into the building. Keep out untrained but well intentioned volunteers.
- If safe, shut-off gas at PG&E shut off in the street to prevent fires.
- Communicate location and extent of damage to fire department.
- Gather available information from witnesses for professional rescue teams.
TOOLS & RESOURCES

Basic Rescue Tools

- Fire extinguishers at least two 2-A:10-B:C
- Pry bars, 36” and 66” long
- Axes
- Sledge hammers, 5 lb. and 8 lb.
- Ladders
- Pocket knife
- Duct tape
- Utility shutoff tools
- Carpenter tools
- Note pad and pens in plastic bag
- CERT forms

Forcible Entry

Forcible entry is the technique used to get into a building when normal means of entry are either locked or blocked. It should be accomplished quickly and with a minimal amount of damage. The method used will depend on construction, operational design, and locking mechanism of door or window being forced. Always try to gain entry the easiest way possible! Make sure to do a voice call to see if anyone is inside. Make sure to also identify yourself; don’t assume that people know or recognize CERT teams. Forcible entry should only be attempted when there is reasonable evidence to believe that someone might be injured or trapped inside the structure or you are attempting to mitigate a life threatening hazard. All efforts should be made to enter the structure without forcing entry. Remember, try before you pry.

Doors and windows are obvious places to use forcible entry to gain access. But if you are trapped in a room, break into sheet rock or plaster wall, between wall studs, and create a hole to climb through.

Forcible Entry Tools

- Prying and spreading tools: axe, crowbar, pry bar, wrecking bar, car jack
- Cutting and boring tools: axe, hand saw, power saws, bolt cutters
- Striking and battering tools: axe, battering ram, hammer, sledge hammer

Points of Entry

- Front door
  - Is it open? Does anyone there have the keys?
- Any window or glass door
- Back or side door
- Garage door
- Back yard access
- Roof door via fire escape or back stairs
Forcing Doors

Swinging doors:
- Feel door for heat (fire) before trying to force it, then try knob
- Break glass panel in door or next to it, reach in, and unlock door
- If no glass around door, force it with sledge hammer, and pound directly on lock

Sliding glass doors:
- Break glass from top down
- Stand to one side
- Pry door at lock
- Lift door to disengage lock

Overhead doors/garage doors:
- Break glass panel, reach in, and unlock door
- If no glass, knock-out wooden panel, climb through, and open door
- If a solid door, cut hole in door

Forcing Windows

Sliding, swinging and pivoting windows:
- First, try to open window
- Open lock with thin tool or knife
- Break glass

Security windows (windows with bars):
- Try to gain access only if absolutely necessary
- Use a jack to spread bars apart
- Strike attachment points with heavy sledge until free
- Attach tow chain to car and pull-off

Breaking Glass

Use long handled tool such as an axe:
- Stand to side of window
- Keep hands above part of tool used to break glass, tilt tool prevents glass from sliding down tool and cutting rescuer
- Strike glass sharply with flat part of axe
- Strike glass high on window as possible
- Start at top of window clean out remaining glass
- Unlock window open before entering

Use the same breaking procedure on fixed windows, glass panels in entry area, and/or garage doors.
Ladders

Ladders are a valuable rescue tool. They allow search teams to enter and exit buildings through top floor windows or roof accesses. There are safety precautions to be followed when using ladders.

How to safely secure a ladder

- Secure base of ladder to prevent slipping
- Use one person to stabilize ladder at base
- Secure the ladder at top if possible
- Tie it to the fire escape
- Place ladder at safe climbing angle:
  - Place feet at base of ladder, extend arms until palms touch ladder, as shown in picture.
  - Ladder now at 70-degree angle to building, the recommended climbing angle.
  - Place ladder one rung above window sill, three rungs over roof top for easy access and egress.
- Climb ladder safely:
  - Hold on to rungs, not the beam
  - Place feet on center of rungs while climbing
  - Look up, not down
  - Walk vertically up ladder

Be aware of overhead wires

Metal ladders in contact with energized wires cause electrocution. A minimum 10-foot clearance between wires and ladder avoids possibility of contact when climbing.
Cribbing and Leveraging

Cribbing and leveraging are methods used to rescue victims trapped under heavy debris that not one person or even a group of persons can move on their own. Cribbing is the miscellaneous size wood used to stabilize an object so that trapped victims can be safely removed. An example of other resources for cribbing could be bricks, branches or tires – be creative. Cribbing is commonly used to stabilize debris within collapsed buildings. As we place the wood near the object trapping our victims, we will then leverage. 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.”

Cribbing

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. Cribbing is usually accomplished with blocks of wood, often 4”x4” or 6”x6” and 18”-24” long. Soft woods, like spruce and pine are often preferred because they crack slowly and make loud noises before completely failing, whereas stiffer woods may fail explosively and without warning.

Cribbing may also be made out of plastic, which unlike wood is not susceptible to rot or corrosion from fluids the cribbing may come in contact with like oil, gasoline, and hydraulic fluid.

Cribbing equipment is normally of three varieties: rectangular blocks, wedges (also called shims), and "step chocks" (large wooden chocks constructed of wood of different lengths). Blocks are the bread and butter of cribbing and will be used in most cribbing evolutions. Shims are used to snug up contact between the crib and supported object or change the direction of the crib (tilt).

Leveraging

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.

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 (front and back) to ensure stability. When you are able to achieve sufficient lift, you should remove the victim and reverse the leveraging and cribbing procedure to lower the object.

When CERT members must remove debris to locate victims, they should set up a human chain and pass the debris from one person to the next. Caution should be used, however, to set up the chain in a position that will not interfere with rescue operations. 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, the participants should lift and crib at one end, then repeat the process at the other end.
SEARCH OPERATIONS

When the decision is made to initiate search operations, CERT members must inspect the area assigned to them by the CERT team leader. The search operation involves two processes:

1. Employing search techniques based on the size-up
2. Locating potential victims

By using these processes, search operations will be more efficient, thorough, and safe. They will also facilitate later rescue operations.

Locating Potential Victims

The first step in locating potential victims 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 more information about areas of entrapment or voids.

There are several types of voids:

- **Pancake Voids**: most common in buildings that were constructed before 1933. They are created by the weakening or destruction of load-bearing walls, which allows the floors to collapse diagonally onto each other. If CERT members see pancake voids, this is considered heavy damage, and they should get out immediately.

  ![Pancake Void Diagram](image)

- **Lean-To Voids**: created when a collapsed wall or floor is resting against an outside wall. A victim trapped in a lean-to void has the greatest chance of being alive. Lean-to voids also indicate structural instability. If CERT members see lean-to voids, they should note the location for professional responders and leave the building immediately!

  ![Lean-To Void Diagram](image)
• **“V” Voids**: created by a “V” collapse of a floor or wall (the middle collapses and the ends lean against an outside wall). “V” void create two lean-to voids, one on either side of the collapse, in which victims can be trapped. The sloping floor caused by the “V” collapse presents a severe potential hazard to the rescue team. If CERT members encounter “V” voids, they should leave the building immediately.

![Diagram of V Void]

• **Individual Voids**: Spaces into which the victim may have crawled for protection. Examples of individual voids include bathtubs and the space underneath desks. Children may seek shelter in smaller spaces like cabinets.

Information specific to the inside of the structure may be known through planning, but CERT members may need to get some information by talking to bystanders or those who are familiar with the structure. CERT members should 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?

Caution should be used with bystanders as they may be confused by the event. They may tend to exaggerate potential numbers or may not even remember the event accurately.
An effective search methodology indicates rescuer location and prevents duplication of effort.

Conducting Search Operations

1. Begin the search by calling out to victims.
   a. Shout something like, "Is anyone here, can anyone hear me?"
   b. If any victims respond, give them further directions such as "If you can hear me, walk towards my voice." "Stay here." or "Wait outside." (depending on the condition of the building).
   c. Ask victims who respond for any information that they may have about the building or others who may be trapped.

2. Use a systematic search pattern.
   a. 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

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

4. Mark searched areas to document results.
   a. Make a single diagonal slash next to the door just before entering a structure.
   b. Make an opposite slash (creating an "X") when all occupants have been removed and search and rescue efforts have been completed.
   c. The "X" signals to other potential searchers that the area has already been searched and the results.

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

Example of a complete search marking on the outside of the building.
**Rescue Operations**

**Primary Rescue Functions**

1. Creating a safe rescue environment by lifting objects out of the way, using tools to move objects, and removing debris.
2. Triaging or stabilizing victims. Since you will likely be the first team inside of a structure looking for people you will also be responsible for triage. Follow the guidelines for triage as learned in Unit 3: Disaster Medical Operations: Triage.
3. Removing victims when required by the size-up.

**Goals of Rescue**

1. To maintain rescuer safety.
2. To triage in lightly and moderately damaged buildings.
3. To evacuate victims as quickly as possible from moderately damaged buildings while minimizing additional injury.

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

- **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. CERT rescuers 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.** CERT members should always use the proper safety equipment required for the situation and follow established procedures, including:
  - Working in pairs
  - Never entering an unstable structure
  - Lifting by bending the knees, keeping the back straight, and pushing up with the legs
  - Carrying the load close to the body
  - Lifting and carrying no more than is reasonable

CERT members may encounter situations in which debris needs to be moved to free victims. In these situations, CERT rescuers should consider leveraging and cribbing to move and stabilize the debris until the rescue is complete.

**Removing Victims**

For information on the proper techniques to use for removing or transporting victims, see *Unit 3: Disaster Medical Operations: Rescue Lifts & Carries.*
SIZE-UP IN LIGHT SEARCH & RESCUE

Scene Safety and Scene Size-up
As described in earlier chapters, size-up is a continuous analysis of facts that forms the basis for decision making and planning. Rescues must be planned and carefully executed to ensure the success of the rescue and the safety of the rescuer. Like size-up for other disaster operations, search and rescue size-up continues throughout the disaster response.

1. Gather facts.
   - Let the facts of the situation guide your search and rescue efforts. Consider the types of structure and construction, location, and severity of damage, as well as environmental conditions and hazards, the probable number of victims, and their conditions. Because the search and rescue situation continually changes, gather facts about the situation on a continual basis and revise plans as needed. The facts of the situation must guide search and rescue efforts. When gathering facts, CERT 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.
     - Some emergency services are not available—or not available in the same numbers—during the evenings or on weekends.
     - The type of structure. The purpose for which the structure was designed may indicate the likely number of victims, and their location.
     - Construction type. Some types of construction are more susceptible to damage.
     - Weather. Severe weather will have an effect on victims 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.

2. Assess and communicate damage.
   - There are general guidelines for assessing damage. If unsure about whether a building is moderately or heavily damaged, CERT members should assume heavy damage. The CERT mission changes depending on the amount of structural damage.
     - Building with Light Damage
       - Superficial damage
       - Broken windows
       - Fallen or cracked plaster
     - Minor damage to the interior contents
       - The CERT mission is to locate, triage, and prioritize removal of victims.
     - Building with Moderate Damage
       - Visible signs of damage
       - Decorative work damaged or fallen
       - Many visible cracks in plaster
       - Major damage to interior contents
• Building still on foundation
  o The CERT mission is to locate, stabilize, and immediately evacuate victims to a safe area while minimizing the number of rescuers inside the structure.

• Building with Heavy Damage
  • Partial or total collapse
  • Tilting
  • Obvious structural instability
  • Building off foundation
  • Warn the participants that they must not enter a building with heavy damage under any circumstances
    o The CERT mission is to secure the building perimeter and warn others of the danger in entering the building.

• CERT members will be working in close proximity to dangerous situations, it is critical to consider what will probably happen and what could happen. Look for:
  • How stable is the situation?
  • Does the structure appear stable from the outside?
  • Is there nonstructural damage or instability inside the structure? Is some remedial action required to stabilize nonstructural hazards before beginning the search?
  • Is a spotter necessary to look for movement that could indicate a possible collapse and warn the rescue team?
  • Are there hazardous materials like lawn chemicals, paints, or other potentially hazardous materials stored within the structure? Where are they?
  • What else could go wrong?

3. Assessing your resources.
• Identify all of the resources, such as personnel, equipment, and tools that are available to assist in rescuing victims.
  • Personnel
    o Who lives and / or works in the area?
    o During which hours are these people most likely to be available?
    o What skills or hobbies do they have that might be useful in search and rescue operations?
  • Equipment
    o What equipment is available locally that might be useful for search and rescue?
    o Where is it located and how can it be accessed?
    o On which structures might it be most effective?
  • Tools
    o What tools are available that might be useful for lifting, moving, or cutting disaster debris?
    o Tools required will depend on situation. Example, storm or earthquake damage may require tools for lifting debris whereas flood damage may require boats, ropes, and life preservers.
4. Establish priorities.
   - After identifying your resources, the next step is to determine what should be done and in what order?
   - The safety of CERT members is always the first priority and will dictate other priorities. For example, removing or mitigating known hazards must be completed before teams begin to search. Urge the participants to think through the situation logically to determine how they should approach the operation.
   - CERT members must determine what the priorities are for the situation at hand. For example, in a certain building there may be water rising, with victims trapped inside. In that case, the priority becomes getting out those victims who can be easily reached and removed without putting any rescuers at risk.

5. Develop a rescue plan.
   - This is when all of the information gathered about the situation comes together. During the team leader will decide specifically how the team will conduct its operation, considering the highest priority tasks first.
     1. The safety of CERT members
     2. Life safety for victims and others
     3. Protection of the environment
     4. Protection of property
   - Action plans do not need to be written. However, when search and rescue operations are required, the situation is probably complex enough that a written plan of some type should be developed. A simple written plan will:
     - Help focus the operation on established priorities and decisions.
     - Provide documentation to be given to responding agencies when they arrive.
     - Provide documentation that can be used, if necessary, after the incident.
   - Keep a notebook for jotting notes when developing an action plan. These notes should include changes to the plan that are made based on new information that comes in. For example the plan might be, "Joe, you and Bill do a quick search of the first floor. John and Sue, gather up all the loose 2 x 4 lumber you can find and break it into lengths of 3 feet and 6 feet. Sally, you will keep in voice contact with Joe and Bill when they go inside. Any questions? Great, let’s get started."

6. Take action.
   - Once the plan has been developed, the rescue team puts it into action and begins the rescue.

7. Evaluate your progress.
   - This is the most important step from a safety standpoint. The rescuers must continually monitor the situation to prevent any harm to the rescuers. Also, they determine if their plan is working, and if not, how it can be changed to make it work.
UNIT 6
DISASTER SIMULATION
& BEYOND CERT TRAINING

Unit Objectives

Review the primary functions performed by CERT members during CERT disaster operations.

Practice the skills associated with CERT operations during a simulated disaster scenario.

Understand the next steps for a student to take upon completing CERT training.
Disaster Simulation

Exercise Summary
At the end of the lessons, a hands-on, practical exercise will be conducted to highlight the CERT course curriculum in the following areas: fire safety & suppression, light search & rescue, team organization, and disaster medical operations. All CERT class participants will be involved. Volunteer victims in full moulage are a component of the exercise to provide realism for the students.

Goals of the Simulation:
Goal #1: To highlight lessons of CERT course material and put to use the skills learned in a safe manner in order to operate effectively as a member of CERT, all while doing the greatest good for the greatest number of people.

Goal #2: At the end of the exercise CERT students should feel empowered to take care of themselves and be able to respond to emergencies in their neighborhood with confidence.

Objectives of the Simulation Exercise
CERT team members should demonstrate the following skills:
1. Fire suppression.
2. Light search & rescue.
3. Triage and disaster medical operations.
4. Cribbing and leveraging of heavy objects. (optional)
5. CERT organization; leadership and communications.
6. Disaster psychology.
7. Take continuous safety measures to ensure a safe environment for rescuers and patient care.
8. Do the greatest good for the greatest number of people.

At the end of the simulation the students will debrief with the instructors for lessons learned.
NEIGHBORS HELPING NEIGHBORS – CERT IN YOUR NEIGHBORHOOD

The goal of Marin County’s CERT program is to empower and prepare you to be able to take care of yourself and your neighbors during / after an emergency or disaster. We have provided you with the training to enable you to do the greatest good for the greatest number of people and taught you how to keep yourself safe during a disaster. Now that you’ve learned about some of the different skills and responsibilities involved in being a CERT member, we want you to take the training back into your neighborhoods.

NEIGHBORLY OUTREACH – START A CERT TEAM

You’ve already taken the first steps as a leader in your community by signing up for and completing CERT training. With your excitement gained from having just completed the class, we challenge you to take that back to your neighborhood. Join an existing CERT team or start a new CERT team by sharing what you have learned with a few neighbors. Start with just a few houses at first.

Not everyone needs to have taken a CERT course to be on a neighborhood disaster team. Find a few homes that understand the importance of being prepared and share your training and knowledge with them. Share with them what you have learned about the common hazards and life-threatening events that we may experience here in Marin County, how overwhelmed our resources will be at the time of a disaster and how the needs of individuals may not be met as quickly as needed. As you know, it’s important to prepare to be a survivor and not a victim. By supporting your neighborhood CERT team you will have taken the steps to ensure the safety and survival of yourself, your family, and your neighbors.

For additional support or information on establishing your neighborhood CERT team, contact your local agency to see if teams are in place in your neighborhood. If not, work with your local agency to develop a CERT team in your neighborhood.

CONTINUED CERT TRAININGS

The skills that you learned in CERT Basic are perishable skills and we absolutely encourage you to participate in continued trainings to keep your skills current and get the latest information.

- **CERT Refresher**: The refresher course provides CERT graduates an opportunity to once again review the hands-on skills learned during the CERT Basic course. Students will review fire safety and suppression, triage, disaster medical operations, search & rescue, and victim extrication. All students attending CERT Refresher training must have previously completed a CERT class. It is encouraged that you take a refresher training every 2-4 years.

- **CERT Advanced**: These trainings will be offered to all CERT graduates. The goal of advanced training is to continually develop and enhance our CERT members skills and capabilities. Some of the advanced courses to be offered will include: Leadership, Advanced First Aid, Shelter Management Training, CERT Radio, Disaster Simulations, and CERT Organization.

Please be sure to visit the Marin County CERT website at [www.marincountycert.org](http://www.marincountycert.org) to sign up for future trainings. If there’s a topic that you don’t see a training listed for, let us know and we’ll look into developing and setting up that training for our CERT members.
List of Appendices

- Personal Preparedness
- Wildfire Preparedness
- Winter Weather Preparedness
- Animal Disaster Preparedness
- Terrorism
- Beyond CERT Training
- CERT Response & Operations Forms
PERSONAL DISASTER PREPAREDNESS

Get Ready Marin! is a countywide program designed for individual and family disaster preparedness. Please reference the enclosed Get Ready manual for more information on what you can do to become better prepared for an emergency or disaster event.

In the Get Ready manual you will learn:
- the hazards you should prepare for in Marin County
- ways to reduce the risk of loss and injury before disaster
- how to create a family disaster plan
- what you should include in your personal and family disaster supplies

Free Get Ready training classes are held year round and in every city just about every month. Private trainings are also available for neighborhood groups, businesses, HOAs, mother’s clubs, you name it. Get Ready materials and training classes are also available in Spanish. If you are interested in attending a training or setting up a in your area please visit http://www.getreadymarin.org for more information.

### Emergency Supplies

**Eating & Cooking**
- Dry plastic plates, cups, utensils
- Paper towels, thin double oven mitts
- Manual can opener
- Nonflammable cooking source & fuel
- All-purpose flour in can
- Unexpired pet food
- Pet food & water

**Health & Safety**
- First Aid Kit
- First Aid manual
- Deep, detergent, disinfectant
- Toothbrush, toothpaste
- Medications
- Money, wood, gloves
- Ready shoes
- Space blankets or sleeping bag
- Tent or other camping equipment
- Housing and barricades
- Frost candles
- Snagels or safety glasses
- Smoke

**Sanitation**
- Portable hand or bucket with lid
- Toilet paper
- Disinfectant
- Disposable hygiene supplies
- Plastic garbage bags
- Pet tidy
- Shovel
- Disposal & baby wipes

**Tools**
- shovel (clay, soil)
- 2” x 2” rubber
- Sand bags
- Buckets
- Food
- Highlights
- Extra batteries
- Portable radio
- Fire extinguisher (2A:10B:C)

You should have preparedness kits at your home, workplace, as well as your car.

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### Examples of recommended emergency supply kits can be found in the Get Ready manual.

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### Emergency Food

Food should be dated, reject items or eat food on or before date. Use fresh fruits, vegetables, and breads, and be sure that you family will enjoy. For example:
- Canned fruits, vegetables
- Fresh fish
- Milk
- Canned meat, eggs, pasta
- Bagels, bread
- Dry cereal
- Crackers
- Canned tomato sauce
- Canned pasta
- Canned beans
- Grilled cheese (in bag)
- Canned meat (in can)
- Meat
- Rice
- Beans
- Meat and vegetables
- Perishable milk
- Perishable meat
- Milk
- Dry rice
- Coffee
- Water (minimum of 1 gallon per person per day for 3 days)
Wildfires are a reality in Marin County. Marin has a history of wildland fires, including the loss of many homes. This means that both firefighters and residents have to be on heightened alert for the threat of wildfire. Firefighters train hard and make countless preparations to be ready for a wildfire. Residents need to do the same. Successfully preparing for a wildfire requires you to take personal responsibility for protecting yourself, your family and your property.

Marin fire agencies take every precaution to help protect you and your property from a wildfire. But the reality is, during a major wildfire, there will simply not be enough fire engines or firefighters to defend every home, so you must become part of the solution.

If your home borders a natural area, what firefighters call the Wildland Urban Interface, you are at risk from a wildfire. And, if you live within one mile of a natural area, you live in the Ember Zone. Homes in the Ember Zone are at risk from wind-driven embers from a wildfire.

You must do all you can to make your home resistant to wildfires and prepare your family to leave early and safely. We call this process, “Ready, Set, Go!”

In this brochure you’ll find information about the Ember Zone and how to retrofit your home with ignition resistive features. We’ll show you the importance of having defensible space around your home and the preparations you need to make so you can leave early, evacuating well ahead of the fire.

It’s not a question of if, but when, the next wildfire will occur. That’s why the most important person protecting your life and property is not a firefighter, but you. With advance planning and preparation, you can dramatically increase your safety and the survivability of your property.

Vegetation Management and Creating Defensible Space

For information on vegetation management and creating defensible space visit your local fire department website for specific requirements that may apply to your city or town.

Ready, Set, Go!

Develop your personal wildfire action plan. The Ready, Set, Go! brochure is included in this manual and available for download at [http://www.readysetgomarin.org](http://www.readysetgomarin.org) as well as other resources that may be helpful in your wildfire planning process.
Preparing for Flooding

- If your home is in the path of runoff, keep plywood, plastic sheeting, and lumber on hand to divert.
- If your property can be protected by sandbags, consider getting sand and bags BEFORE the rainy season and stockpile as many filled bags as you think you may need.
- Inspect your property for any signs of erosion. Rain has a way of making small problems become BIG problems. Call the Marin County Stormwater Pollution Prevention Program (485-3363) for a copy of their erosion control brochures: *Tips for the Weekend Warriors* and *Repairing Streambank Erosion*.
- Rake up and bag leaves as often as possible and ESPECIALLY before storms. Leaves clog up the storm drain inlets and are a principle source of most flood occurrences.
- Clean all drains around your home, including roof gutters and downspouts, drain inlets and pipes, drainage ditches and driveway culverts BEFORE the rainy season and re-check between large storms.
- If your basement is subject to flooding, consider installing a sump pump with generator back-up.

Make a plan and practice evacuation
See the Get Ready Marin manual for more information

Have personal comfort disaster supplies on hand at home and at work
See the Get Ready Marin manual for more information

Develop an emergency communication plan
See the Get Ready Marin manual for more information

Additional Resources
Marin County Flood Control District: [http://www.co.marin.ca.us/depts/pw/main/floodcontrol.cfm](http://www.co.marin.ca.us/depts/pw/main/floodcontrol.cfm)
Filling and Stacking Sandbags
Sandbags, when properly filled and placed, will redirect storm and debris flows away from property improvements.

- Fill sandbags 1/2 full.
- Filling bags with sand is recommended if readily available; however, sand is not mandatory, and any local soil may be used.
- For a more durable bag with increased effective life, mix 10 parts of sand or soil with one part of cement. The materials can be mixed and placed dry. After all bags are in place, a light sprinkling of water is recommended. This technique is only effective with burlap sandbags and will not work with plastic sandbags.
- Fold top of sandbag down and rest bag on its folded top (see Fig 1).
- It is important to place bags with the folded top toward the upstream or uphill direction to prevent bags from opening when water runs by them.
- Care should be taken to stack sandbags in accordance with the illustrations. Place each sandbag as shown, completing each layer prior to starting the next layer. Limit placement to two layers unless a building is used as a backing or sandbags are pyramided (see Figs. 2-8).

Limitations

1. Sandbags will not seal out water.
2. Sand and soil filled burlap sandbags deteriorate when exposed for several months to continued wetting and drying. If bags are placed too early, they may not be effective when needed.
3. Sandbags are basically for low-flow protection (up to two feet). Protection from higher flows requires a more permanent type of structure.

**CAUTION** - Do not use straw or bales of hay in lieu of sandbags. They do not perform as well as sandbags and may be washed away.
The majority of households in the United States own animals. These animals play primary roles and are a part of our families. The care for animals in disaster situations is a critical role and one that must be addressed and planned for ahead of the disaster.

The Marin Humane Society offers two documents, *Pet Disaster Plan* and *Disaster Plan for Large & Barnyard Animals*, to help prepare you for caring for the needs of your pets in a disaster. Additionally, CERT advanced trainings will be coordinated with the Marin Humane Society where CERT graduates can further their skills and learn the following:

- Animal behaviors in a disaster
- How to plan for animals as part of their CERT team's response
- The basic elements of animal disaster planning, to include:
  - Pet identification
  - Evacuating and transporting your pet
  - What to do if your pet is lost
  - What to do if you find a lost pet
  - What to do if your animal must be left behind during an evacuation
  - Assembling pet disaster kits

For more information on how to plan for animals in a disaster, visit the Marin County Humane Society’s website at [www.marinhumanesociety.org](http://www.marinhumanesociety.org).
CERTs are not trained or equipped to deal with chemical, nuclear, radiological or biological terrorist situations.

**How to protect yourself against these types of acts**

The most appropriate action will depend on the situation. Tune to the local emergency response network or news station for information and instructions during any emergency.

CERT personnel should follow directions of local authorities.

You may be advised to “shelter-in-place,” which means to stay in your home or office; or you may be advised to move to another location.

**If you are advised to shelter-in-place, you should do the following:**

- Close and lock all doors and windows.
- Turn off fans, air conditioners, and forced-air heating units that bring in fresh air from the outside. Only use units to recalculate air that is already in the building.
- Close fireplace dampers.
- If possible, bring pets inside.
- Move to an inner room or basement.
- Keep your radio tuned to the emergency response network or local news to find out what else you need to do.

**If you are advised to evacuate, follow direction from public safety officials**

- Leave the area as quickly and orderly as possible
- Take a flashlight, portable radio, batteries, first-aid kit, supply of sealed food and water, hand-operated can opener, essential medicines, and cash and credit cards.
- Take pets only if you are using your own vehicle and going to a place you know will accept animals. Emergency vehicles and shelters usually will not accept animals.
If you are interested in getting involved in CERT and learning more about the role of CERT in your town, city, or community, please contact the appropriate representative from the list below.

<table>
<thead>
<tr>
<th>SOUTHERN MARIN</th>
<th>CONTACT</th>
</tr>
</thead>
</table>
| Sausalito     | Engineer/Paramedic Larry Yoell  
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| Tam Valley    | Fire Captain Bill Schardt  
                 Mill Valley Fire Dept.  
                 415-389-4130  
                 bschardt@cityofmillvalley.org |
| Reedland Woods| Fire Captain Michael St. John  
                 Mill Valley Fire Dept.  
                 415-389-4130  
                 mstjohn@cityofmillvalley.org |
| Homestead Valley | Laurie Gordon  
                 Tiburon Office of Emergency Services  
                 415-789-2800  
                 lgordon@ci.tiburon.ca.us |
| Floating Homes (Sausalito) | Battalion Chief Bill Roberts  
                 Marin County Fire Dept.  
                 415-499-6717  
                 broberts@co.marin.ca.us |

-more on next page-
<table>
<thead>
<tr>
<th>CENTRAL MARIN</th>
<th>CONTACT</th>
</tr>
</thead>
</table>
| Corte Madera  | Firefighter Kevin Rose  
Corte Madera Fire Dept.  
415-927-5077  
krose@ci.corte-madera.ca.us |
| Larkspur      | Firefighter Tom Timmer  
Larkspur Fire Dept.  
415-927-5077  
ttimmer@larkspurfire.net |
| Greenbrae     | Firefighter Dan Trimble  
Kentfield Fire Protection District  
415-453-7464  
dtrimble@kentfieldfire.org |
| Kentfield     | Firefighter Justin Hanson  
Ross Fire Dept.  
415-453-1453  
jhanson@townofross.org |
| Ross          | Fire Captain Craig Carroll  
Ross Valley Fire Dept.  
415-258-4686  
ccarroll@rossvalleyfire.org |
| Fairfax       | Fire Captain Craig Carroll  
Ross Valley Fire Dept.  
415-258-4686  
ccarroll@rossvalleyfire.org |
| San Anselmo   | Fire Captain Craig Carroll  
Ross Valley Fire Dept.  
415-258-4686  
ccarroll@rossvalleyfire.org |
| Sleepy Hollow | Fire Captain Craig Carroll  
Ross Valley Fire Dept.  
415-258-4686  
ccarroll@rossvalleyfire.org |

<table>
<thead>
<tr>
<th>SAN RAFAEL</th>
<th>CONTACT</th>
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</thead>
</table>
| San Rafael | Angela Del Ponte  
San Rafael Office of Emergency Services  
415-458-5002  
angela.delponte@cityofsanrafael.org |
| Marinwood  | Sandra Wargo  
Novato Fire Protection District  
415-878-2690  
swargo@novatofire.org |
| Santa Venetia | Sandra Wargo  
Novato Fire Protection District  
415-878-2690  
swargo@novatofire.org |

<table>
<thead>
<tr>
<th>NOVATO</th>
<th>CONTACT</th>
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</thead>
</table>
| Novato | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |

<table>
<thead>
<tr>
<th>WEST MARIN</th>
<th>CONTACT</th>
</tr>
</thead>
</table>
| Bolinas    | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| Inverness  | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| Muir Beach | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| Nicasio    | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| Point Reyes| Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| San Geronimo Valley | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| Stinson Beach | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
| Tomales    | Libby Colman  
West Marin Disaster Council  
415-663-9450  
liblee@earthlink.net |
The following is a summary of all the forms that are provided to you in this appendix.

<table>
<thead>
<tr>
<th><strong>CERT Member Sign-In Sheet</strong></th>
<th>Used by Logistics, this form is used to track all CERT team members and spontaneous volunteers for accountability.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory Control</strong></td>
<td>This form is used by Logistics to track supplies.</td>
</tr>
<tr>
<td><strong>Team Member Assignments</strong></td>
<td>Used by Operations, this form is for keeping track of team members and their assignments.</td>
</tr>
<tr>
<td><strong>Damage Assessment</strong></td>
<td>Used by Operations, this form is for assessing damage to structures, fires, hazards, injuries, and roads status.</td>
</tr>
<tr>
<td><strong>Patient Treatment Record</strong></td>
<td>This form is used in the Medical Treatment Area to keep track of patient information.</td>
</tr>
<tr>
<td><strong>Situation Summary</strong></td>
<td>Completed by Plans for use by the Team Leader. This information will be communicated to the nearest Community Center.</td>
</tr>
<tr>
<td><strong>Activity Log</strong></td>
<td>For use by everyone, this form will be used to create an incident archive of activities, event notes, and actions taken.</td>
</tr>
</tbody>
</table>

These forms that are provided here are examples of forms that can be used. You should first check with your local agency to determine which forms they are using, if any.
CERT Member Sign-in Sheet

<table>
<thead>
<tr>
<th>Date:</th>
<th>Person Reporting:</th>
<th>Page #:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PRINT NAME AND TIME IN</th>
<th>Skill Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINT NAME AND TIME IN</td>
<td>RANK IN ORDER FROM 1-5 OR PRINT “NO”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>FIRE</th>
<th>MEDICAL</th>
<th>SAR</th>
<th>TRANSPORT</th>
<th>DOCUMENT</th>
<th>Other</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

FOR USE BY LOGISTICS

Have people sign in and mark their special skills. This information will be used to create team assignments with Operations and track who is participating. Record time out when completed with CERT response.
## Inventory Control

<table>
<thead>
<tr>
<th>Time Checked Out</th>
<th>Time Checked In</th>
<th>Item</th>
<th>Qty</th>
<th>Assigned to</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
# Team Member Assignments

<table>
<thead>
<tr>
<th>DATE:</th>
<th>Person Reporting:</th>
<th>Page #:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Team Name / Names</th>
<th>TIME OUT</th>
<th>TIME IN</th>
<th>FIRE</th>
<th>MEDICAL</th>
<th>SAR</th>
<th>TRANSPORT</th>
<th>DOCUMENT</th>
<th>Other</th>
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</tbody>
</table>
# Damage Assessment

<table>
<thead>
<tr>
<th>Date:</th>
<th>Person Reporting:</th>
<th>Page #:</th>
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<tbody>
<tr>
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</table>

## Damage Types
- Burning
- Out
- Gas Leak
- Water Leak
- Electric
- Chemical
- Damage
- Collapsed
- Injured
- Trapped
- Deceased
- Access
- No Access
- Assignment Completed

<table>
<thead>
<tr>
<th>Time</th>
<th>Address</th>
<th>Fires</th>
<th>Hazards</th>
<th>Structures</th>
<th>People</th>
<th>Roads</th>
<th>/ X</th>
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</table>

FOR USE BY OPERATIONS (* for structure damage: H = Heavy, M = Moderate, L = Light)
# Patient Treatment Record

<table>
<thead>
<tr>
<th>Time In</th>
<th>Name or Description</th>
<th>Triage Status</th>
<th>Triage Tag #</th>
<th>Patient Condition</th>
<th>Moved To</th>
<th>Time Out</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**FOR MEDICAL TREATMENT AREA**
Document each person brought to the treatment area. If victim cannot give name, write a brief description (approx. age, hair color, sex, etc.)

Triage tag color: red=immediate, yellow=delayed, green=minor, black=deceased
## Situation Summary

<table>
<thead>
<tr>
<th>Date:</th>
<th>Time:</th>
<th>Person Reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CERT Neighborhood:</th>
<th># of Homes:</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

### Description, location, & magnitude of emergency:

<table>
<thead>
<tr>
<th>MEDICAL STATUS</th>
<th>TRIAGE STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of injured:</td>
<td>Minor:</td>
</tr>
<tr>
<td>Number missing:</td>
<td>Delayed:</td>
</tr>
<tr>
<td>Number deceased:</td>
<td>Immediate:</td>
</tr>
</tbody>
</table>

### Actions Being Taken:

### Assistance Needed:

---

**COMPLETED BY PLANS FOR USE BY THE TEAM LEADER**

This information should be communicated to the nearest Community Center which will be communicated to the City's Emergency Operations Center.
## Activity Log

<table>
<thead>
<tr>
<th>Time</th>
<th>Events / Notes</th>
<th>Actions Taken</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

FOR USE BY EVERYONE
Examples
The following listed templates and CERT Response and Operations Forms are completed with fictitious event information to display proper usage.

<table>
<thead>
<tr>
<th>CERT Member Sign-In Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Control</td>
</tr>
<tr>
<td>Team Member Assignments</td>
</tr>
<tr>
<td>Damage Assessment</td>
</tr>
<tr>
<td>Patient Treatment Record</td>
</tr>
<tr>
<td>Situation Summary</td>
</tr>
<tr>
<td>Activity Log</td>
</tr>
</tbody>
</table>
## EXAMPLE - CERT Member Sign-in Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>FIRE</th>
<th>MEDICAL</th>
<th>SAR</th>
<th>TRANSPORT</th>
<th>DOCUMENT</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim</td>
<td>0800</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>0800</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jose</td>
<td>0811</td>
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</tr>
<tr>
<td>Johnnie</td>
<td>0815</td>
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</tr>
<tr>
<td>Robert</td>
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<td>2</td>
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<td></td>
</tr>
<tr>
<td>Barbara</td>
<td>0855</td>
<td>no</td>
<td>1</td>
<td>no</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FOR USE BY LOGISTICS**

Have people sign in and mark their special skills. This information will be used to create team assignments with Operations and track who is participating. Record time out when completed with CERT response.
## EXAMPLE - Inventory Control

<table>
<thead>
<tr>
<th>Time Checked Out</th>
<th>Time Checked In</th>
<th>Item</th>
<th>Qty</th>
<th>Assigned to</th>
</tr>
</thead>
<tbody>
<tr>
<td>0823</td>
<td></td>
<td>Fire extinguisher</td>
<td>1</td>
<td>George and Cindy</td>
</tr>
<tr>
<td>0826</td>
<td></td>
<td>Pry bars</td>
<td>2</td>
<td>Hugo</td>
</tr>
<tr>
<td>0835</td>
<td></td>
<td>Family talk radios</td>
<td>2</td>
<td>Peter and Betsy</td>
</tr>
</tbody>
</table>

FOR USE BY LOGISTICS
## EXAMPLE - Team Member Assignments

<table>
<thead>
<tr>
<th>Team Name / Names</th>
<th>Time Out</th>
<th>Time In</th>
<th>Fire</th>
<th>Medical</th>
<th>SAR</th>
<th>Transport</th>
<th>Document</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ken and Barbara</td>
<td>0830</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>George and Cindy</td>
<td>0845</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date: 12/02/08  
Person Reporting: Randy  
Page #: 1

FOR USE BY OPERATIONS

Marin County CERT  
Student Training Manual  
Appendices  
EXAMPLE FORMS
EXAMPLE - Damage Assessment

<table>
<thead>
<tr>
<th>Time</th>
<th>Address</th>
<th>Fires</th>
<th>Hazards</th>
<th>Structures</th>
<th>People</th>
<th>Roads</th>
<th>/ X</th>
</tr>
</thead>
<tbody>
<tr>
<td>0915</td>
<td>107 Pilsung</td>
<td>x</td>
<td></td>
<td>L</td>
<td>0</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>0927</td>
<td>105 Pilsung</td>
<td>x</td>
<td>x</td>
<td>M</td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

FOR USE BY OPERATIONS ( * for structure damage: H = Heavy, M = Moderate, L = Light)
EXAMPLE - Patient Treatment Record

<table>
<thead>
<tr>
<th>Date: 12/02/08</th>
<th>Person Reporting: Barbara</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time In</td>
<td>Name or Description</td>
</tr>
<tr>
<td>0930</td>
<td>Rachel Green</td>
</tr>
<tr>
<td>0935</td>
<td>Phoebe Buffet</td>
</tr>
</tbody>
</table>

FOR MEDICAL TREATMENT AREA
Document each person brought to the treatment area. If victim cannot give name, write a brief description (approx. age, hair color, sex, etc.)
Triage tag color: red=immediate, yellow=delayed, green=minor, black=deceased
EXAMPLE - Situation Summary

<table>
<thead>
<tr>
<th>Date: 12/02/08</th>
<th>Time: 1030</th>
<th>Person Reporting: Keith</th>
</tr>
</thead>
</table>

**CERT Neighborhood: West End**  
**# of Homes:** 15

**Description, location, & magnitude of emergency:** Major earthquake in the area has left many homes damaged and there were several small fires. There is not power, water, or telephone service in the area and cell phone use is limited. There is a downed power line at the cross Pilsung and Shim Jun.

**MEDICAL STATUS**  
Number of injured: 5  
Number missing: 0  
Number deceased: 0

**TRIAGE STATUS**  
Minor: 3  
Delayed: 1  
Immediate: 1

**Actions Being Taken:** Fire teams have extinguished fires at 100 Pilsung and 105 Pilsung. Area near downed power line has been secured and CERT members are monitoring area. Continued medical care is being provided for those injured and shelter is being established with tents and other camping supplies at the command post in Pilsung Park.

**Assistance Needed:** In need of advanced medical treatment for one immediate patient or transport to a hospital. Will need longer term shelter as weather worsens.

**COMPLETED BY PLANS FOR USE BY THE TEAM LEADER**

This information should be communicated to the nearest Community Center which will be communicated to the City’s Emergency Operations Center.
**EXAMPLE - Activity Log**

<table>
<thead>
<tr>
<th>Time</th>
<th>Events / Notes</th>
<th>Actions Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>0815</td>
<td>Resident reported fire at 105 Pilsung</td>
<td>Sent fire team George and Cindy</td>
</tr>
<tr>
<td>0820</td>
<td>Two residents arrived at CP with injuries.</td>
<td>Assessed by medical team - minor</td>
</tr>
<tr>
<td>0830</td>
<td>Jack reported downed power line at Shim Jun / Pilsung</td>
<td>Sent John and Mary to secure area</td>
</tr>
<tr>
<td>0830</td>
<td>Fire at 105 extinguished – all clear</td>
<td>Fire team reassigned</td>
</tr>
</tbody>
</table>

FOR USE BY EVERYONE