

Module 4: Disaster Medical Operations

Lesson 14: Establishing Medical Treatment Areas

Self-Study Guide

Lesson Overview

Lesson Purpose This lesson discusses important considerations in setting up, staffing, and running medical treatment areas.

Lesson Objectives After completing this lesson, you should be able to:

- Identify factors to consider when establishing medical treatment areas.
- Describe public health measures required at a disaster site.

Estimated Time 30 minutes

Contents This lesson includes the following sections:

- Lesson Overview
- The Medical Treatment Area
- Personnel and Documentation
- Public Health Considerations
- Lesson Summary

Lesson Overview

Lesson Overview

Disaster medical operations is divided into four major components:

- Triage
- Transport
- Treatment
- Morgue

Triage

The first component, **triage**, which you learned about in the previous lesson, is the initial sorting of victims based on the severity of their injuries. Triage begins as part of search and rescue, wherever victims are found.

Transport

The second component, **transport**, is the movement of victims from triage to the treatment area. If professional help will be delayed, CERT members may transport victims to the treatment area.

Treatment

The third component, **treatment**, where victims receive emergency medical services, is divided into two areas: Immediate care and delayed care.

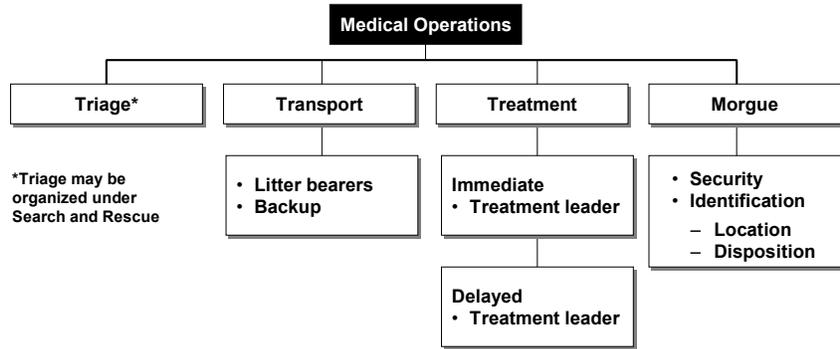
Morgue

The fourth component, the **morgue**, is a temporary holding area for victims who have died.

This lesson focuses primarily on treatment areas. You'll learn about important factors to consider in establishing treatment areas.

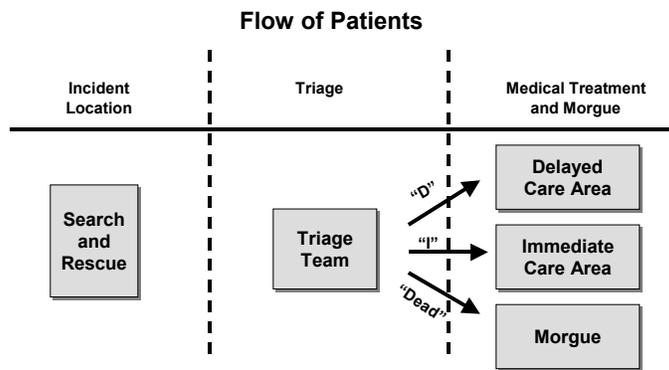
Organization

The chart below illustrates how the four medical operations components fit together organizationally.



Patient Flow

The diagram below illustrates how patients move through the medical operations components.



Knowledge Review



Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.

1. _____ is responsible for getting victims from the incident site to the medical treatment area.
 - Logistics
 - Transport
 - Triage
 - Public health department

2. The medical treatment area is divided into:
 - Triage and awaiting triage.
 - Injured, uninjured, and unclassified.
 - Immediate care and delayed care.
 - Triage, transport, treatment, and morgue.

Knowledge Review: Answer Key



Instructions: Compare your answers to the correct ones shown below.

1. _____ is responsible for getting victims from the incident site to the medical treatment area.

- Logistics
- Transport**
- Triage
- Public health department

Transport is responsible for getting victims from the incident site to the medical treatment area. Transport includes litter bearers and backup personnel.

2. The medical treatment area is divided into:

- Triage and awaiting triage.
- Injured, uninjured, and unclassified.
- Immediate care and delayed care.**
- Triage, transport, treatment, and morgue

The medical treatment area is divided into **immediate care and delayed care**, based on the severity of injuries as determined during triage. A patient may move from one area to another if his or her condition changes or if more information becomes known.

The Medical Treatment Area

The medical treatment area is the location where victims receive the most advanced medical care available at the scene.

If professional help is not available following a disaster, CERT medical operations personnel will establish the medical treatment area as soon as injured victims are confirmed. This includes:

- Selecting a site.
- Setting up treatment areas.

Selecting a Site

The medical treatment area site should be:

- In a safe area, free of hazards and debris.
- Close to the hazard zone.
- Upwind and uphill from the hazard zone.
- Accessible by transportation vehicles such as ambulances, trucks, and helicopters.
- Expandable.

If Upwind Isn't Possible . . .

In an area near a large body of water, which is subject to onshore or offshore winds, it may not be possible to establish an upwind treatment site.

In this type of location, the treatment area should be established in an area close to the hazard zone and perpendicular to the wind direction.

Setting Up and Marking Areas

Three clearly marked medical operations areas should be established:

- Immediate care area ("I")
- Delayed care area ("D")
- Morgue ("Dead")

Each area should be marked with a sign to match the tagging of victims: "I," "D," and "Dead." The entire area should also be protected and clearly delineated using a ground cover or tarp.

This marking system will make it easy for transporters to deliver tagged victims to the correct location.

The Medical Treatment Area

Placement of Medical Treatment Areas

The immediate and delayed care areas 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 stored in a central location.
- Easy transfer of patients whose status has changed.

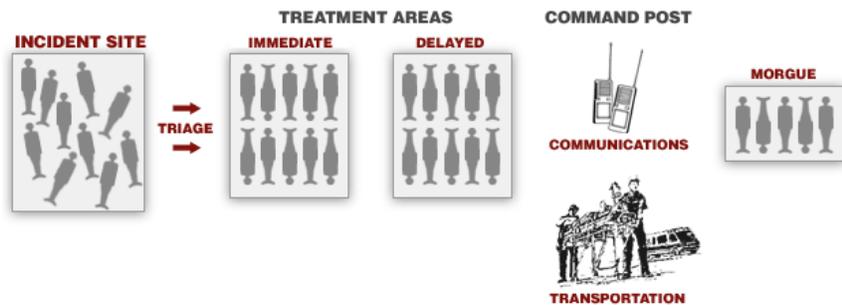
Placement of the Morgue

In locating the morgue, keep the following guidelines in mind:

- The morgue site should be located away from the treatment areas.
- The morgue should not be visible to patients in the treatment areas.
- The morgue must be kept secure.

Medical Operations Layout

The diagram below depicts one possible layout of the medical operations area.

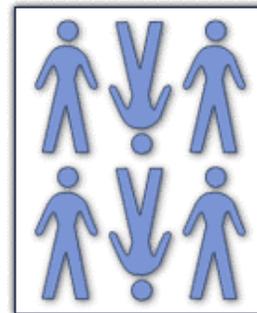


Treatment Area Layout

Within the immediate and delayed treatment areas, patients should be positioned:

- In rows.
- Head-to-toe.
- 2 or 3 feet apart.

This configuration will provide effective use of space and available personnel. A worker who finishes one head-to-toe assessment is in position—simply by turning—to begin at the next patient's head.



Knowledge Review



Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.

1. The medical treatment area should be established:
 - After triage has been completed.
 - As soon as it is confirmed that there are injured victims.
 - When there are too many victims to be treated at the incident site.

2. In locating the medical treatment area, what characteristics should the site have? Click on ALL that apply.
 - As far from the incident site as possible
 - Close to the hazard zone
 - Upwind and downhill from the hazard zone
 - At the incident command post
 - Upwind and uphill from the hazard zone
 - Accessible by transportation vehicles
 - Where there is an unlimited supply of running water
 - In an area that is free of hazards and debris
 - Expandable

3. In the treatment areas, victims should be arranged, in rows:
 - Head-to-head.
 - By relative severity of injury.
 - Approximately 6 inches apart.
 - Head-to-toe.

4. The morgue should be located:
 - Adjacent to the immediate care area.
 - Between the treatment areas and the incident site.
 - Out of view of the treatment areas.
 - Adjacent to the delayed care area.

Knowledge Review: Answer Key



Instructions: Compare your answers to the correct ones shown below.

1. The medical treatment area should be established:

- After triage has been completed.
- As soon as it is confirmed that there are injured victims.**
- When there are too many victims to be treated at the incident site.

The medical treatment area should be established **as soon as it is confirmed that there are injured victims**. Time is critical in an emergency, and the treatment areas must be ready to begin treatment as soon as the first patient arrives.

2. In locating the medical treatment area, what characteristics should the site have? Click on ALL that apply.

- As far from the incident site as possible
- Close to the hazard zone**
- Upwind and downhill from the hazard zone
- At the incident command post
- Upwind and uphill from the hazard zone**
- Accessible by transportation vehicles**
- Where there is an unlimited supply of running water
- In an area that is free of hazards and debris**
- Expandable**

The site chosen for the medical treatment area should have the following characteristics:

- Close to the hazard zone
- Upwind and uphill from the hazard zone
- Accessible by transportation vehicles
- In an area that is free of hazards and debris
- Expandable

Knowledge Review: Answer Key (Continued)

3. In the treatment areas, victims should be arranged, in rows:

- Head-to-head.
- By relative severity of injury.
- Approximately 6 inches apart.
- Head-to-toe.**

In the treatment area, victims should be arranged in rows head-to-toe. This arrangement is efficient because as a worker finishes one head-to-toe assessment, he or she is already positioned at the next patient's head.

4. The morgue should be located:

- Adjacent to the immediate care area.
- Between the treatment areas and the incident site.
- Out of view of the treatment areas.**
- Adjacent to the delayed care area.

The morgue should be located out of view of the treatment areas. The morgue must be kept secure, and a system should be in place for thorough documentation of all victims.

Organizational Issues

To ensure that medical operations run efficiently, it is important that organizational planning occurs before disaster strikes.

Planning should address:

- Personnel assignments.
- Provision of area markings.
- Documentation.

Personnel Assignments

The CERT team will assign leaders to maintain control in each of the medical treatment areas.

In each treatment area, it is the responsibility of the treatment leader to:

- Ensure orderly victim placement.
- Direct assistants in conducting patient assessments.

Area Markings

The treatment areas and morgue must be clearly marked with:

- Signs to identify areas for victims tagged "I," "D," and "Dead." Then volunteer transporters can be told to take the "I" victims to the area with the "I" sign.
- Ground covers or tarps that clearly demarcate and protect the areas.

These materials must be prepared in advance so that they are available for immediate use.

Documentation

Thorough documentation of victims in the treatment areas and morgue is a must.

Documentation provides a valuable source of information for:

- Estimating the number of casualties by degree of severity.
- Effective deployment of resources.
- Tracking individual victims.

Information that should be documented for each victim include:

- Available identifying information.
- Description (age, sex, body build, height, weight).
- Clothing.
- Injuries.
- Treatment.
- Transfer location.

Knowledge Review



Instructions: Select the correct answers. When you are finished, turn to the next page to check your answers.

1. It is the responsibility of medical treatment area leaders to:
 - Choose the best site for the medical treatment area.
 - Oversee arrangement and assessment of victims.
 - Conduct all patient evaluations.
 - Manage the transport of victims into the treatment area.

2. Information should be documented for:
 - Victims who require immediate care.
 - Victims who require delayed care.
 - All victims except those who died without treatment.
 - All victims.

Knowledge Review: Answer Key



Instructions: Compare your answers to the correct ones shown below.

1. It is the responsibility of medical treatment area leaders to:
 - Choose the best site for the medical treatment area.
 - Oversee arrangement and assessment of victims.**
 - Conduct all patient evaluations.
 - Manage the transport of victims into the treatment area.

It is the responsibility of medical treatment area leaders to **oversee arrangement and assessment of victims**. The leader directs assistants in conducting head-to-toe assessments.

2. Information should be documented for:
 - Victims who require immediate care.
 - Victims who require delayed care.
 - All victims except those who died without treatment.
 - All victims.**

Information should be documented for all **victims**. This information will assist in tracking victims and effectively deploying response resources.

Public Health Considerations

When disaster victims are grouped together for treatment, public health becomes a concern.

To protect the public health and avoid the spread of disease, the following measures must be taken:

- Hygiene
- Sanitation
- Water purification (if necessary)

Maintaining Hygiene

Proper hygiene is crucial wherever medical operations take place—even under makeshift conditions.

Below are important measures that you can take to maintain hygiene. You should practice the following measures during every drill and exercise.

- Wash hands frequently.
- Wear sterile gloves.
- Wear a mask and goggles.
- Keep bandages and dressings sterile.
- Avoid contact with body fluids.

Washing Hands

- Wash hands frequently.
- Use soap and water.
- Hand-washing should be thorough—at least 12 to 15 seconds.
- Use an antibacterial scrub, if possible.

Sterile Gloves

- Wear sterile gloves (latex or nonlatex) at all times.
- Change or disinfect gloves after examining and/or treating each patient.
- Under field conditions, you can use rubber gloves that are sterilized between victims using diluted bleach (1 part bleach to 10 parts water).

Mask and Goggles

- Wear a mask. If possible, choose a dust mask that is rated "N95." This type of mask will filter particles as small as 3 microns.
- Wear goggles to protect the eyes from splashed and airborne contaminants.

Bandages and Dressings

All open wounds must be covered to help prevent infection and the spread of disease.

- Keep bandages and dressings sterile.
- Do not remove the overwrap from bandages and dressings until you are ready to use them.
- After opening, use the entire bandage or dressing, if possible.

Body Fluids

- Avoid contact with body fluids. Gloves, mask, and goggles provide an important barrier.
- If you come in contact with body fluids, thoroughly wash contaminated areas as soon as possible.
- Use soap and water or diluted bleach.

Maintaining Sanitation

Proper sanitation is a must in the medical treatment area—even during exercises. Proper sanitation helps prevent infection and the spread of disease.

To maintain sanitary conditions, medical personnel should:

- Put waste products such as latex gloves and dressings in plastic bags. Tie off the bags and label them "medical waste."
- Keep medical waste separate from other trash, and dispose of it as hazardous waste.
- Bury human waste.

Using Purified Water

Rescuers should not put anything on wounds other than purified water. Using other solutions, such as hydrogen peroxide, on wounds must be the decision of trained medical personnel.

Because potable water supplies are often in short supply or unavailable in an extreme emergency, it may become necessary to purify water before using it.

Methods for Purifying Water

When potable water is unavailable, water for drinking, cooking, and medical use should be purified using one of the following methods:

Heat Method

- Heat water to a rolling boil.
- Boil for 1 minute.

Water Purification Tablets

- Iodine or chlorine tablets can be used to kill waterborne pathogens.
- If using water purification tablets, follow the product directions provided with the tablets.

Bleach

- Use unscented liquid bleach.
- Add 6 drops or 1/8 teaspoon of bleach for each gallon of water.
- Let the bleach/water solution stand for 30 minutes.
- If the solution does not smell or taste of bleach, add another 6 drops of bleach and let the solution stand for 15 minutes before using.

Knowledge Review



Instructions: Select the correct answers. Click on ALL that apply. When you are finished, turn to the next page to check your answers.

There is heavy flooding in the wake of a hurricane. Widespread power outages have occurred and the water supply has been contaminated. Many homes have been destroyed, and injuries are numerous. In the delayed area, Victim 1 is not responsive to voice commands. Victim 2 has a broken arm and dislocated shoulder.

1. In treating these victims, what techniques can you use to maintain hygiene?
 - Wash your hands frequently.
 - Wear latex gloves and change or disinfect them after each patient.
 - Wear a mask and goggles.
 - Avoid contact with body fluids (e.g., vomit).

2. In treating these victims, what can you do to maintain sanitation?
 - Dispose of bacterial sources in plastic bags, tie them off, and label them "medical waste."
 - Dump all medical waste into a dumpster after the incident.
 - Pour a water/bleach solution over all bandages that have been removed from victims.
 - Physically separate Victim 1 from Victim 2.

3. A victim in the immediate treatment area has a head laceration that needs to be irrigated to remove dirt from the wound. What precautions should you take in treating the wound?
 - Use only purified water on the wound.
 - Wear gloves, goggles, and a mask to avoid contact with the blood.
 - Place all bandages and latex gloves in the nearest trash can when you finish.
 - Apply a pressure bandage directly on the wound.

Knowledge Review: Answer Key



Instructions: Compare your answers to the correct ones shown below.

There is heavy flooding in the wake of a hurricane. Widespread power outages have occurred and the water supply has been contaminated. Many homes have been destroyed, and injuries are numerous. In the delayed area, Victim 1 is not responsive to voice commands. Victim 2 has a broken arm and dislocated shoulder.

1. In treating these victims, what techniques can you use to maintain hygiene?

- Wash your hands frequently.
- Wear latex gloves and change or disinfect them after each patient.**
- Wear a mask and goggles.**
- Avoid contact with body fluids (e.g., vomit).**

You should wear latex gloves and change or disinfect them after each patient, wear a mask and goggles, and avoid contact with body fluids.

2. In treating these victims, what can you do to maintain sanitation?

- Dispose of bacterial sources in plastic bags, tie them off, and label them "medical waste."**
- Dump all medical waste into a dumpster after the incident.
- Pour a water/bleach solution over all bandages that have been removed from victims.
- Physically separate Victim 1 from Victim 2.

The best way to maintain sanitation in this situation is to dispose of gloves, dressing, and other bacterial sources by placing them in plastic bags, tying them off, and labeling them "medical waste." This waste must then be disposed of as hazardous waste. They cannot be disposed of with other trash.

Knowledge Review: Answer Key (Continued)

3. A victim in the immediate treatment area has a head laceration that needs to be irrigated to remove dirt from the wound. What precautions should you take in treating the wound?

- Use only purified water on the wound.**
- Wear gloves, goggles, and a mask to avoid contact with the blood.**
- Place all bandages and latex gloves in the nearest trash can when you finish.
- Apply a pressure bandage directly on the wound.

To reduce the risk of infection, you should use only purified water on the wound. To protect yourself from contact with the blood, you should wear gloves, goggles, and a mask.

Never dispose of bandages, gloves, or other potential source of bacteria with other trash. These items must be labeled as "medical waste" and disposed of as hazardous waste.

To control bleeding, dress the wound and reapply a pressure bandage.

Lesson Summary

Lesson Summary

In this lesson, you learned that:

- Medical treatment areas should be close to and upwind and uphill from the hazard zone; accessible by transportation vehicles; expandable; and clearly marked.
- Personnel, equipment, and documentation should be carefully planned in advance.
- Public health measures should include proper hygiene, sanitation, and water purification.

Next Lesson

You have completed this lesson. You are now ready to begin Lesson 15: Patient Assessment and Treatment.