

2014

# Medical Emergencies



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## DISCLAIMER

The following safety related program is for informational purposes only. The SORT committee hopes that each participating district will look at this program and discuss how it compares to the district's own practices. This program is NOT a complete safety program, but intended as guidelines. There is no guarantee that following a given program will eliminate or substantially reduce the risk of claim or injuries. It is expected that member districts will consider this program and adapt or modify it to fit the district's particular needs and circumstances.

# Medical Emergencies

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## Purpose / Scope

This program is designed to address three areas of medical emergencies: first aid, poisoning and temperature related illnesses. While not all aspects of this program are regulated procedures, the information is helpful in addressing some of the common emergencies employees face in the scope of their work.

This is intended to be a universal document that describes precautions and procedures that must be followed in all cases. Field management and staff will develop Standard Operating Procedures for work at specific sites and for specific work tasks, which will take into account all safety issues and will define the most effective methods of accomplishing the work objectives safely and efficiently.

NOTE: Previous editions of this program heat related emergencies (heat & cold) were included. Since Washington State L&I has enacted new standards for Heat Related Illness these programs are now stand alone SORT safety programs

## Exemptions / Exclusions

None

## Responsibilities

District

Designated Person or Safety Program Coordinator

Managers

Employees

## Guidelines/Rules

### First Aid

Districts recognize the need for their employees to be prepared in the event of an accident or incident in which first aid is required. There are two options districts can choose from when it comes to first aid procedures. These are based on WAC 296-800-150.

#### OPTION 1

Make sure first-aid trained employees are in your workplace to help your employees if they become hurt or ill on the job by doing the following:

1. Make sure that:
  - Each person in charge of employees has first-aid training;

**OR**

  - Another person with first-aid training is present or available to your employees, whenever you have 2 or more employees present.
2. Adequately post emergency telephone numbers in your workplace.

#### OPTION 2

Develop and maintain a written first-aid response plan for your workplace. If you choose this option, you must do all of the following:

1. Determine how many, if any, employees should be trained in first-aid, based on the following factors:
  - What type(s) of occupational hazards are present in your workplace?
  - How likely is it that a workplace injury or illness will occur?
  - How serious are the occupational hazards in your workplace?
  - How remote is your workplace?
  - How complex is your worksite in terms of size, design, etc.?
  - What medical emergencies have occurred at your workplace in the past?
  - How far away and how long does it take to get to emergency medical services?
2. Make sure your first-aid response plan:

- Fits your work location, type of work, and environmental conditions.
- Identifies the available emergency medical services and access numbers and where they are posted.
- Describes the type of first-aid training employees receive, if applicable.
- Identifies the location(s) of first-aid supplies and/or first-aid stations.
- Identifies the contents of first-aid kits.
- Describes how first aid supplies or kits will be inspected and maintained.
- Describes how injured or ill employees will have access to first-aid trained employees.

It is recommended that the Safety Committee check first aid kits to make sure they are properly maintained and stocked. First aid kits should be checked quarterly and restocked after each use.

Posters listing emergency numbers and procedures need to be strategically located, such as on the first aid kits and beside designated telephones.

Note: The First Aid Response Plan worksheet located in the Appendix can help you make sure your plan is complete.

### **First Aid Supplies**

1. Make sure first-aid supplies are readily available.
2. Make sure first-aid supplies at your workplace are appropriate to:
  - Your occupational setting
  - The response time of your emergency medical services
3. Make sure that first-aid supplies are:
  - Easily accessible to all your employees
  - Stored in containers that protect them from damage, deterioration, or contamination
  - Containers must be clearly marked, not locked, and may be sealed
  - Able to be moved to the location of an injured or acutely ill employee

*Note: A first-aid station with at least one first-aid trained employee available is required if there are 50 or more employees per shift at one location. Consult WAC 296-800-15030 for details on this requirement.*

### **Classification of First Aid Kits**

Under ANSI standard, Z308.1-2003, kits are divided into three different categories or classifications. Kits must also meet the performance and testing requirements set by the standard.

#### ***Type I:***

Intended for use in stationary, indoor applications where kit contents have minimal potential for damage. These kits are not intended to be portable and should have a means for mounting in a fixed position. Some applications for Type I first-aid kits are: general indoor use, office use or in a light manufacturing facility. First aid cabinets would fall into this classification.

#### ***Type II:***

Intended for use in portable indoor applications. Kit contents should have minimal potential for damage. These kits should be equipped with carrying handle(s). Some applications for Type II first-aid kits are general indoor use, office or manufacturing environments.

### **Type III:**

Intended for portable use in mobile industries and/or outdoor applications. Kits should be moisture resistant, equipped with a carrying handle, have the means for being mounted in a fixed position, and should also be corrosion resistant. Type III kits must meet specific performance requirements. Typical applications for Type III first aid kits would be in district vehicles or at construction jobs.

**Table 1 Basic Fill Contents for Type I, II and III Kits**

<b>Item &amp; Minimum Size or Volume</b>	<b>Minimum Quantity</b>
Absorbent Compress, 32 sq. inch (No side smaller than 4 inch)	1
Adhesive bandages, 1 x 3 inch	16
Adhesive tape, 3/8" x 5 yd.	1
Antiseptic, .5g application	10
Burn Treatment, .9g application	6
Medical exam gloves	2 pair
Sterile pad, 3 x 3 inch	4
Triangular bandage, 40 x 40 x 56 inch	1

*Note: First-aid kits from your local retailer or safety supplier should be adequate for most nonindustrial employers.*

## **Emergency Washing Facilities**

### **Emergency Shower**

An emergency shower is required when there is potential for major portions of an employee's body to contact corrosives, strong irritants, or toxic chemicals. The shower must deliver water that cascades over the user's entire body at a minimum rate of 20 gallons (75 liters) per minute for fifteen minutes or more.

### **Emergency Eyewash**

An emergency eyewash station is required when there is potential for an employee's eyes to be exposed to corrosives, strong irritants, or toxic chemicals. It must irrigate and flush both eyes simultaneously while the user holds their eyes open. It must have an on-off valve that activates in one second or less and remains on without user assistance until intentionally turned off. It must deliver at least 0.4 gallons (1.5 liters) of water per minute for fifteen minutes or more.

Make sure emergency washing facilities:

- Are located so that it takes no more than ten seconds to reach
- Are kept free of obstacles blocking their use
- Function correctly
- Provide the quality and quantity of water that is satisfactory for emergency washing purposes

Training in the location and use of your emergency washing facilities is required under the employer chemical hazard communication rule, WAC 296-800-170, and the accident prevention program rule, WAC 296-800-140.

All emergency washing facilities using "not fit for drinking" (non-potable) water must have signs stating the water is "not fit for drinking." See WAC 296-800-23010.

*Note: You can determine whether chemicals in your workplace require emergency washing facilities by looking at the material safety data sheet (MSDS) or similar documents. The MSDS contains information about first-aid requirements and emergency flushing of skin or eyes.*

*Note: MSDS is being transitioned to the Globally Harmonized System (GHS) between 2014 and 2015. A MSDS will be called an SDS under this new program. Please refer to SORT's Hazard Communication program for more information.*

Inspect and activate your emergency washing facilities

Make sure all plumbed emergency washing facilities are inspected once a year to make sure they function correctly.

Inspections should include:

- Examination of the piping
- Making sure that water is available at the appropriate temperature and quality
- Activation to check that the valves and other hardware work properly
- Checking the water flow rate

You must:

1. Make sure plumbed emergency eyewashes and hand-held drench hoses are activated weekly to check the proper functioning of the valves, hardware and availability of water.
2. Make sure all self-contained eyewash equipment and personal eyewash units are inspected and maintained according to manufacturer's instructions.
3. Inspections to check proper operation must be done once a year.
4. Sealed personal eyewashes must be replaced after the manufacturer's expiration date.

*Note: Most manufacturers recommend replacing fluid in open self-contained eyewashes every six months. The period for sealed containers is typically two years.*

Make sure supplemental flushing equipment provides sufficient water. Supplemental flushing equipment cannot be used in place of required emergency showers or eyewashes.

Drench Hoses

Make sure hand-held drench hoses deliver at least 3.0 gallons (11.4 liters) of water per minute for fifteen minutes or more.

A drench hose is useful when:

- The spill is small and does not require an emergency shower
- Used with a shower for local rinsing, particularly on the lower extremities

Make sure personal eyewash equipment delivers only clean water or other medically approved eye flushing solutions.

## Poisoning

### Insect and Animal Bites

Bites or stings from bees, spiders, snakes, domestic or wild animals can cause serious illness or death. Any bite of a domestic or wild animal can cause infections and soft tissue damage. The seriousness of the bite depends on several factors. A person's age, health, immunity to toxins and location of the sting on the body determine the severity of the injury. The number of bites, toxicity of the poison and type of attack also play a factor. In all cases, immediate medical attention is needed.

### Prevention

There are some precautions you can take to minimize the risk of a bit or sting:

1. Dress in light colored, long sleeved shirts and pants. Always wear boots and keep your pants tucked into your boots and your shirt tucked into your pants. Wearing light colors helps to repel flying insects and it enables you to see ticks and other insects. Avoid certain colors: blue attracts mosquitoes; red, white, and yellow draws bees.
2. If you have a known allergy to insect bites or stings, keep the appropriate medication on hand (such as an epinephrine kit) and inform those around you of your allergy. *Note: wearing a medical alert bracelet would be advisable.*
3. Inform supervisors and co-workers in advance of an employee's allergic reactions to insect or animal bites so that appropriate steps can be taken to prepare for emergencies.
4. Use caution when moving rocks or disturbing logs. Snakes and many other types of insects and reptiles live under rocks and logs and in the bark of trees.
5. Remember that most species of poisonous animals are active at night. Be alert and exercise more caution after dusk.
6. When you are in the woods, stay on trails and avoid tall grass and underbrush.
7. The most important preventative measure is to eliminate the formation of nests or hives in buildings. All buildings should be inspected to find areas where insects typically build nests. Find and fill all cracks, even those smaller than 1/8", which includes the area where utility lines enter the building.
8. If there are a large number of stinging insects in an area, then the possibility of a nearby nest or hive is much greater. If they are present, their hive is not far away. Do not attempt to approach or destroy a hive or nest. Back away from the area and report it to the proper person, or call an exterminator. If it is an emergency, call 911!
9. If hives or nests are a public nuisance, contact local emergency response to have them removed.
10. Most wild animals and snakes will take great pains to avoid you. If you do encounter them, simply stand still and allow them to walk or crawl away. Once you have encountered a snake, you will want to look for others that may be nearby, and proceed slowly and cautiously even after the snake has passed.
11. Call local animal control authorities if you notice an animal with the symptoms of rabies. Try to remember what the animal looked like and the area where you last saw it. Never try to stop, hold, or catch an animal.

12. Insects such as mosquitoes need standing water to lay their eggs. Be conscientious when working around water sources such as old tires, flower pots, clogged drains, kiddie pools, birdbaths, etc.
13. Try to stay indoors at dawn and dusk; peak grazing time for many insects. Do not wear perfumes or scented hair products. Avoid physical exercise, as mosquitoes are attracted to carbon dioxide.

### *Signs and Symptoms of Attacks or Poisoning*

Symptoms of an insect bite include pain, swelling, symptoms of an allergic reaction, or a visible stinger.

The symptoms of a spider bite or snakebite are similar. They are: nausea, vomiting, difficulty breathing or swallowing, sweating or salivating more than normal, severe pain or swelling in the sting or bite area, a mark indicating a possible bite or sting.

### *What to do if Bitten or Stung*

If stinging insects are attacking you - RUN! Get out of the area as quickly as possible. Continue running until you find shelter. Stinging insects are slow and most people can outrun them. Do not stand in one area or slap at the insects, as this will increase their attack response. Since insects typically attack the heads of their victims, cover your nose and mouth as much as possible without blocking your vision. Contrary to popular myth, you should not seek refuge in water. The insects may swarm around and wait for you to come up for air. They will continue to attack and recruit more insects. Even if you are not allergic to stings, you should still seek immediate medical attention if you are stung multiple times.

If someone else has been stung or bitten, recognize that an emergency may exist and begin assessing the situation as well as the victim.

1. Decide how to act. If there is still a threat from the insect or animal that has attacked, your best course of action may be to back away and call for help. Make sure that you are safe - don't become a victim yourself.
2. Call Foreman / Supervisor & 911 if necessary.
3. Provide care until help arrives. A cold compress made of ice inside a plastic bag or towel will do, do not put ice directly on the skin.
4. Enlist bystanders if you need help.
5. Stings or bites can cause breathing problems. The reactions may appear only as a feeling of tightness in the throat and/or chest. This condition can become life threatening. The victim's face, neck, and tongue may swell, closing the airway.
6. To care for a bite or sting, remove the stinger or scrape it away with the blunt edge of a knife. If there is minor bleeding, wash the wound, control bleeding, apply an antibiotic ointment, and cover. Apply a cold pack and watch for signs of an allergic reaction.
7. Watch for signs of an allergic reaction: nausea, vomiting, diarrhea, chest or abdominal pain, difficulty in breathing, sweating, and changes in consciousness, anxiety, or seizures. The worst reaction is the potentially deadly "Anaphylactic Shock", which causes a sudden drop in blood pressure and constriction of the throat.

If someone has been bitten or stung by a snake or spider - get medical help immediately. Antivenins are available for most venomous bites, but time is a critical factor.

1. It is important to remain calm, and above all, help the victim to remain calm. Panicking causes the heart to beat faster which in turn spreads the venom faster throughout the body.
2. Keep the bitten part still and lower than the heart.
3. If bleeding is minor, wash the wound, control bleeding, apply antibiotic ointment, and cover.
4. It is generally recommended to apply ice to most stings, however, it is important to never apply ice to snake bites.
5. If you are in an area that is not easily accessible to medical personnel, begin carrying the person toward help if at all possible. If medical care cannot be obtained within thirty minutes, consider suctioning the wound using a snake bite kit if one is available.
6. Never suck venom from a wound with your mouth.

The first step in treatment of an animal bite is to assess the severity of the wound. Be sure to contact the local EMS or animal control to report the incident. Try to remember as much of the animal's appearance and whereabouts as possible and report this information to the emergency medical operator. The operator should dispatch an animal control officer to pick the animal up and test it for rabies.

### ***POISONING BY OTHER MEANS***

Absorbed poisons are poisons that are absorbed through contact with the skin or eyes. Many plants, such as poison ivy, poison oak, and poison sumac, have poisons that can be absorbed through the skin. Poisons in fertilizers and pesticides used in lawn and plant care are also absorbed through the skin.

Inhaled poisons enter the body through breathing. While checking for an odor may help in determining if there are poisonous fumes, it is important to remember that many toxic fumes are odorless and tasteless. Carbon monoxide, one of the most deadly odorless fumes, is inhaled through engine exhaust, defective cooking equipment, fires, and charcoal grills. Poisonous fumes can also be found in wells, sewers, and chlorinated areas. Poisonous fumes can be inhaled from household products such as glues, paints, cleaners, and most petroleum products such as gasoline. A key symptom to look for in a victim who you suspect has inhaled a poison is a blue or pale skin color. Toxic fumes inhibit the absorption of oxygen into the bloodstream causing discoloration.

Injected poisons enter the body through the bites or stings of insects, spiders, ticks, some marine life, snakes, and other animals. A hypodermic needle may be used to inject drugs or medication.

Ingested poisons enter the body through the mouth where they enter the intestinal track. There are non-corrosive poisons such as medication, drugs, foods, and plants; and corrosive poisons such as chemical compounds, including some household products, and petroleum products. While many cases of ingested poisons are accidental, it should be remembered that some cases of ingested poisoning are suicide attempts. In these cases the victim may be less cooperative, and greater caution should be exercised.

The ***Poison Control Center (PCC)*** in Washington State can be reached by telephone at ***1-800-222-1222***. They have access to information about almost all-poisonous substances and how to counteract the poison. The phones are answered twenty-four hours a day, three hundred and sixty-five days a year. Pharmacists, nurses, and information specialists, who are backed up at all times by a physician toxicologist, staff the center. They provide emergency medical advice and safety information on

chemical, pharmaceutical, and natural substances. They also have information on drug interactions, substance abuse, and overdose.

Many poisonings can be cared for without the help of EMS personnel. If the victim is conscious, call your local PCC first. If the victim is unconscious or you do not know the PCC number, call your local emergency number (911). The dispatcher can link you to the PCC. The dispatcher may also listen in on your conversation with the PCC Specialist to determine if an ambulance is needed.

### ***SIGNS AND SYMPTOMS***

Victims of poisoning sometimes become disoriented, woozy, silly, incoherent, or even violent. Look for clues to possible poisoning in the victim's behavior. Always remember your own safety.

Often there are clues in the victim's appearance. Victims of inhaled poisons are frequently very pale or even blue due to a lack of oxygen absorption. Burns around the victim's lips, tongue, or face are indications of a possible ingested poisoning. Burns on the skin or clothing can indicate certain forms of contact poisoning.

Be alert to other signs in the immediate surroundings of the victim. As you check the scene, be aware of these or any other signals that would indicate a possible poisoning. Any unusual odors, flames, or smoke could indicate inhaled poisons. An open or spilled chemical container can indicate contact or ingested poisoning, or both. Be aware of medicine bottles, opened medicine cabinets and damaged or overturned plants to detect ingested poisoning. Always use common sense, but if there is any doubt, call 911.

### ***WHAT TO DO IF SOMEONE HAS BEEN POISONED***

1. Check the scene to make sure it is safe to approach. Victims sometimes become violent or threatening as a result of poisoning. If this should occur, retreat to safety and wait for help to arrive. Check for fumes, if you can't get the victim away from the fumes quickly, leave and get help. Use protective gear, including gloves, if you suspect contact poisons. Take whatever precautions are necessary to ensure your own safety.
2. Remove the victim from the source of the poisoning, if necessary.
3. Check the victim's level of consciousness, breathing, and pulse.
4. Call your Foreman / Supervisor & Poison Control Center or local emergency number (911).
5. Follow the directions of the Poison Control Center or the Emergency Services Dispatcher.
6. Care for life threatening situations.
7. Gather as much information as possible about what happened. Find out, if possible, what type of poison was involved. Find out how much poison the victim took or was exposed to, and try to determine as exactly as possible the time that the victim was poisoned. If the victim is conscious, ask questions to get as much information as possible.
8. Always look for a container that the poison may have been in and have it available when contacting emergency services.
9. If the poison is unknown, and the victim vomits, preserve a sample of the vomit so that the hospital can analyze it to identify the poison.

## **Automated External Defibrillators (AEDs)**

There are 220,000 victims of sudden cardiac arrest per year in the United States; about 10,000 sudden cardiac arrests occur at work. Waiting for the arrival of emergency medical system personnel results in only 5-7% survival. Studies with immediate defibrillation have shown up to 60% survival one year after sudden cardiac arrest.

The American Heart Association recommends that everyone that takes a CPR class should also be trained to use an AED. The recommendation was issued with the 2005 update to the CPR standards.

### ***Automated External Defibrillators***

An automated external defibrillator (AED) is a medical device designed to analyze the heart rhythm and deliver an electric shock to victims of ventricular fibrillation to restore the heart rhythm to normal. Ventricular fibrillation is the uncoordinated heart rhythm most often responsible for sudden cardiac arrest.

### ***Sudden Cardiac Arrest***

Sudden cardiac arrest occurs when ventricular fibrillation takes place or when the heart stops beating altogether. Without medical attention, the victim collapses, loses consciousness, becomes unresponsive, and dies. Many victims have no prior history of heart disease and are stricken without warning.

### **Causes of Sudden Cardiac Arrest**

- Heart attack
- Electrocutation
- Asphyxiation (loss of consciousness and death caused by inadequate oxygen in the work environment, such as in a confined space).

### **Reasons for AED's in the Workplace**

- Workers may suffer sudden cardiac arrest while on the job.
- Onsite AEDs save precious treatment time, and can improve survival odds because they can be used before emergency medical service (EMS) personnel arrive.
- A heart rhythm in ventricular fibrillation may only be restored to normal by an electric shock.
- The AED is compact, lightweight, and portable, battery operated, safe, and easy to use.

### **Placement of AEDs**

- AEDs should be conveniently installed to ensure response within 3-5 minutes.
- Areas where many people work closely together, such as assembly lines and office buildings.
- Close to a confined space.
- Areas where electric-powered devices are used.
- Outdoor worksites where lightning may occur.
- Health units where workers may seek treatment for heart attack symptoms.
- Company fitness units and cafeterias.
- Remote sites, such as construction projects, excavation projects near underground power, power transmission lines, and energy pipe lines.

### AED Program Cost

- AEDs cost \$1200-\$3000 per device.
- Training, annual retraining, and administrative costs are additional.

### AED Training

Workers can easily be trained to:

- Recognize sudden cardiac arrest and notify EMS personnel,
- Perform cardiopulmonary resuscitation (CPR),
- Provide early defibrillation with an AED, and
- Care for the victim until EMS personnel arrive.

For more information, visit the OSHA website at [www.osha.gov](http://www.osha.gov) or the websites of the following organizations:

- American Heart Association
- American College of Occupational and Environmental Medicine
- American Red Cross
- Federal Occupational Health
- National Center for Early Defibrillation
- National Safety Council

## Training

Make sure that every 2 years, employees are trained in and able to demonstrate their skill and knowledge of the following subject areas:

- Role and responsibilities of the first-aid provider
  - Assessing a scene
  - Performing an initial and ongoing assessment of an injured or ill person
  - Scene safety
  - Body substance isolation/blood borne pathogens
  - Performing an emergency move
  - Placing an ill person in the recovery position
  - Opening and maintaining an airway
  - Providing rescue breathing
  - Managing an obstructed airway
  - Performing adult/one-rescuer CPR
  - Recognizing the warning signs and symptoms of medical problems
  - Recognizing and caring for an injured or ill person with decreased levels of responsiveness
  - Controlling external bleeding and recognizing internal bleeding
  - Recognizing and caring for victims of shock
  - Recognizing and stabilizing spinal injury
  - Recognizing and manually stabilizing suspected skeletal injuries
  - Knowledge of voluntary provisions of first aid, consent and confidentiality
1. Assess your workplace to determine if there are certain job hazards and/or if the time and distance from emergency medical services indicate a need for training beyond the items listed above.
  2. Keep a written record of your employees' first-aid training by keeping rosters, first-aid cards, or certificates. You may store your documentation on a computer, as long as the information is readily available when requested by personnel of the Department of Labor and Industries.

## References/Resources

ANSI Z308.1-2003

Chapter 296-800-150, WAC

29 CFR 1910 Subpart K

29 CFR 1926.23