



First Aid, CPR and Automatic External Defibrillator Training Manual



Course Information:
253-594-7979

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OBJECTIVES

At the conclusion of this program, the participant will be able to:

1. Describe the role and responsibilities of a first-aid provider.
2. Properly assess the scene.
3. Perform initial and ongoing assessment of ill or injured persons.
4. Assess scene safety.
5. Describe Universal Precautions and body substance isolation.
6. Perform an emergency move.
7. Provide CPR.
8. Perform obstructed airway procedures.
9. Recognize the warning signs of medical problems.
10. Recognize and care for a person with decreased level of consciousness.
11. Recognize and control bleeding.
12. Recognize and care for a person in shock.
13. Recognize and care for spinal injury.
14. Have knowledge of Good Samaritan Law, and treatment standards.

WHAT HAPPENS WHEN YOU CALL 911!!

After dialing the magic three numbers, you will get a Dispatcher who will ask you, "Do you need **Police, Fire or Medical Aid?**" or "**911, What are you reporting?**"

Your response will be "**Medical Aid.**" Or "**A car crash**", etc.

You will be put on hold for a few seconds while the Dispatcher transfers the call to the Fire Department dispatcher.

The Fire Department Dispatcher will answer. The first item you need to give him or her is **YOUR ADDRESS and/or LOCATION OF PROBLEM.**

Then for medical aid calls they need the answers to the following questions. Be prepared to answer:

1. What's the **problem?** (Chief complaint) A **short** description of exactly what is wrong.
2. What is the approximate **age** of the patient?
3. Is he/she **conscious?**
4. Is he/she **breathing?**

The Dispatcher may inquire about other facts regarding the patient; however, if the answers to the above 4 questions indicate a life threatening problem, the second dispatcher will send help immediately while the first dispatcher gathers more information from you, which they will relay to the responding units.

If the problem is not life threatening and won't require a TFD Paramedic, a private ambulance may be dispatched with an Engine or Truck Company.

Every TFD Engine or Truck Company is staffed with 3 EMTs who provide basic life support. Some Companies are also staffed with a Paramedic.

PATIENT ASSESSMENT

Primary Assessment

- Put on gloves and glasses/goggles known as Universal Precautions.
- Ask patient "What happened?" "How can I help you?" "Where do you hurt?"
- If unconscious and not breathing, start CPR. If conscious, continue your assessment.
- What does skin feel like? (wet/dry, hot/cold)
- Head to toe sweep for major bleeding or other obvious injury.
- Have patient wiggle hands and toes.
- Monitor level of consciousness until help arrives - note any changes.

Primary Care

- Head stabilization. Tell patient not to move. Keep head immobile if injured.
- Expose and control all major bleeding.
- Lay the patient down, keep warm, and treat for shock if needed.
- Put patient in a position of comfort if they have trouble breathing or are in pain.

Medical History

- S** Signs and Symptoms
- A** Allergies, Are you allergic to something?, Did you come in contact with that something? What type of reaction do you have? Rash, breathing trouble, etc.
- M** Medications (Do you take medications, & did you take your pills)
- P** Previous and current medical history possibly related to this.
- L** Last meal (when / what did you last eat or drink?)
- E** Events leading up to the incident:
 - Pain? How long, onset, duration, intensity?
 - Lose consciousness? How long, from what?

Secondary Survey (Head to Toe)

- Look for medic alert tag on wrist or neck.
- Head, eyes, ears, nose, throat, face.
- Spine (neck to tailbone) without moving patient.
- Chest (expose all injuries).
- Abdomen (expose all injuries).
- Pelvis/hips (includes buttocks).
- Extremities, perfusion (temperature and color), movement and sensation on injured limbs.

Secondary Treatment (If available)

- Keep head and spine immobilized
- Treat for shock. Lay down, keep warm.
- Splint all fractures - Use best material available.
- Transport if necessary.

GENERAL MEDICAL ILLNESS ASSESSMENT

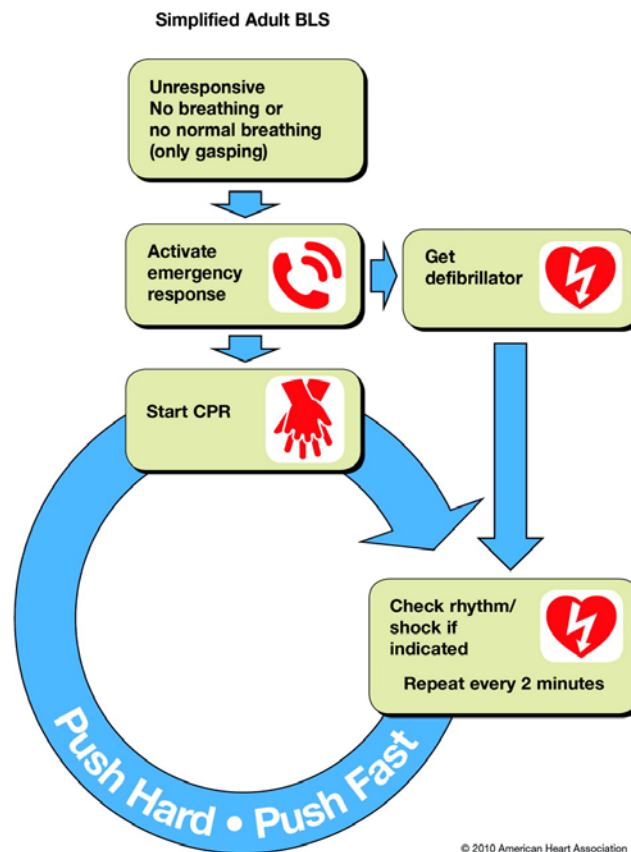
Check signs / symptoms of apparently ill patient.

- Signs - something you can feel, see or touch.
- Symptoms - what the patient tells you.

What to do:

1. Ask patient to describe how he/she feels. Has this happened before?
2. Check for Medic Alert tags. Is patient taking any medications?
3. Check skin temperature, color, and moisture. Look inside lower lip in people of color for paleness or cyanosis (blue color).
4. Reassure patient and seek medical aid as indicated by assessment.
Abnormal signs/symptoms - call 9-1-1 or take to the hospital/doctor.

Summary of Key Issues and Major Changes



Key issues and major changes for the 2010 AHA Guidelines for CPR and ECC recommendations for lay rescuer adult CPR are the following:

- The simplified universal adult BLS algorithm has been created.
- Refinements have been made to recommendations for immediate recognition and activation of the emergency response system based on signs of unresponsiveness, as well as initiation of CPR if the victim is unresponsive with no breathing or no normal breathing (i.e., victim is only gasping).
- “Look, listen, and feel for breathing” has been removed from the algorithm.
- Continued emphasis has been placed on high-quality CPR (with chest compressions of adequate rate and depth, allowing complete chest recoil after each compression, minimizing interruptions in compressions, and avoiding excessive ventilation).
- There has been a change in the recommended sequence for the lone rescuer to initiate chest compressions before giving breaths (C-A-B rather than A-B-C). The lone rescuer should begin CPR with 30 compressions rather than 2 ventilations to reduce delay to first compression. Compression rate should be at least 100/min (rather than “approximately” 100/min).
- Compression depth for adults has been changed from the range of 1 ½ to 2 inches to at least 2 inches (5 cm).

ONE RESCUER ADULT CPR / OBSTRUCTED AIRWAY

- Check for **SAFETY OF THE RESCUER**. Look at the big picture.
- **TALK AND TOUCH**
"Are you all right?" Use appropriate means to wake up patient.
- **CALL FOR HELP / Activate the EMS System 911**
"Help! YOU, (point) go call 9-1-1 and come back!"
- **BEGIN CHEST COMPRESSIONS**
If not breathing NORMALLY, start **compressions** at a **rate of 100 COMPRESSIONS PER MINUTE** counting (out loud) "One, two, three...", etc. Give **30 COMPRESSIONS** with a **DEPTH** of at least 2 inches, (about 1/3rd the depth of the chest thickness) followed by **2 VENTILATIONS**. **Stop and recheck for signs of life after about 2 minutes, then every few minutes after that.**
- **OPEN AND MAINTAIN THE AIRWAY**
Head tilt, chin lift for all patients, even those with suspected neck or back injury.
Look carefully in mouth
- **BREATHING**
Give 2 breaths (About 1 second long). Watch chest rise.
If chest does not rise, re-open airway and try again. If no air goes in started chest compressions. If successful, proceed to compressions.
- As soon as **AED** arrives, attach and follow directions

C- Circulation
A- Airway
B- Breathing
D - Defibrillation

CHILD & INFANT

Follow the same **C-A-B-D** checks as above. Body size is smaller so the compressions and breaths will be smaller. Compressions might be done with one hand or two depending on size of child. Use two fingers for infants, compression depth of 1 ½ inch for children and 1 inch for infants. The rate is at least 100 per minute and the ratio of compressions to breaths is 30/2.

Calling for help is different for children only when you are alone. Because most cardiac arrest in kids is due to airway blockage you should do two minutes of CPR prior to leaving child. This will allow you to find the blockage and clear it sooner. This delay in calling should also be done for adult patients with a known airway problem. (Trauma, Overdose or drowning)

Automatic External Defibrillators

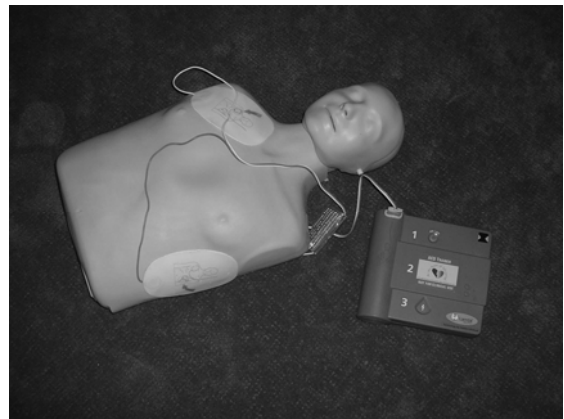


85% of adults go into an abnormal heart rhythm before their heart totally stops. The most common is Ventricular Fibrillation (V-Fib). Instead of the normal squeezing action that the heart uses to circulate blood, the heart quivers or shakes when in V-Fib.

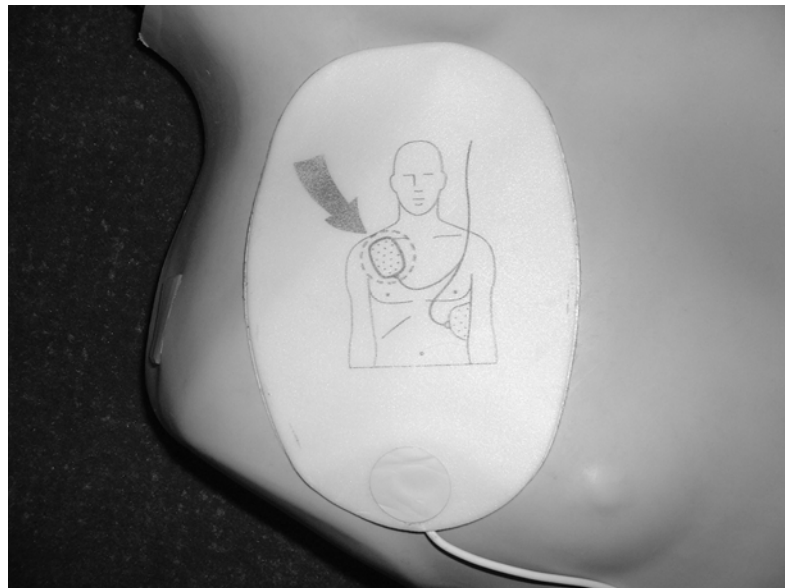
Electrical shock is used to stop this quivering rhythm and allows the heart to re-start in the normal squeezing action, which will produce a pulse.

Automatic External Defibrillators allow anyone with basic knowledge to defibrillate a person in V-Fib. AED's will not allow shock in a patient that does not need it.

AED's are becoming more cost effective. Costs can vary from \$1,000.00 to \$3,000.00 per unit. These are the units being put on airplanes, in casinos, and many other large buildings. Many buildings in Tacoma either already have or are in the process of putting them in service. If your company decides to get an AED the Tacoma Fire Department will train you in its use. Call the CPR information line number on the front of this booklet for more information.



Every engine, truck and fireboat company in Tacoma has an AED with personnel trained to use it.



AED Specifics

Ventricular fibrillation does not circulate any blood. CPR should be done prior to the arrival of the AED. CPR should continue while the device is being connected to the patient. During the “analyze” mode and the “shock advised” period you should not touch the patient.

Chances of successfully defibrillating a patient diminish rapidly over time. Roughly 7 – 10% per minute. CPR, while waiting for the AED to arrive on scene extends this survival window.

- C** Circulation
- A** Airway
- B** Breathing
- D** Defibrillation

Special Circumstances:

Wet surfaces. Move to dry area if possible. Stand on shoes to minimize possible shock to rescuer.

Use on all victims. Use pediatric pads if available, and if < 8 years old.

Remove any medication patches on the chest where the de-fib patches go.

Do not place de-fib patches over any implanted devices, give 1” clearance.

De-fib patches are placed on the right upper portion of chest; below the collarbone and above the nipple, and, on the left side of the chest outside the left nipple and several inches below the armpit. Most patches have pictures to help you place them in the right position.

Make sure the patches stick to the chest. For sweaty chests use clothing or provided gauze to dry the chest. For hairy chests use the provided razor to remove hair in the area needed to stick the patch.

SAFETY: While the machine is very safe and will not allow shock unless it is connected to a person in V-fib, the following precautions should be followed.

Do not touch the patient during analysis or shock.

Warn bystanders before shocking patient and **LOOK** when you press the button.

The Tacoma Fire Department encourages everyone to be familiar with the use of AED's. AED's are often placed in public areas for use by anyone recognizing a need.

FOREIGN BODY AIRWAY OBSTRUCTION CHOKING - CONSCIOUS (ADULT/CHILD)

What to do:

1. Ask, "Are you choking?"
2. If yes, direct someone to **call 911**, then find correct hand position (midline, just above the navel). Give abdominal thrusts, inward and upward with a clenched fist, until obstruction is removed or patient becomes unconscious.
3. **IF PATIENT IS PREGNANT OR TOO LARGE TO GET ARMS AROUND, USE CHEST THRUSTS INSTEAD OF ABDOMINAL THRUSTS.** Place fist in center of chest on sternum. Give chest compression.
4. Each thrust is a distinct inward and upward movement, and is done with intent to expel object.
5. When obstruction is removed, patient should be checked at hospital for possible internal injuries.
6. If patient goes unconscious before object is removed, see FOREIGN BODY AIRWAY OBSTRUCTION - CHOKING - UNCONSCIOUS.

FOREIGN BODY AIRWAY OBSTRUCTION CHOKING - UNCONSCIOUS (ADULT/CHILD)

1. When a person who is choking becomes unconscious, ease him/her to the floor and call out for help.
2. Call 9-1-1.
3. Head tilt chin lift to open airway, look carefully inside mouth, DO NOT perform blind finger sweep.
4. Attempt to breathe for patient. If no air goes in reposition the head and try again.
5. If airway remains blocked, perform chest compressions, just like for CPR.
6. Following the compressions, open airway, look carefully inside mouth, try to give patient 2 more breaths.
7. Repeat compressions and breathing attempts until the obstruction is removed.
8. Continue with primary care and have patient checked for internal injuries.

BLOODBORNE PATHOGENS

Know what to do if you are exposed!

- What is a "true" exposure?
 - Needle stick
 - Blood or bodily fluids in the eyes, mouth, or a break in the skin
 - Mouth to mouth
 - Breathing airborne pathogens
 - Human bite
- Hepatitis, HIV, tuberculosis, meningitis, measles, chicken pox, and many other diseases could potentially be transmitted while providing first aid.
- Personal Protective Equipment
 - First aid kit containing: (Known as "Universal Precautions")
 - Gloves (have several pair available)
 - CPR shields **OR** Masks with one-way valve
 - Eye protection
 - Respiratory protection
- Proper hand washing is most effective method to prevent spread of germs.
- Post Exposure Follow-up with a physician



BLEEDING, WOUNDS, AND SHOCK

BLEEDING

Internal or external blood loss due to vessel damage.

SIGNS / SYMPTOMS

1. Average adult has 10 to 12 pints of blood
 - a. 1 pint loss- Shock unlikely
 - b. 2 pints loss- Signs and symptoms of shock evident.
 - c. 3-4 pints loss- Can/will be life threatening
2. Vein - Dark red, possibly bluish, flow strong and steady.
3. Artery - Bright red, spurting.
4. Capillary - Oozes.

What to do:

If unconscious but breathing:

- a. Stop open bleeding wounds with direct pressure.
- b. Continue primary care and seek medical aid as needed.

MANAGEMENT OF OPEN, BLEEDING WOUNDS

1. **DIRECT PRESSURE** - A dry, sterile compression dressing to the entire wound or direct pressure with your gloved hand. A **pressure dressing** is any dressing which is tight enough to put pressure on the wound to help stop bleeding without someone having to hold it. This will control the majority of bleeding problems.
2. **ICE** - If available, put ice pack on top of bandage. Never ice to skin contact.
3. **PRESSURE POINTS:**
 - a. **Brachial artery** on the inside of the arm between the elbow and the shoulder.
 - b. **Femoral artery** - the main artery for the leg. In the crease where the leg meets the body.
4. **TOURNIQUETS** are a last resort for first aid providers.
 - a. Bleeding is profuse and not stopped with direct pressure and pressure dressing.
 - b. First aid provider has proper training.

Hemostatic agents are not recommended as a first aid measure for bleeding control.

TYPES OF WOUNDS

1. **ABRASION** - A superficial injury caused by moving contact between the skin and a rough surface.
2. **LACERATION** - A wound or irregular tear of the skin.
3. **INCISION** - A type of laceration caused by a knife or sharp object, through the skin and into tissue.
4. **AVULSION** - A body part torn loose from underlying tissue and left hanging by a flap.
5. **PUNCTURE** - A deep wound with a small entrance caused by a sharp, narrow object or a high velocity blunt object.
6. **AMPUTATION** - The complete tearing away of a body part from the body.
7. **IMPALED OBJECT** - An open wound with the foreign object visible or with evidence that the object is still in the wound.

SHOCK

Inadequate supply of oxygen to vital organs/body tissue. May accompany any illness or injury.

SIGNS / SYMPTOMS

1. Anxiety, restlessness, mental confusion.
2. Pale color, moist and cold skin.
3. Shivering, thirst, nausea, vomiting
4. Rapid weak pulse
5. Rapid shallow breathing

What to do:

1. Check level of consciousness.
2. Control bleeding, if present, by using direct pressure.
3. Maintain body temperature, keep patient warm. Think above and below.
4. Keep patient lying down or treat in position found if impractical to lay down.
5. **Do not give fluid** even if patient is thirsty.
6. Continue primary care and seek medical aid as indicated.

INJURIES

EYE INJURIES

Damage to eye(s) or surrounding tissue.

SIGNS / SYMPTOMS

1. Visible damage to the eye(s) or surrounding tissue.
2. Object in the eye(s).
3. Pain or impaired vision.

What to do:

1. If scratched or burned, cover eyes with clean dressing and seek medical aid.
2. If an impaled object, cover the injured eye(s) and stabilize object with paper cup. Cover uninjured eye with dry dressing, bandage cup and dressing in place. (Bandage both eyes even if only one eye is involved, as the eyes move together.)
3. Place hand on patient's shoulder and reassure patient. Keep patient's hands away from injury.
4. Seek medical aid immediately.
5. For chemicals in eye, flush with large amounts of water. (15 minutes)

FRACTURES

Break or crack in a bone, which may be open (bone may be visible) or closed.

SIGNS / SYMPTOMS

1. Pain, tenderness.
2. Inability to move or doesn't want it moved.
3. Deformity.
4. Swelling, discoloration.
5. Open fracture may have bleeding and wound at fracture site (bone may be visible).
6. Shock.

What to do:

1. Stop bleeding with direct pressure.
2. Cover any wound with dressing.
3. Keep patient still, immobilize fracture site manually (or allow patient to do so).
4. Check for circulation, movement and sensation.
5. Use cold packs to minimize swelling.
6. Continue primary care and seek medical aid.

OPEN CHEST WOUND

SIGNS / SYMPTOMS

1. Breathing difficulty.
2. Bullet holes, stab wounds, penetrating injuries.
3. Open wound of the chest with air moving in and out of the wound.

What to do:

1. Seal any open wounds with gloved hand/dressing. Stop bleeding with direct pressure.
2. Assist breathing if needed.
3. Keep patient immobile.
4. Activate EMS system and continue primary care until help arrives.

HEAD INJURY

SIGNS / SYMPTOMS

1. History of unconsciousness, even if short time.
2. Headache, sleepiness.
3. Nausea/vomiting within 4 hours after injury.
4. Head wound with or without bleeding.
5. Pupil change - One pupil gets larger, even an hour or more after head injury.
6. Bruising around eyes or bone behind ears.
7. Blood or clear fluid draining from the nose and/or ears.
8. Breathing difficulty, or rapid noisy breathing.
9. Seizures.
10. Abnormal movements of arms and legs when unconscious.

What to do:

1. Activate EMS system for serious head injury, or if in doubt.
2. Immobilize head and neck.
3. Do not try to control clear fluid mixed with blood from ears and nose.

SPINE INJURY

SIGNS / SYMPTOMS

1. Mechanism of Injury, i.e., auto, motorcycle or diving accident, with information from patient, witnesses.
2. Pain or tenderness in head, neck or back.
3. Cuts or bruises on head, neck, or back.
4. Numbness, tingling, or paralysis anywhere in the body.
5. If head injury, assume neck injury.

What to do:

1. Immobilize head, neck, and back manually.
2. Do not move the patient.
3. Use head tilt/chin lift if airway management is needed.
4. Continue primary care and seek medical aid.

HEART PROBLEMS (Angina, Heart Attack, CHF)

Angina:

Chest Pain caused by lack of adequate oxygenated blood to heart muscle.

SIGNS / SYMPTOMS

1. Chest Pain
2. Has been diagnosed by a physician as having Angina Pectoris.
3. Has been prescribed Nitroglycerin by physician. You may assist patient in taking medication prescribed for them. Nitroglycerin helps dilate the blood vessels allowing more oxygenated blood to nourish the heart muscle.

Heart Attack:

Little or no oxygenated blood to heart muscle resulting in heart muscle damage or death. Can be from blockage, spasm or aneurysm.

SIGNS / SYMPTOMS

1. Crushing pressure, squeezing, or pain in the chest lasting two minutes or more. The pain may radiate to the neck, jaw, shoulders, arms, or abdomen.
2. Nausea, weakness, shortness of breath, sweaty, cool, and pale.
3. Anxiety, denial.
4. Not necessarily related to physical or emotional stress.
5. Some people do not have these "classic" signs. Instead it feels like a toothache, or a backache.
6. Women may have different symptoms, lower back pain, neck pain or jaw pain.

What to do:

1. If pain lasts 2 minutes or longer, call 9-1-1.
2. Position of comfort for patient.
3. May have patient chew 1 adult (non enteric coated) or 2 low dose (81 mg) baby aspirin, if patient has no history of allergy to Aspirin and no recent gastrointestinal bleeding.

CHF (Congestive Heart Failure)

Not pumping blood adequately due to damage or disease.

SIGNS / SYMPTOMS

1. Short of breath.
2. Takes "water" pill. (Lasix is a common brand name)
3. Swollen ankles.

What to do:

1. Let patient assume a position of comfort, semi-sitting at a 45 degree angle, loosen tight or constrictive clothing.
2. If pain lasts 2 minutes or longer, activate the EMS system. If pain is severe, call immediately.
3. Continue primary care.

STROKE

A blocked or ruptured artery in the brain which stops the adequate flow of blood to a portion of the brain.

SIGNS / SYMPTOMS

1. Numbness or paralysis of one or both sides of the face or body. One side of face droops.
2. Respirations slow with snoring sounds.
3. Inability to speak normally.
4. Pupils may be unequal.
5. Pulse slow and strong and may become rapid and weak.
6. Patient may lose consciousness.

What to do:

1. Communicate with and reassure patient. Insure that family and bystanders do not make inappropriate comments. Hearing is the last sense to fail.
2. Call 9-1-1.
3. If patient is unconscious, place on affected side to allow fluids to drain from mouth.
4. Minimize movement and continue primary care until help arrives.

ANAPHYLACTIC REACTION

Reaction to foreign substances such as medications, seafood, bee stings. Can be immediately life threatening.

SIGNS / SYMPTOMS

1. Shocky: cool, clammy skin, rapid heart rate.
2. Skin flushed, burning, hives.
3. Swelling of face, eyes, tongue, and/or throat, difficulty speaking.
4. Breathing difficulty, wheezing.
5. Check for Medic Alert tag on wrist or neck, ask about history of reactions.

What to do:

1. Call 9-1-1 if onset is rapid (within 1 hour).
2. Patient may carry prescribed medication to counteract the reaction. Assist with the medication as requested.
3. Continue primary care until help arrives.

POISONING

SIGNS / SYMPTOMS

1. Pain, cramps, vomiting, diarrhea, and/or unconsciousness.
2. Burns on hands or around mouth, odor of breath.
3. Information from witnesses.
4. Suspicious circumstances, such as empty containers.

What to do:

1. Call 9-1-1. They will connect you, themselves, and Poison Control on a conference call. Be ready to answer the following, if possible:
 - a. What was it?
 - b. How much was ingested?
 - c. When taken?
2. Follow Poison Control Center instructions.
3. Unconscious patient - monitor and support ABC's.

DIABETES Excessively high or low levels of sugar in the bloodstream.

SIGNS / SYMPTOMS

Diabetic Coma (Not enough insulin, plenty of sugar)

1. Extreme thirst, frequent urination.
2. Develops slowly over a period of days.
3. Warm, dry skin.
4. Rapid, deep, sighing respirations.
5. Rapid, weak pulse.
6. Sweet odor on the breath.
7. Medical Alert tag (possibly).

Insulin Shock (too much insulin, not enough sugar)

**** MAJOR EMERGENCY ****

1. Hunger, headache, dizziness.
2. Rapid onset.
3. Cool, clammy skin.
4. Normal, shallow respiratory rate.
5. Rapid, weak pulse.
6. No strange odor on breath
7. Medic Alert tag (possibly)
8. Confused, combative. May go into seizures

What to do:

1. If signs/symptoms indicate diabetic coma, continue primary care and call 9-1-1.
2. If unsure whether the problem is high blood sugar or low blood sugar, give sugar if conscious, and call 9-1-1.
3. If unconscious, do not attempt to administer anything by mouth. Call 9-1-1.
4. Do not attempt to administer insulin.

WHEN IN DOUBT AS TO WHETHER THE PROBLEM IS LOW BLOOD SUGAR OR HIGH BLOOD SUGAR, IT IS BEST TO GIVE SUGAR

SEIZURES

Interruption of normal electrical activity in the brain.

SIGNS / SYMPTOMS

1. Patient may experience an aura (metallic taste in mouth, funny noise) then will stiffen and fall.
2. Patient experiences jerking movements of the body.
3. Jaw muscles tighten; patient may stop breathing or may make hissing sounds during seizure.
4. Patient may lose control of bladder and bowels during seizure.

What to do:

1. Do not put anything into the mouth.
2. Protect patient, do not restrain during the seizure. Put something soft under head and remove hard or sharp objects from the area. Move furniture away.
3. Roll on side, if possible, after seizure is over so any drainage comes out of mouth.

ENVIRONMENTAL EMERGENCIES

SNAKE BITE

SIGNS / SYMPTOMS

1. Fang or chewing marks.
2. Severe burning, pain, swelling.
3. Shock, nausea, and vomiting.
4. Breathing difficulty.
5. Report by patient or witnesses.

What to do:

1. Remove rings or constricting jewelry on the extremity.
2. Apply constricting band above the bite tight enough to make the veins stand out, but not cut off pulse.
3. Immobilize the bite area. Keep at level of heart.
4. If envenomation is apparent by signs/symptoms, seek medical aid immediately. DO NOT USE ICE ON THE BITE AREA.

JELLYFISH STINGS

To inactivate venom load and prevent further envenomation, jellyfish stings should be liberally washed with vinegar (4% to 6% acetic acid solution) as soon as possible and for at least 30 seconds. After the nematocysts are removed or deactivated, the pain from jellyfish stings should be treated with hot-water immersion when possible.

There are 2 actions necessary for treatment of jellyfish stings: preventing further nematocyst discharge and pain relief. A number of topical treatments have been used, but a critical evaluation of the literature shows that vinegar is most effective for inactivation of the nematocysts. Immersion with water, as hot as tolerated for about 20 minutes, is most effective treating the pain.

HYPOTHERMIA

Cooling of the body to a dangerously low level.

SIGNS / SYMPTOMS

1. Shivering occurs in early stages.
2. Drowsiness, mumbling, trouble making decisions, difficulty performing tasks.
3. Weakness and poor circulation.

What to do:

1. Protect from further heat loss. Remove wet clothing and replace with dry. Shelter from wind, take steps to start rewarming.
2. Call 9-1-1.
3. Monitor and support ABC's and keep patient from moving. Jarring patient could cause heart to stop.
4. Continue primary care until help arrives.

FROSTBITE / FROSTNIP

Freezing of body tissues.

SIGNS / SYMPTOMS

1. Pale, cold, solid tissues.
2. Fingers, hands, feet, toes, nose, and ears are most commonly affected.
3. Numbness

What to do:

1. Protect body part from further cooling.
2. **DO NOT RUB OR MANIPULATE THE EXTREMITIES. DO NOT GIVE COFFEE, ALCOHOL, OR OTHER DRUGS. DO NOT PUT IN WARM SHOWER OR BATH.**
3. Seek medical aid for thawing of tissues as soon as possible. Thawing is very painful and must be done properly to preserve the most tissue and function.
4. Protect patient from further harm.
5. Seek medical aid as soon as possible.

HEAT CRAMPS**SIGNS / SYMPTOMS**

1. Cramping of muscles, usually the calf muscles of the legs.
2. Often occurs while working outside.
3. Dehydrated.

What to do:

1. Rest
2. Cooling off.
3. Drinking an electrolyte-carbohydrate mixture—not soda pop.
4. Stretching, icing, and massaging painful muscles may help.

HEAT EXHAUSTION Excessive loss of body fluids and electrolytes.

SIGNS / SYMPTOMS

1. Red, flushed
2. Skin very warm and moist.
3. Temperature may be slightly elevated.
4. Disoriented or confused starting.

What to do:

1. Have victim lie down in a cool place.
2. Remove as many of their clothes as possible.
3. Cooling, preferably by immersion in cold water (do not chill patient).
4. Call 9-1-1.

HEAT STROKE Dangerously high body temperature, body's inability to cool itself.

SIGNS / SYMPTOMS

1. Include those of heat exhaustion, plus:
 - a. Possible seizure
 - b. Loss of consciousness

What to do:

1. Requires EMS providers. Call 9-1-1.
2. Do not try to force victim to drink fluids.

BURNS

Thermal Burns

SIGNS / SYMPTOMS

1. Obvious skin burns:
 - a. First degree - Redness of skin, no blistering (sunburn)
 - b. Second degree - Redness of skin with blistering (scald burns, hot liquid)
 - c. Third degree - Deep burn, black and charred, white or tan skin (flame or hot metal)
2. Pain.
3. Difficulty breathing.
4. Shock.
5. Soot/burns around mouth and nose.
6. Coughing up black sputum.

What to do:

1. **BE ALERT FOR AIRWAY PROBLEMS**
2. Provide immediate cooling to burns without broken tissue. (Cold water cools 25 times faster than air.) Then dry.
3. Bandage burns loosely with clean, lint-free cloth. For a third degree burn, put on **only** a dry dressing.

4. **DO NOT USE CREAMS, OINTMENT, BUTTER, ETC.**, as these products seal in the heat and may cause further injury, and must be scrubbed off in the Emergency Department.

Chemical Burns

SIGNS / SYMPTOMS

1. Red, blistered, raw skin.
2. Extreme pain, burning sensation.

What to do:

1. Flood the affected area with water for minimum of 15-20 minutes (if powdered chemical, brush off before rinsing).
2. Remove all contaminated clothing, especially shoes. In doing so, avoid getting chemical on areas not previously affected or on rescuer.
3. Dress affected areas with sterile or clean dressings.
4. Seek medical aid immediately.
5. For chemical burns of the eye, flush the eye with water for a minimum of 15-20 minutes.
6. Seek medical aid.

ELECTRICAL INJURIES

Caused by contact with electricity.

SIGNS / SYMPTOMS

1. Mechanism of Injury.
2. Entrance/exit burns, fractures.
3. Respiratory or cardiac arrest.

What to do:

PRECAUTIONS: STAY AWAY / TURN OFF POWER

1. Assure that the power source is off and the patient is no longer in contact with the electrical source.
2. Check ABC's, administer CPR if necessary.
3. Bandage burns loosely.
4. Immobilize fractures.
5. Activate EMS system and continue primary care.

HOME OR CAR FIRST AID KIT

ITEM	USE
1. Ice bag (1) Chemical 'instant' ice bags or regular ice wrapped in cloth	Reduce swelling
2. Thermometer (oral) and case	Measures fever, i.e. temperature
3. Tweezers (1)	Removal of small objects from skin, e.g. splinters
4. Scissors (1) Get the strongest, blunt nosed scissors available	Cutting tape, bandages
5. Band-Aids a. 3/4 x 3" Band-Aids (12) b. XL 2" Band-Aids (2) c. Butterfly closures (5) d. 3" x 3" gauze pads (5) e. Compresses (sanitary napkins will work) f. Roller bandages, Kling or Kerlix are brand names.	Covering minor wounds Covering minor wounds Holds edges of gaping wound together Covers larger abrasion, wounds Pressure dressing to stop bleeding Cover large wound areas.
6. Ace wrap 3" (1) (elastic bandage)	Support weak muscles, sprains
7. 40" triangular cloth bandage (2)	Make a sling
8. Safety pins (4) Often come with triangular bandage above.	Secure sling
9. Tape a. 1" paper tape b. 2" cloth reinforced tape	Securing dressing and bandages
10. Neosporin ointment (1) or other brand of antibiotic salve	Antibiotic salve for infected wounds
11. Hydrogen Peroxide (1)	Cleansing of wounds
12. Calamine lotion (1)	Decreases itching from poison ivy, bug bites
13. Sunscreen	Prevents sunburn
14. Ibuprofen/Tylenol/aspirin	Headaches, fever
15. Gloves, several pair	For hand protection
16. CPR masks with one-way valve	CPR
17. Blankets/towels 'space' blanket will work	Keep warm
18. Pen/pencil and paper	Notes on patient
19. Waterless soap, alcohol based hand sanitizer	For hand washing when soap and water are not available
20. Eye protection, glasses or goggles	

TACOMA FIRE DEPARTMENT

Recommendations			
Component	Adults	Children	Infants
	Unresponsive (for all ages)		
Recognition	No breathing or no normal breathing (i.e., only gasping)	No breathing or only gasping	
CPR sequence	C-A-B		
Compression rate	At least 100/min		
Compression depth	At least 2 inches (5 cm)	At least 1/3 AP diameter About 2 inches (5 cm)	At least 1/3 AP diameter About 1 ½ inches (4 cm)
Check wall recoil	Allow complete recoil between compressions if possible rotate compressions every 2 minutes (5 cycles 30:2)		
Compression interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds		
Airway	Head tilt—chin lift		
Compression-to-ventilation ratio (until advanced airway placed)	30:2 single rescuer		
Ventilations: when rescuer untrained or trained and not proficient	Compressions only		
Defibrillation	Attach and AED as soon as available. Minimize interruptions in check compressions before and after shock; resume CPR beginning with compressions immediately after each shock.		
Foreign-body airway obstruction	Heimlich / Abdominal thrust		Back slaps and chest thrusts

CPR PROGRAM

253-594-7979