1 Status

1.1 New policy, effective 11/18/11.

2 Purpose

2.1 To provide guidelines for the provision of first aid to injuries and illnesses encountered while functioning as a Cianbro Safety Specialist.

3 Applicability

3.1 This policy applies to all subsidiary companies and departments of The Cianbro Companies.

4 Definitions

4.1 Anaphylaxis: A serious, potentially life-threatening allergic response that is marked by swelling, hives, lowered blood pressure, and dilated blood vessels. In severe cases, a person will go into shock. If anaphylactic shock isn't treated immediately, it can be fatal.

4.2 Hypovolemic shock: An emergency condition in which severe blood and fluid loss makes the heart unable to pump enough blood to the body. This type of shock can cause many organs to stop working.

4.3 OMC: Occupational Medical Consulting

4.4 Tetany: Persistent muscle contraction/rigidity

5 Policy

5.1 Cianbro provides those first aid guidelines to the Safety Specialist in order to provide prompt, consistent and appropriate first aid to team member in the event of an acute medical issue that occurs on-site. The basic premise of first aid administration is to prevent worsening of a given condition prior to accessing professional medical attention. The administration of first aid in the acute situation is not intended to delay or replace appropriate medical care.

6 Responsibilities

6.1 The corporate medical director or designee is responsible for providing approval for any deviations from the requirements contained in this policy.

6.2 The top Cianbro manager on the job site is responsible for the implementation of this policy on the project.

6.3 The corporate medical director is responsible for maintaining this document.

6.4 Safety specialists are required to review this document annually.

6.5 Safety specialists are responsible for procuring and maintaining first aid kits and blood borne pathogen kits.
7.1 Abdominal Injury

The abdomen is the area immediately under the chest and above the pelvis. It is easily injured because it is not surrounded by bones. The upper abdomen is partially protected in front by the lower ribs. It is protected at the back by the spine. The muscles of the back and abdomen also help protect the internal organs. Most important are the organs, which are easily injured or tend to bleed profusely when injured, such as the liver, spleen and stomach.

7.1.1 Some signals of serious abdominal injury include:
- Open wound in abdomen
- Severe pain
- Bruising
- External bleeding
- Nausea and vomiting (sometimes containing blood)
- Weakness
- Thirst
- Pain, tenderness or a tight feeling in the abdomen

7.1.2 Care for abdominal injuries
- Carefully position the victim on the back.
- Do not apply direct pressure.
- If organs are protruding, do not push organs back in.
- Remove clothing from around wound. Be sure to use appropriate personal protection.
• Apply moist, sterile dressings over wound (warm tap water can be used).
• Cover dressings loosely with plastic wrap if available.
• Cover dressings lightly with a folded towel to maintain warmth.
• Do not give injured person anything to eat or drink.

7.1.3 CALL 911 and monitor ABC’s.
• Is the **Airway** open?
• Is the patient **Breathing** well?
• Does the patient’s **Circulation** seem OK?
• (check skin color and palpate pulses)
• What is the patient’s level of **Consciousness**?

7.1.4 Closed abdominal injury
A. Carefully position the victim on the back
B. Bend the victim’s knees slightly. This allows the muscles of the abdomen to relax. If movement of the victim’s legs causes pain leave the legs straight.
C. Place rolled up blankets or pillows under the victim’s knees.
D. Call 911
E. Take steps to minimize shock, maintain normal body temperature and monitor the ABCs until EMS personnel arrive (see Hypovolemic Shock, Section 7.20).
• Is the **Airway** open?
• Is the patient **Breathing** well?
• Does the patient’s **Circulation** seem OK?
• (check skin color and palpate pulses)
• What is the patient’s level of **Consciousness**?

7.2 Abrasions
Skin that has been rubbed or scraped away.

7.2.1 Care for abrasions
• Wash wound thoroughly with soap and water
• Control bleeding by direct pressure. (Be sure to use appropriate personal protection.)
• Place Bacitracin ointment on the wound if no allergy known
• Apply sterile dressing
• Advise patient to follow with own doctor if problems or if greater than 10 years since last tetanus shot

7.3 Allergic Reactions

7.3.1 Anaphylactic shock is a severe allergic reaction. Air passages may swell and restrict the victim’s breathing. Insect stings, food or medication may cause anaphylaxis. Signals of anaphylaxis are:
• Rash
• Feeling of tightness in chest and throat
• Swelling of face, neck and tongue
• Dizziness or confusion and
• Breathing difficulty which includes coughing and wheezing. This breathing difficulty can progress to an obstructed airway as the tongue and throat swell

7.3.2 Care for anaphylaxis
• Monitor breathing closely
• Provide respiratory support as able
• Call 911
• Continue to provide respiratory support and reassurance for the victim
• Observe for shock
  o See Insect Bites
7.4 Amputation/Avulsion
In an avulsion, a portion of the skin or soft tissue may be partially or completely torn away.

7.4.1 Care
- Control bleeding. (Be sure to use appropriate personal protection.)
- Cover with sterile dressing
- Retrieve severed part, if possible
- Observe for shock

7.5 Back Pain (non-specific)
There are many causes of back pain. Fractures, tumors, infections and disc herniations occur uncommonly causing back pain, as do some internal illnesses. Most back pain in the workplace, however, originates in soft tissue (muscle, ligament, and tendon). Prompt appropriate medical intervention can minimize the duration of symptoms, speed functional recovery and prevent disability.

7.5.1 Care for non-specific back pain
- Have team member stop performing any aggravating activities.
- If the injury is of acute onset ice may be applied to the area.
- Advise and arrange medical attention if pain persists.
- Advise follow-up with team members’ provider.

7.6 Bite Wounds

7.6.1 Animal/human bites
A. Care
- Wash thoroughly with soap and water
- Advise follow up with medical provider with any problems or if it has been greater than 10 years since last tetanus shot
- Consider assessment for possible exposure to rabies, depending on the animal involved. If unsure, check with local clinic provider.Notify team member as necessary.
- Note: It is critically important that a medical provider see all team members with human bites.

7.7 Insect bites
A. If past history indicates that there is evidence of severe allergic response to insect bites, arrange for immediate transfer to medical facility by calling 911 and perform the following:
- Check for medications such as an EpiPen or Benadryl. The person may carry Benadryl for allergic reactions.
- If EpiPen is present,
  1. Press and hold against thigh for several seconds.
  2. Massage the insertion area for 10 seconds.
  3. Protect the airway. Turn the person on their side if vomiting.
B. If there is no indication or no past history of allergic reaction:
- Remove stinger, only if readily accessible and forceps are available, from the wound.
- Wash thoroughly with soap and water.
- Apply cold packs.
- Instruct individuals to consult their physician about special first aid kits they can carry to protect against severe sting reactions and to check with a medical provider with any problems.
C. Symptoms of a severe reaction
- Difficulty breathing
- Swelling of the lips/throat
- Faintness
- Confusion
- Rapid heart rate
- Hives
7.8 Blisters
Care for blisters:
- Cleanse area gently at several times with antiseptic soap and water. (Use gloves.)
- Leave blisters intact if possible.
- Advise team member to see medical provider with any problems.
- Do what is necessary to eliminate subsequent trauma or contamination to the blister site.

7.9 Blood Pressure Protocol
Safety specialists are asked to take blood pressure readings for a number of reasons. Blood pressure abnormalities that are not job limiting but are of health concern may be discovered by OMC on pre-placement exams, DOT exams, and medical surveillance exams and in other circumstances. Often the client will be referred by OMC to a medical provider for diagnosis and treatment. Some team members may have numbers suggestive of hypertension, and rarely of serious hypertension needing prompt intervention, on any one of the exams listed above. They often do not have a relationship with a primary care provider. These team members need more readings before OMC makes a determination of how to advise the team member to proceed or whether to be concerned about the initial readings at all. Often the only reliable means to do this is through safety specialists at work. This protocol will provide a guide for the safety specialist in how to take BP reading accurately and how to deal with BP readings discovered in these various scenarios.

7.9.1 Classification of non emergent Blood Pressures

| Categories for Blood Pressure Levels in Adults (in mmHg, or millimeters of mercury) |
|---------------------------------|------------------|------------------|
| Systolic (top number) | Diastolic (bottom number) |
| Normal | Less than 120 | And | Less than 80 |
| Pre-hypertension | 120–139 | Or | 80–89 |
| High blood pressure | | | |
| Stage 1 | 140–159 | Or | 90–99 |
| Stage 2 | 160 or higher | Or | 100 or higher |

The ranges in the table apply to most adults (aged 18 and older) who don't have short-term serious illnesses.

7.9.2 Urgent Blood Pressure
- **Hypertension requiring intervention within days**
  Blood Pressure at or near 180/110 should receive prompt outpatient attention.
- **Hypertensive emergency**
  Any BP greater than 220/120, team members with these readings will require either hospitalization or urgent outpatient therapy to begin as soon as possible.

7.9.3 Devices for measuring pressure:
- Aneroid sphygmomanometers are the devices of choice.
- Automatic Blood Pressure devices are acceptable if they meet the British Hypertension Society standards and the AAMI standards for accuracy and are checked at least annually against a known accurate device(s) (Local clinic measuring devices). Be sure to check this requirement before using or purchasing (require written confirmation by vendor) any such device to measure blood pressure for team members and be sure to document annual testing of the automated device.
7.10 Bruises
This is a simple closed wound, which is also called a contusion. Bruises result when the body is subjected to force, such as when you bump your leg on a table or chair. This usually results in damage to soft tissue layers and vessels beneath the skin, causing internal bleeding when blood and other fluids seep into the surrounding tissues and the area discolors and swells. The amount of discoloration and swelling varies, depending on the severity of the injury.

7.10.1 Care for contusions
- Apply a cold compress or ice packs immediately and advise the team member to reapply up to 20 minutes in any one hour, every two-to-four hours, during the first 48 hours after the injury.
- Advise elevation of the injured part.
- Attempt rest of the injured part.
- Advise team member to seek medical care with any problems.

7.11 Burns
Burns are soft tissue injuries usually caused by heat. However, burns may also occur when the body is exposed to certain chemicals (e.g. lime dust, uncured concrete, acids, and caustics), electricity, solar or other forms of radiation. When burns occur, they first destroy the epidermis, which is the top layer of skin. If the burn progresses the dermis or the second layer is injured or destroyed. Burns break the skin and thus cause infection, fluid loss and loss of temperature control. Deep burns can damage underlying tissues. Burns can also damage the respiratory system and eyes. Many chemicals may cause burns to exposed skin. The chemical mechanism of injury is rarely thermal and is primarily by destructive reactions of skin building blocks such as fat and protein. Fortunately some basic First Aid treatment rules apply to all burns whether acid, caustic or heat.

The basic rule to remember in burn first aid is that “dilution is the solution to pollution.” Copious amounts of water are always appropriate. Rapid irrigation for a prolonged period limits tissue destruction. Other rules follow below.

7.11.1 Identify type and depth of burn
- Superficial burns or first-degree burns involve only the top layer. The skin is red and dry and the burn is usually painful.
- Partial thickness or second-degree burns involve both the epidermis and the dermis. These are red and have blisters that may open and weep clear fluid, making the skin appear wet.
- Full thickness burns or third degree burns. This may destroy both layers of skin as well as any and all of the underlying structures such as fat, muscles, bones and nerves. These burns look brown or charred with the tissues underneath sometimes appearing white.

7.11.2 Critical burns include:
- Burns whose victims are experiencing breathing difficulty.
- Burns covering more than one body part.
- Burns to the head, neck, hands, feet or genitals.
- Any partial thickness or full thickness burns to a child or elderly person.
- Burns resulting from chemical exposure or electricity.

7.11.3 Care for burns
- Remove clothing from the involved area if possible.
- If the burning substance is a powder (e.g. lime dust), carefully brush as much off the skin as possible before irrigating copiously with water. Be careful not to brush it into contact with your skin or elsewhere.
- Irrigate with low-pressure flow of cool water for at least 20 minutes. Remember, if it is a chemical burn you are creating a dilute solution of the chemical so be sure you are washing it off the skin and not onto adjacent areas. Do not use ice or ice water. Use gloves during your treatment.
- For chemical burns, if burning persists following irrigation, repeat the process.
- Do not attempt to neutralize the chemical with another chemical. The exothermic reaction that may occur will make it worse.
- Cover the burned area with sterile, loose bandages.
Advise the individual to seek medical care for tetanus immunization* if appropriate and any other problems or medical follow up when necessary.

In cases of severe burns, minimize shock, monitor ABCs and call 911 to transport to emergency room (Please see Shock, Section 7.23).

Seek medical attention as soon as possible but do not delay the irrigation process. The longer the chemical is in contact with the skin the worse the burn will be.

Keep victim warm with blanket or coats while awaiting transport.

Tetanus immunization should be repeated every 10 years.

7.12 Cardiac Emergencies

7.12.1 Heart attack
Like all living tissue, the cells of the heart need a continuous supply of oxygen. The coronary arteries supply the heart muscle with oxygen-rich blood. If heart muscle tissue is deprived of this blood, it dies. If enough tissue dies, the heart cannot pump effectively. When heart tissue dies, it is called a heart attack. The heart attack interrupts the heart’s electrical system. This may result in an irregular heartbeat and may therefore prevent blood from circulating effectively.

A. Signals of a heart attack
   • Persistent chest, neck, jaw or upper back pain or discomfort and/or breathing difficulty.
   • The skin may be pale or bluish in color or may be moist.
   • The individual may be sweating profusely.
   • There may be nausea and/or vomiting.

B. Care for a heart attack
   • Look for and recognize the signs of a heart attack.
   • Convince the victim to stop activity and rest.
   • Help the victim to rest comfortably. Loosen clothing.
   • Offer reassurance to the victim.
   • Call 911 for evaluation and transportation to the emergency room by paramedics.

Cardiac arrest occurs when the heart stops beating or is unable to circulate blood. It can also occur when the heart is too weak to circulate blood effectively. Breathing soon ceases and in four-to-six minutes, without any intervention, brain damage is possible.

C. Care for a cardiac arrest
   A. Call 911 for advanced cardiac life support.
   B. Monitor the ABC’s.
      • Is the **Airway** open?
      • Is the patient **Breathing** well?
      • Does the patient’s **Circulation** seem **OK**?
      • Check skin color and palpate pulses.
      • What is the patient’s level of **Consciousness**?
   C. Start CPR immediately.
   D. Continue CPR until EMS personnel arrive.

7.13 Cerebral Vascular Accidents/Stroke
A stroke is a disruption of blood flow to a part of the brain that is serious enough to damage brain tissue. Most commonly, a stroke is caused by a blood clot. Another common cause is bleeding from a ruptured artery in the brain. Thus, commonly a tumor or swelling from a head injury may also compress an artery and cause a stroke.

7.13.1 Signals of a stroke
   • The victim looks ill and may complain of feeling ill.
   • Displays abnormal behavior.
   • Sudden weakness and numbness of the face, arm or leg. Usually this occurs only on one side of the body.
   • Difficulty talking or understanding speech.
• Vision may be blurred or dimmed. The pupils may be of unequal size. The person may also experience a sudden severe headache, dizziness or confusion or ringing in the ears. The victim may become unconscious or lose bowel or bladder control.

7.13.2 Care of a stroke
If the victim is unconscious:
• Make sure the airway is open.
• Care for any life-threatening conditions that may occur.
• Position the victim on his/her side in order to allow any fluids to drain out of the mouth.
• Call 911.
• Monitor ABCs*.
  • Is the Airway open?
  • Is the patient Breathing well?
  • Does the patient’s Circulation seem OK?
  • (check skin color and palpate pulses)
  • What is the patient’s level of Consciousness?

If the victim is conscious (a stroke may make the victim fearful and anxious):
• Call 911
• Offer comfort and reassurance
• Have the victim rest in a comfortable position
• Do not give the victim anything to eat or drink
• If the victim is having difficulty swallowing, place him/her on side to help drain any fluids from the mouth

7.14 Convulsion/Seizure
When injury, disease, fever or infection disrupts the normal functions of the brain, the electrical activity of the brain becomes irregular. This irregularity can cause a loss of body control, known as a seizure. Seizures may be caused by an acute or chronic condition. The chronic condition is known as epilepsy.

7.14.1 Signals of a seizure
• Sometimes, before a seizure occurs, the patient experiences unusual sensation or feeling which alerts him/her to the fact that he/she may be having a seizure. This is called an Aura.
• Seizures may be mild blackouts that others may mistake for daydreaming or staring.
• There may be sudden uncontrolled muscular contractions lasting several minutes.

7.14.2 Care for a seizure:
• Do not try to stop the seizure.
• Do not allow victim to remain in upright position.
• Do not hold or restrain the person. Holding the person may cause musculoskeletal injuries.
• Protect the victim from injury (move tools or equipment that the person might strike during the seizure).
• Manage the airway (per your first aid instruction). If there is fluid in the mouth, position him/her on the side so the fluids may drain from the mouth. Do not try to place anything between the person’s teeth.
• When the seizure is over, be reassuring and comforting. Stay with the victim until he/she is fully conscious and aware of surroundings and emergency medical care arrives. Check the ABC’s.
  • Is the Airway open?
  • Is the patient Breathing well?
  • Does the patient’s Circulation seem OK?
  • (check skin color and palpate pulses)
  • What is the patient’s level of Consciousness?
  • Call 911.

Although it may be frightening to see someone having a seizure, the most important aspect to remember is to protect the victim from injury by moving furniture, etc. away from the individual.
Also, it is important to encourage and assist the team member with convulsive disorders to relay to his family and co-workers what to do if a convulsion occurs. Emphasizing to co-workers that emergency care consists essentially of protecting the person from self-injury will reduce some of the crowd hysteria which occurs during this type of medical problem.

7.15 Diabetic Emergencies
The condition in which the body does not produce enough insulin or when insulin is no longer effective, is called diabetes mellitus, or more commonly, sugar diabetes. The person with this condition is a diabetic. Anyone with diabetes must carefully monitor his/her diet and exercise and must regulate his/her use of insulin, if on insulin. When a diabetic fails to control these factors, he/she may have too much or too little sugar in the body and this imbalance causes illness. When the insulin level in the body is too low, the sugar level in the blood is high. This is called hyperglycemia. Sugar is present in the blood, but cannot be transported from the blood into the cells without insulin.

On the other hand, when the insulin level in the body is too high, the person has a low blood sugar. This condition is called hypoglycemia. The blood sugar level can become too low if the diabetic takes too much insulin, fails to eat adequately, over-exercises and burns off sugar faster than normal or experiences emotional stress.

7.15.1 Signals of diabetic emergencies
The signals of hyperglycemia and hypoglycemia differ somewhat, but the major signals are similar. These include the following:
• Changes in the level of consciousness including dizziness, drowsiness and confusion.
• Rapid breathing.
• Rapid pulse.
• Feeling and looking ill.
• Feeling weak, light headed.

It is not important for you to differentiate between insulin reaction and diabetic coma. The basic care for both conditions is the same.

7.15.2 Care for diabetic emergencies
If the person is conscious:
• Obtain a history.
• Determine if the individual has taken his/her insulin, has failed to eat or perhaps experienced some great emotional stress or has had to do something very exerting. If the victim is conscious, give him/her sugar. If the person’s problem is low sugar, the sugar will help quickly. If the person already has too much sugar, the excess sugar will do no further harm.
• Call 911.

If the person is unconscious:
• Do not give anything by mouth.
• Monitor the ABCs.
  • Is the Airway open?
  • Is the patient Breathing well?
  • Does the patient’s Circulation seem OK?
  (check skin color and palpate pulses)
  • What is the patient’s level of Consciousness?
• Maintain normal body temperature.
• Call 911 for EMS personnel to respond immediately.

7.16 Electrical Shock
DO NOT TOUCH THE VICTIM UNTIL THE ELECTRICAL CURRENT HAS BEEN TURNED OFF!

7.16.1 As soon as the victim is free of contact from current:
• Start CPR if indicated.
• Call 911 for emergency response.
• Observe for further injuries such as burns, fractures, etc. and follow appropriate protocol.
- If a team member is exposed to electrical current, and there is any evidence of entrance and exit wounds, take them to a clinic or emergency room ASAP.
- If a team member is exposed to electrical current and there are no visible entrance or exit wounds, but they are showing signs of a problem, take them to a clinic or emergency room ASAP.
- If a team member gets a shock (small jolt with limited reaction such as jerking your hand back from the shock) and says they are shaken up but okay, then we should monitor them for signs of problems, but not necessarily take them to a clinic for medical evaluation. They must be monitored for the next 48 hours.
- Monitoring should include checking pulse and blood pressure regularly.

<table>
<thead>
<tr>
<th>Effects of Amount of AC Current 60 Cycles/Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 3 mA</td>
</tr>
<tr>
<td>More than 10 mA</td>
</tr>
<tr>
<td>More than 30 mA</td>
</tr>
<tr>
<td>More than 50 mA</td>
</tr>
<tr>
<td>100 mA to 4A</td>
</tr>
<tr>
<td>Over 4 A</td>
</tr>
</tbody>
</table>

**Note:** Any electrical shock that causes “no-let-go” muscle contraction associated with any other symptomatology (shortness of breath, weakness, loss of consciousness) should be evaluated at the nearest medical facility immediately.

Remember that any shock that “flattens” a person or causes any significant degree of tetany (muscle contraction/rigidity) warrants evaluation.

### 7.17 Eye Injuries

#### 7.17.1 Injuries to the eye
Injuries to the eye can involve the bone and soft tissue surrounding the eye or the eyeball. Blunt objects may injure the eye area or a smaller object may penetrate the eyeball. Care for open or closed wounds around the eyeball as you would for any other soft tissue injury. Injury to the eyeball itself requires different care. Injuries that penetrate the eyeball or cause the eye to be moved are very serious and can cause blindness. Never put direct pressure on the eyeball. Instead, follow these guidelines when providing care for major eye injuries.
- Place the victim on his/her back.
- Do not attempt to move any object impaled in the eye. If blood is present, use appropriate personal protection.
- Stabilize the impaled object and place as best you can. You can do this by using a fitted paper cup to support the object.
- Cover and close the unaffected eye to keep blood, dirt or fluid from entering.

Foreign bodies that get in the eye, such as dirt, sand or fibers, are irritants and may cause significant damage.
- First try to remove the foreign body by telling the victim to blink several times. This will produce tears that may help to flush out the object.
- Have the individual flush the eye briefly.
- If the object remains, the victim should receive professional medical attention.

**Note:** Flushing the eye with water is also appropriate if the victim has any chemical in his/her eye. The eye should be continuously flushed for at least 30 minutes. Advise patient to seek medical attention as soon as flushing complete.

#### 7.17.2 Flash burns of the eye:
The symptoms are acute pain, pain from light exposure, swelling, redness, marked tearing, and drainage.
7.17.3 Care for flashburns
Refer to medical facility for care. Patient may be transported by car (not to drive).
- Inspect eyes for foreign bodies. Treat as above if present.
- Apply ice compresses.
- Refer to medical care immediately.

7.18 Fainting
Fainting is a partial or complete loss of consciousness. It is caused by a temporary reduction of blood flow to the brain. When the brain is suddenly deprived of its normal blood flow, it momentarily shuts down and the person faints. It may be triggered by an emotional shock. It may also be caused by pain, a specific condition such as heart disease or by over-exertion. Any time changes inside the body momentarily reduce the blood flow to the brain, fainting may occur.

7.18.1 Signals of fainting
- Dizziness,
- Lightheaded
- Cool, pale, moist skin
- Numbness and tingling in the fingers or toes.

7.18.2 Care for fainting:
A. Do not allow victim to remain in upright position.
B. Elevate the victim’s legs 8-12 inches.
C. Loosen any restrictive clothing such as a belt, tie or collar.
D. Check the ABCs
   - Is the Airway open?
   - Is the patient Breathing well?
   - Does the patient’s Circulation seem OK?
   - (check skin color and palpate pulses)
   - What is the patient’s level of Consciousness?
E. Do not give the victim anything to eat or drink.
F. Observe for shock

Usually the victim of fainting recovers quickly with no lasting effects. However, you may not be able to determine whether the fainting is linked to a more serious condition. EMS personnel should be called immediately if there is any suspicion of a complicating problem such as hypovolemic shock.

7.19 Fractures and Dislocations
A fracture is a break or crack in the bone caused by a fall or direct or indirect blow to the part. Dislocation is displacement or separation of the bone from its normal position at a joint. Dislocations are usually caused by severe forces.

7.19.1 Common signs of fracture or dislocation
- Deformity.
- Moderate or severe swelling and discoloration.
- Inability to move or use the affected body part.
- Bone fragments protruding from a wound.
- The victim feels bones grating or felt or heard a snap or pop at time of injury.
- Loss of circulation in an extremity.

7.19.2 Care
- Rest the part.
- Ice.
- Elevation (if possible).
- Immobilization; avoid movement of the injured part.
- Arrange for medical attention immediately.
- Observe for shock
7.20 Frostbite
Frostbite is the freezing of body tissues. It usually occurs in exposed areas of the body depending on the air temperature, length of exposure and the wind. Signals of frostbite include lack of feeling in the affected area, skin that appears waxy or skin that is cold to the touch (skin that is discolored, flushed, white or yellow-blue).

7.20.1 Care for frostbite:
- Cover the affected area.
- Handle the area gently. Never rub an affected area.
- Warm the area gently by soaking the affected part in water no warmer than 100 to 105°F (lukewarm water).
- Bandage the area with a dry, sterile dressing.
- Avoid breaking any blisters.
- Seek professional medical attention as soon as possible.

7.21 Head Injury
Injuries to the head can affect the brain. Any significant force to the head can cause a concussion. A concussion is a temporary impairment of brain function which does not usually result in permanent physical damage to brain tissue.

7.21.1 Mechanism of injury
Consider the cause of the injury to assist in determining when a head injury may be major or minor. Survey the scene and evaluate the following:
- Force of impact.
- Weight of the object striking the individual.
- Distance from point of impact.
- A fall from a height greater than or equal to the victim’s height.

7.21.2 Signals of major head injuries
- Changes in level of consciousness. (Do they respond to verbal stimuli? Painful stimuli?)
- Severe pain or pressure in the head.
- Unusual bumps or depressions on the head.
- Blood or other fluids in the ears or nose.
- Profuse external bleeding of the head.
- Seizures.
- Impaired breathing or vision.
- Nausea or vomiting.
- Persistent headache.
- Loss of balance - dizziness.
- Bruising of the head, especially around the eyes and behind the ears.

7.21.3 Preliminary action
Determine the extent and severity of the injury and overall status of the victim.
- Monitor respiratory and circulatory status.
- Observe level of consciousness.
- Observe victim’s communicability - garbled speech, confusion, check memory loss, and verbal responses etc.

7.21.4 Care for major head injuries (see signals of major injury above)
- Minimize movement of the head and neck.
- Maintain an open airway.
- Monitor consciousness and breathing.
- Control any external bleeding.
- Maintain normal body temperature.
- Call 911 for immediate transfer to the hospital emergency department.

7.21.5 Care for minor head injury: (no signals of major head injury)
- Cleanse wound and apply sterile dressing as needed to control bleeding.
7.22 Hypovolemic Shock
Shock is a condition in which the circulatory system fails to circulate oxygen-rich blood to all parts of the body. When vital organs do not receive oxygen-rich blood, they fail to function properly.

Shock may result from loss of body fluid from severe bleeding, for example, or from hypoglycemia, anaphylaxis, and severe damage to the heart or blood vessels, heat stroke, severe infection, drugs or poisoning.

7.22.1 Signals of shock - All need not be present.
- Restlessness or irritability.
- Rapid or weak pulse.
- Rapid breathing.
- Pale or bluish, cool moist skin.
- Excessive thirst.
- Nausea and vomiting.
- Faint feeling.
- Drowsiness or loss of consciousness.
- Hypertension

7.22.2 Care for shock
- Monitor airway, breathing or circulation problems and vital signs.
- Control any external bleeding to minimize blood loss. Use appropriate personal protection.
- Elevate legs about 12 inches to keep blood circulating to vital organs unless you suspect head, neck or back injuries, or possible fractures of the hips or legs. In this case, keep victim lying flat.
- Call 911 immediately--a victim of shock requires advanced life support.
- Do not give victim anything to eat or drink even though he/she is likely to be thirsty. The victim’s condition may require surgery, in which case an empty stomach is more appropriate.

Remember that shock is a very serious, potentially life-threatening condition and the key to effectively manage the problem is to call EMS personnel immediately to start advanced life support.

7.23 Lacerations
Lacerations are a slice or tear in the skin or mucosa. This usually occurs from contact with sharp objects, machinery or from trauma to an area during a fall.

7.23.1 Care for lacerations
Control bleeding by using pressure and elevation. Apply direct pressure by placing a sterile dressing over the wound. Use appropriate personal protection.

Urge victim to seek medical attention promptly if:
- Opening which is over 2 cm in length or is estimated to be ½ to one cm in depth.
- Opening has gaping or jagged edges.
- Embedded material is present.
- A cut producing a flap, a cut to fingers, hands, toes, and feet or over joints is present that meets the above criteria of the length and depth.
- Laceration caused by human or animal bite.
- Laceration is on the face.
- Laceration has caused a functional disturbance. (e.g. finger won’t bend or is weak - implies tendon laceration)
- The bleeding won’t stop.
- Gross contamination is present.

7.23.2 Minor lacerations and scratches may be treated as follows:
- Wash wound thoroughly with soap and water.
- Place a sterile dressing over the wound.
- Using gloves apply direct pressure for a few minutes to control bleeding if necessary.
Once bleeding is controlled, remove the dressing and apply Bacitracin if no allergic history.
Apply a new sterile dressing.
Advise team member to seek medical attention with any problems.

7.24 Nosebleeds
Bleeding from the nose may be caused by trauma to the nose or head, a vascular or bleeding disorder, drying of mucous membranes, high altitudes, drugs or occupational exposure. Nosebleeds are not generally related to blood pressure.

7.24.1 Care for nosebleed
- Pinch nose together over soft tissues continuously for 20 minutes.
- Keep team member in sitting position with head forward.
- Advise team member to avoid blowing nose for two hours post nosebleed and advise, if it is necessary to sneeze, to do so with the mouth wide open.
- Advise team member to seek medical care with any problems.

7.25 Puncture Wounds
A puncture wound results when the skin is pierced with a pointed object such as a nail, a piece of glass, a splinter or a knife. Although puncture wounds generally do not bleed profusely, they are potentially more dangerous than wounds that do because they can more readily become infected. Objects penetrating the soft tissues carry microorganisms that cause infections.

7.25.1 Care for puncture wounds
- Clean area with soap and water.
- Apply Bacitracin ointment if no known allergy.
- Apply sterile dressing.
- Advise patient to seek medical care for tetanus* if appropriate or any problems.
- Tetanus immunization (DT) should be repeated every 10 years.

7.26 Spinal Injury
All suspected spinal injuries (such as from a fall) should be handled as fractures or dislocations.

7.26.1 Care
- Minimize movement of head or spine.
- Maintain an open airway.
- Monitor consciousness and breathing.
- Control external bleeding.
- Maintain normal body temperature.
- Call 911 to transport to emergency room.
- Do not move or reposition the worker unless absolutely necessary. Make every effort to stabilize the spine if movement is mandatory.

Note: See Person Down Evaluation/Response Protocol 9.3 Appendix. C.

7.27 Splinters or Slivers
Splinters or slivers are foreign bodies that have penetrated the soft tissue and remain imbedded in the open wound. Objects penetrating the soft tissue carry microorganisms that cause infection.

7.27.1 Care for splinters
- Cleanse the area with soap and water, carefully inspecting to evaluate the depth imbedded and the size, determining status of tetanus immunizations in all cases. Small superficial splinters and slivers that are lodged superficially under the skin and easily accessible may be removed with forceps if available. Wash area with soap and water after removal.
- If unable to easily remove, advise prompt medical attention.
- All patients with large or imbedded splinters or slivers should be advised to seek medical care as soon as possible. Preventing infection is crucial in cases of imbedded objects. The longer the object remains as a foreign body in the soft tissue, the more risk of infection.
7.28 Patient Transport Guidelines

7.28.1 Mandatory 911 Transport
- Moderate or severe respiratory difficulty.
- Chest pain.
- Uncontrolled bleeding.
- Symptoms of hypovolemic shock.
- Acutely painful condition that debilitates patient.
- Moderate to severe systemic allergic reactions.
- Electrical shock.
- Moderate to severe burns.
- Moderate to severe head injuries.

7.28.2 Non-Emergency Transport by other means
- Mild to moderate strains, sprains.
- Lacerations where bleeding is controlled.
- Local crush injuries to extremity.
- Small, localized burns.
- Minor head injuries.
- Splinters, slivers.
- Foreign body, eyes.
- Flash burns, eyes.

7.29 Upper Extremity Pain
Upper extremity pain without obvious injury can be caused by heart disease, disc herniations in the neck and other problems with blood vessels and nerves. Most upper extremity pain in the workplace is due, however, to overuse or repetitive motion type injuries.

7.29.1 Care for upper extremity pain
- Have team member stop performing any aggravating activities.
- If the injury is of very recent onset ice may be applied to the area.
- Advise and arrange medical attention.

8 Budget / Approval Process

8.1 It is the responsibility of each jobsite to procure and provide all materials and PPE required and provide necessary training.

9 Related Documents

9.1 See attachments.
First Aid Kit

- Latest 1st Aid Protocols with Addenda
- Scrub Brush (for instruments). A tooth brush will work.
- Splinter Forceps (1 pair)
- Non Latex Gloves (exam type ok)
- 250cc Saline Irrigating Solution
- 20cc Syringes (to irrigate wounds)
- Bacitracin Ointment (box-individual doses)
- Dressing (sterile) – 4 x 4 box
- Gauze Wrap – 2” rolls – 1 box
- Coban – 1” and 2” rolls
- Eye Wash Solution (6)
- Space Blanket (1)
- Sterile Q-tips (small box)
- Ibuprofen (individual box packets) i.e. Advil
- Acetaminophen (individual box packets) i.e. Tylenol
- Aspirin (used for heart attacks only)
- Poisoning – Poison Control Center Number 1-800-222-1222
- CPR Protective Mask with One-Way Valve (2)
- Package of Replacement One-Way Valves (1)
- Antiseptic Hand Cleaner Foam
- Cold Pack (5) (use ice if available)
- Paper Dressing Tape 1”
- Band-Aids (cloth – 1”)
- Band-Aids - finger tip and knuckle (cloth)
- Blood Stopper Pads
- Eye Contact Solution
- Glucose Paste

Note: All safety specialists should have a standard sphygmomanometer blood pressure cuff. Our medical director has advised against the use of automatic blood pressure machines due to the inconsistency of accuracy.
9.2 Appendix B

Blood Borne Pathogen Kit

- Non Latex Gloves (exam type ok)
- Biohazard Labels (4)
- Sharps Box (1 qt. container)
- Red Bags (4)
- Scrapers (2)
- Bleach (on hand but does not have to be in kit)
- Antiseptic Foam Hand Cleaner
- Face Mask with Plastic Eye Shield (use goggles instead if available)
Person Down Evaluation / Response

When a man is down, before further intervention:
Check ABC’s (see below)

Airway
- Air Exchanging □ Yes □ No
- If no, use jaw thrust to open airway
- DO NOT TIP HEAD BACK.

Breathing (look, listen, feel)
- If no, attempt ventilation □ Yes □ No

Circulation
- Pulse felt □ Yes □ No
- If no pulse and unresponsive
  - start chest compressions

Consciousness
- Awake, alert □ Yes □ No
- Responds to voice □ Yes □ No
- Responds to pain □ Yes □ No
- Unresponsive □ Yes □ No

Minimize movement of the head and neck
- (Maintain in line traction on head and neck) □ Yes □ No

Control any external bleeding with direct pressure □ Yes □ No

Call emergency for transport and further stabilization □ Yes □ No

When a person is down from other than a fall or major trauma:
Check ABC’s

Airway
- Air Exchanging □ Yes □ No
- If no, use jaw thrust to open airway
- DO NOT TIP HEAD BACK.

Breathing (look, listen, feel)
- If no, attempt ventilation □ Yes □ No

Circulation
- Pulse felt □ Yes □ No
- If no pulse and unresponsive
  - start chest compressions

Consciousness
- Awake, alert □ Yes □ No
- Responds to voice □ Yes □ No
- Responds to pain □ Yes □ No
- Unresponsive □ Yes □ No

Do not give victim anything to eat or drink (except in case of diabetic emergency)
Keep victim still and lying down until adequate evaluation/stabilization is complete (may require emergency response).

Call 911 for emergency response.
OSHA 300 Acceptable/Non-Recordable First Aid

- Non prescription medication at non-prescription strength (Ex: Ibuprofen (200mg) 2 tablets 3x a day)
- Tetanus shots
- Cleaning, flushing, or soaking wounds on the skin surface
- Wound coverage such as Band-Aids, gauze pads, and even Steri-strips and butterfly bandages
- Using hot or cold therapy
- Any totally NON RIGID (flexible) means of support (Ex: elastic bandages, wraps, etc.)
- Any temporary immobilization devices while transporting an accident victim
- Drilling fingernail or toenail to relieve pressure, or draining fluid from blisters
- Eye patches
- Simple irrigation or a cotton swab only to remove foreign objects not embedded in or adhered to the eye
- Simple irrigation, tweezers, cotton swab or other simple means to remove splinters or foreign material from areas other than the eye
- Finger guards
- Massage therapy
- Drinking fluids to relieve heat stress
- Liquid band-aid is acceptable, provided that medical documentation states clearly that it is used to protect and prevent infection and not to for wound closure

DON'T FORGET
Work Days VS Calendar Days
In order to prevent an OSHA lost time all medical paperwork must flow in “calendar days”. All documentation must show (even if not scheduled to work) that the employee had work capacity (ie. restricted or full duty)

Example: If an employee has surgery on a Friday their M1 must give them work capacity or return to work status for the following day (Saturday), if it says return to work the following Monday, this is considered an OSHA 300 lost time
9.5 Appendix E

How to Take Blood Pressure with Aneroid Sphygmomanometer

1) Remove all but last layer of clothing which should not be thicker than a standard cotton shirt.

2) Legs uncrossed, feet flat on floor

3) Optimally, 5 minutes of sitting quietly prior to measurement- several deep breaths (4 second inhale, 7 second breath hold and 8 second exhale) can reduce pressure

4) Identify correct cuff size (must fall within marked range on standard cuff or use large cuff -if large cuff not available and required please note)

5) Open release valve on pump

6) Locate the brachial pulse (search at medial third of elbow crease)

7) Apply cuff 1-2 inches above the elbow crease with the “artery” arrow pointing at the spot where you located the brachial pulse

8) While applying cuff firmly be sure to “milk” out all the residual air in the cuff

9) Place stethoscope into ears with the ear pieces facing forward (some stethoscopes may be neutral)

10) Support the arm at heart level

11) Place diaphragm of stethoscope over brachial artery with light to medium pressure

12) Inflate the cuff (when beginning your release you should have inflated the cuff to a level such that the initial travel of the pressure hand is smooth and you hear no sounds (see radial pulse pressure estimation or inflate to 170 in younger people or 180-200 in men over 40 and older persons)

13) Begin releasing the cuff at 2mm pressure increments per second

14) The first sound, which may be muffled, is the systolic reading

15) You may hear different gradients of sounds during the process but it is the very last sound you hear that indicates the diastolic pressure. This is often faint compared with earlier sounds

16) For approved automatic devices, follow suggested protocol.

Common Errors

1) Tight clothing on arm above cuff

2) Arm out of position (pressure rises as arm is lowered from heart level)

3) Crossed legs can raise pressure

4) Heavy pressure over brachial artery

5) Rapid deflation of cuff- misses some heart beats

6) Over inflation- Pain may spuriously elevate pressure

7) Missing first subtle sound and recording first loud sound- misses true systolic pressure

8) Pressing too hard when trying to find any pulse or when using the stethoscope
9) Poor listening or noise conflict in measuring area
10) Loose cuff or poor cuff fit
11) Stethoscope not properly oriented in ears

**Using the radial pulse to determine how high to inflate the cuff**

1) Locate the radial pulse—With palm up and the cuff in place, place your index and long fingers just to the outside of the stringy tendon at the medial wrist and just above the wrist crease.
2) Keep your fingers on the pulse as you inflate the cuff.
3) Note when the pulse disappears.
4) Deflate the cuff.
5) Now inflate the cuff to 20-30 points above your reading and measure pressure as above.

**The 5 phases of blood pressure sounds—May not all be present or detectable**

1) Faint repetitive tapping sound (systolic pressure)
2) Murmuring, swishing sound
3) Loud repetitive knocking sound
4) Muffled blowing sound
5) Disappearance of sound (diastolic pressure)

**What to do with elevated blood pressures**

1) Report all blood pressure (BP) readings to OMC in a timely fashion. Please feel free to call with any questions.

2) If initial BP readings taken as per above protocol persist at levels at or near **160/90** (non-emergent hypertension), repeat 2 X daily for 2-3 days and inform OMC as pressures are taken. OMC will help the team member get to their primary care provider. No other intervention required.

3) If BP readings, even in the same session, persist at or near **180/110** (requires treatment within days)
   - Report these readings to OMC,
   - Remove the team member from strenuous activity and
   - Urge that they contact their primary care provider within 24-48 hours.
   - OMC will assist in locating and scheduling physician care for those without established primary care.
   - Blood pressure monitoring by safety specialists will be necessary during this period to determine safe return to full work capacity.

4) If BP levels approach or exceed **220/120** (hypertensive emergency levels),
   - Contact clinic for verification of pressure.
   - If pressures in this range are verified or if verification is not possible, have team member contact primary care immediately.
   - If primary provider cannot be reached or prompt evaluation is otherwise deferred, take team member to emergency department for evaluation.
   - Notify OMC.
   - Return to work BP monitoring may be necessary in this circumstance.