

ENABLING OBJECTIVES:

- 4.5 Explain the purposes of first aid.
- 4.6 List the different types of injuries and the appropriate treatment for each in accordance with the lesson plan.

TOPIC OUTLINE

A. PURPOSE OF FIRST AID FOR RESCUE SWIMMER

- 1. Save life.
- 2. Prevent _____.
- 3. Prevent _____.
- 4. Treat for _____.
- 5. Basic principles of First Aid:
 - a. Act quickly, but effectively.
 - b. _____ the survivor in a calm manner.
 - c. Reveal only enough of the survivor’s injuries to ensure cooperation.
 - d. Do not discuss the survivor’s injuries with others while the survivor is in hearing range unless you’re uncertain about an injury or _____.
 - e. If survivor is in danger of further injury, remove them from the danger as quickly and smoothly as possible, without putting yourself at risk.

B. FIRST AID PROCEDURES

- 1. Treatment begins _____.
- 2. During an overland SAR, perform the _____. This is considered a “Load and Go” situation.
- 3. During an in-water SAR, first aid treatment begins in the _____.
- 4. All SAR capable aircraft utilize the level “_____” Medical Kit. The first step in the treatment of injuries is protecting yourself from bodily fluids as much as possible. Always utilize the surgical gloves found in the Level “A” Medical Kit at a minimum.

C. WOUNDS:

1. There are ____ classifications of wounds:
 - a. Bruise
 - b. Scrape/abrasion
 - c. Laceration (_____) and incision (_____).
 - d. Avulsion – Skin tissue is partially or completely torn away with _____.
 - e. _____ - Most susceptible to infection.

2. Infection is secondary to a wound. Never close or bandage a wound until it has been irrigated or cleaned out as much as possible.

3. If severe bleeding is present, do not worry about cleaning out the wound, control the bleeding.
 - a. Open Wounds
 1. Three types of bleeding:
 - a. _____: Large vessels that carry blood away from the heart. Bleeding is bright red and spurts from the wound.
 - b. _____: Small vessels that carry blood to all body parts. Bleeding is slow and oozes from wound.
 - c. _____: Veins carry blood to the heart. Bleeding is dark red and flows in a steady stream.

 2. Dressings and Bandages:
 - a: _____: pads placed directly on the wound to soak up blood and keep _____ out. These will not _____ to the wound.
 - b. _____: Used to wrap and hold dressings in place, apply pressure to help control bleeding, and help support an injured body part. Bandages include: Band-Aids, triangular bandages, and roller bandages made of gauze or elastic material.
 - c. Field Dressings are a _____.

 3. Control severe bleeding using the following methods:

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- a. _____ - place direct pressure on the wound using a sterile field dressing. A dressing may be created using any available equipment as necessary.

- b. _____ - elevate the affected extremity above the level of the _____.

NOTE

Do not elevate an extremity until it has been properly splinted if a fracture is suspected.

- c. Second dressing – apply a second dressing if the first bandage becomes blood-soaked. Wrap dressing in place with a roller bandage as needed. Ensure the Bandage is _____ or _____ to prevent loosening.

NOTE

Never remove a dressing once it has been applied. Place a new dressing over the existing one.

- d. Pressure points – apply pressure to the artery by pressing against the underlying bone at a point closest to the _____ and midway to the _____.

- e. _____ - used as a _____.

NOTE

Never remove a dressing once it has been applied. Place a new dressing over the existing one.

TOURNIQUET: as a last resort

- (1) When using a tourniquet, you risk sacrificing a limb in order to save a life.
- (2) Tourniquets are only placed on the _____ (arms and legs). Normally placed _____ above the wound.
- (3) If possible, place the tourniquet _____ a joint.
- (4) Write the _____ of the tourniquet on the front of the survivor’s shirt.
- (5) Write a capital “T” on the survivor’s forehead.
- (6) Leave the tourniquet visible.
- (7) **Never** use string, wire, or any thin material less than _____ wide.
- (8) Tighten only enough to _____.
- (9) **Never** _____ once it is in place.

WARNING

When practicing on a simulated survivor, **do not** tighten a tourniquet.

4. Signs of Internal Bleeding:

- a. Tender, swollen, bruised, or hard areas of the body (i.e.: the abdomen).
- b. Rapid, _____ pulse.
- c. Skin that feels _____ or looks _____.
- d. Vomiting or coughing up blood.
- e. _____.
- f. Becoming confused, _____.

D. SHOCK:

1. A life threatening condition usually due to _____ and caused by a _____ circulating through the body.

a. Signals of shock:

- (1) Restlessness or irritability (_____).
- (2) Altered level of _____.
- (3) _____.
- (4) _____.
- (5) Weak, rapid or absent pulse.

b. Late stages of shock include:

- (1) Bluish coloration around the _____ due to a prolonged lack of oxygen.
- (2) Loss of _____.
- (3) No breathing or absent _____.

2. All survivors will be in some form of shock. Position survivor for transport in the rescue vehicle in one of the following five positions:

NOTE

Maintain _____ of the head and neck if a head, neck, or spinal injury is suspected.

a. Traditional shock position:

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- (1) Use this shock position unless the survivor's injuries preclude it (if no other shock position is needed).
 - (2) Feet are elevated _____ inches above the level of the heart.
 - (3) When _____ are suspected, lift the foot end of the SAR Litter instead of the feet.
- b. Flat on back position
- (1) Use when _____ is suspected, the survivor has an eye injury, flail chest, signs of _____ in the abdomen or torso are present, or the survivor is unconscious upon your arrival.
 - (2) Position the survivor on their back, keeping the body as straight as possible.
- c. Side position
- (1) Used for a survivor with _____, bleeding from the _____, large amounts of oral secretions, a sucking chest wound or deviated trachea, or if a compressed air injury is suspected.
 - (2) Place a survivor with an open or closed chest wound, injured side _____. This position allows gravity to assist in drainage of blood and keeps the uninjured lung up.
 - (3) If a compressed air injury is suspected, place the survivor _____ down to keep air bubbles from forming in heart vessels.
- d. Knee's flexed position
- (1) Used for a survivor with _____ injuries. (Something going into or coming out of the abdomen). This position does not include internal bleeding in the abdomen.
 - (2) Lay the survivor on their back and raise their knees to approx. 45 degree angle. This will ease tension on the abdominal muscles.
- e. Semi-seated position
- (1) Not to be used if you suspect head, neck, or spinal injuries, or the survivor has ejected.
 - (2) Used for survivors with medical problems such as _____ or trouble breathing.
 - (3) Position the torso at 45-degree angle with legs _____.

NOTE

Survivor should be placed in the appropriate shock position upon completion of the Secondary Survey if feasible.

E. HEAD, NECK, AND SPINAL INJURIES:

1. Only an x-ray can truly determine internal head, neck, or spinal injuries. Suspect a head, neck, or spinal injury when:
 - a. Fall from height greater than the survivor's height.
 - b. Any diving (head first) mishap.
 - c. Any person found _____ for unknown reasons.
 - d. Any injury involving severe blunt force to the _____.
 - e. Any injury that _____ the head or trunk.
 - f. Any person thrown from a motor vehicle or not wearing a seat belt.
 - g. Any injury in which the victim's helmet is broken.
 - h. _____.
 - i. _____.

2. Signals of head, neck, and spinal injuries:
 - a. Change in level of _____.
 - b. Complaints of severe _____ in the head, neck, or back.
 - c. Tingling or _____ in the hands, fingers, feet, or toes.
 - d. Partial or complete loss of movement of any body part.
 - e. Unusual bumps or depressions on the _____.
 - f. Blood or other fluids in the ears or nose.
 - g. Heavy _____ of the head, neck, or back.
 - h. _____.
 - i. Impaired _____ or loss of balance as a result of injury.
 - j. Bruising of the head, especially around the eyes and/or behind the ears.

3. Treatment of head, neck, and spinal injuries during in-water rescue:
 - a. Treat all unconscious survivors or ejected aircrew as possible head, neck, and or spinal injury.
 - b. Upon gaining access to the survivor and establishing ABC's are present, perform all necessary disentanglement procedures and stabilize the _____ utilizing the SAR MEDEVAC litter as required.
 - c. This may prevent a potentially life threatening or permanent neurological injury from occurring.
 - d. As a Rescue Swimmer, you're goal is to get the survivor into the rescue platform as quickly and effectively as possible.

WARNING

In a water rescue situation, the survivor may be placed in a litter and hoisted horizontally to prevent the effects of _____.

4. Hydrostatic Squeeze
 - a. Water exerts pressure on a body immersed in it. This effect is called hydrostatic squeeze.
 - b. Vertical removal from the water relieves the pressure and causes blood to flow back to the lower extremities increasing the level of shock.
5. Treatment of head, neck, and spinal injuries during overland rescue:
 - a. Treat all unconscious survivors or ejected aircrew as possible head, neck, and or spinal injury.
 - b. Upon gaining access to the survivor and establishing ABC's are present, immediately take control of the _____ and apply a _____.
 - c. Complete a Primary Survey by treating all life threatening injuries, logroll the survivor onto the SAR MEDEVAC litter, and transport using litter-carry harness.

NOTE

Check for _____ prior to logrolling survivor. If a fracture is suspected, splint prior to logroll to avoid causing further injuries.

- d. If ABC's are not present, perform _____ of CPR and immediately logroll the survivor onto the litter and get them onto the rescue platform ASAP.

F. RESCUE LITTER PROCEDURES

1. Requires both a lead and an assistant rescuer.

- a. Lead will establish _____, while the assistant takes in-line stabilization of the head. Assistant will verbally direct the movement of the survivor during transfer to the litter.
- b. Lead will apply a _____ and conduct a _____ treating all life threatening injuries.
- c. Lead will then position the litter next to the survivor and position themselves perpendicular to the survivor's hips.
- d. On the assistant's 1...2...3... count, lead will grip the survivor's hips, logroll the survivor toward them, and check the survivor's _____ for injuries.
- e. The survivor is then rolled onto the litter and secured inside the litter straps.

G. FRACTURES AND DISLOCATIONS

1. A fracture is a _____, chip, or crack in a bone; classified as _____.
 - a. Open fractures:
 - (1) Involve _____. Any wound in which bone is seen or exposed is an open fracture.
 - (2) Treat the wound _____. Stop the bleeding.
 - (3) Do not attempt to set a broken bone.
 - b. Closed fractures:
 - (1) Involves a broken bone without an open wound.
 - (2) _____.
 - (3) Do not attempt to set a broken bone.
 - c. Dislocations:
 - (1) The separating of bones between a joint.
 - (2) May be very painful. Splint in place unless circulation below the joint is compromised.
2. Splinting – there are three types of splints:
 - a. Rigid
 - b. Soft
 - c. Anatomical

3. Splinting is done during the _____. After splinting and extremity, always check for a capillary refill to ensure proper _____.
4. If circulation is compromised or the injured extremity cannot be placed into the litter appropriately, it may be necessary to move the extremity to an _____ position.

H. RIB FRACTURE

1. Simple – 1 or 2 ribs broken can be in several places.
2. Flail Chest – 2 or more consecutive ribs broken in 2 or more places. Usually recognized by a section of the rib cage moving _____ of the normal breathing pattern.

I. OPEN AND CLOSED CHEST WOUNDS

1. Open Chest Wound – also known as a “_____”, occurs when air leaks into the chest cavity from an opening in the chest wall.
2. Due to increased air pressure outside of the body, the air is drawn into the chest as the survivor exhales, and causes the lung to _____.
3. Closed Chest Wound – occurs due to a puncture in the surface of the lung causing an increased air pressure in the chest cavity and forcing the lung to collapse. May be identified by the presence of a _____.

J. ABDOMINAL EVISCERATION

1. Extensive laceration to the abdominal wall causing some of the internal organs to push out.

K. PELVIC FRACTURE

1. The upper body rests on the spine connected to the pelvis. The legs are seated in the pelvic girdle. Essentially, the pelvis is the center of the body.
2. A survivor with a pelvic fracture will feel like they are coming apart and may be in extreme pain.
3. Gently press _____ and _____ against the hips to test for movement, grinding, and survivor response to pain.

L. BURNS

1. Burns result from heat, electricity, chemicals, and radiation.
2. Burns are determined by the depth of tissue damage:
 - a. 1st Degree (_____) – A sunburn. Involves the top layer of skin only.
 - b. 2nd Degree (_____) – Recognized by the blisters.

- c. 3rd Degree (_____) – All layers of skin and most or all underlying structures are destroyed. Identified by black or white charred tissue.

3. Steps for care:

- a. Assess the scene and remove the victim from the source.
- b. Cover with loose, dry, sterile dressing.
- c. **Do not** use _____ or _____ products on the burn.

4. Critical burn is any that:

- a. Involves difficulty breathing.
- b. Covers more than _____.
- c. Involves the _____.
- d. Results from Chemicals, explosions, or electricity.

M. ENVIRONMENTAL INJURIES

1. Heat related injuries:

- a. Heat Cramps – Painful muscle spasms, usually in the _____ or _____.
Care includes:

- (1) Laying the victim down in a cool place.
- (2) Give cool water or **moderate** amounts of commercial sports drink.
- (3) Light stretching of the affecting muscles might help.
- (4) Do not give _____, as they may worsen the condition.

- b. Heat Exhaustion – A more severe condition of heat cramps.
Signals include:

- (1) Normal to sub-normal skin temperature. Skin may be cool, moist, pale, or flushed.
- (2) _____.
- (3) _____.
- (4) Weakness and Fatigue/Exhaustion.

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- (5) Care is the same as _____.
- c. Heat Stroke – the least common, but most severe heat emergency.
Signals include:
- (1) Red, Hot, _____. Sweating has greatly reduced or has stopped.
 - (2) Change in level of consciousness (may be disoriented).
 - (3) Rapid, weak pulse.
 - (4) _____ breathing.
- d. Care for heat Stroke:
- (1) Cool the survivor immediately. Apply _____ to the wrists, ankles, groin, armpits, and neck. These areas are where heat is retained and the arteries are the most shallow.
 - (2) Ice or cold water baths are a _____ as they may trigger dangerous heart irregularities.
 - (3) **Do not** apply rubbing (isopropyl) alcohol.
2. Cold related injuries:
- a. Hypothermia – Condition where the body core temperature drops because of a failure to keep warm.
Signals include:
- (1) _____ - most important indicator regarding the survivor’s condition.
 - (2) _____.
 - (4) A glassy stare.
 - (5) Apathy – loss of hope.
 - (6) Loss of consciousness.

NOTE

Even in warm water, hypothermia is a life threatening condition.

- b. Care includes:
- (1) Remove any wet clothing and dry survivor.
 - (2) Gradually re-warm by wrapping in blankets and dry clothing (if available).

- (3) Move survivor to a warm place.
- (4) _____ May be necessary for survival.
- (5) Never rapidly re-warm the survivor, this may trigger dangerous heart irregularities.

N. COMPRESSED AIR INJURIES

- 1. May occur anytime a survivor breathes _____ underwater.
 - a. Helicopter Emergency Escape Device Systems (HEEDS).
 - b. Seat Pan Oxygen.
 - c. Self Contained Underwater Breathing Apparatus (SCUBA)
- 2. Air Embolus and Decompression Sickness (DCS or “the bends”).
 - a. Breathing compressed air under water causes gases to be absorbed into the blood.
 - b. Rapid ascent relieves pressure on the gases, causing them to come out of solution.
 - c. Air Embolus and DCS are caused by gas bubbles which expand during ascent. These can either block blood vessels, become trapped within joints, or they may travel between tissues.
 - d. The following symptoms may be present depending upon the location of the bubble:
 - 1. Disorientation or personality change
 - 2. Dizziness or blurred vision
 - 3. Numbness, tingling, or paralysis
 - 4. Chest pain
 - 5. Blood froth from the mouth or nose
 - 6. Convulsions
 - 7. Coughing or shortness of breath
 - 8. Unusual fatigue or weakness
 - 9. Skin itch
 - 10. Pain in the arms, legs or torso
- 4. Treatment of Air Embolus and DSC
 - a. Both Air Embolus and DSC require urgent recompression. Transport the survivor to capable facilities ASAP.
 - (1) Unpressurized aircraft fly at lowest safe altitude and limit altitude changes.
 - (2) Ensure Aircraft Commander contacts _____ before arrival.
 - (3) Administer CPR/Rescue breathing as required.

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- (4) Keep airway open. Survivor may vomit.
- (5) Keep survivor lying (_____) and quiet. This position causes the bubble(s) to rise away from the heart.

O. DEAD-ON-ARRIVALS (DOA'S)

- 1. Treat the victim as humanely and gently as possible. Recovery is necessary for autopsy investigation and proper burial.

P. PSYCHIATRIC EMERGENCIES

- 1. A sudden onset of behavioral or emotional responses that, if not responded to, may result in a life-threatening situation. In almost all cases, first aid treatment is a calm, professional understanding demeanor without aggravating the survivor.

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