

## Chapter 7

### EMERGENCY PLAN AND INITIAL INJURY EVALUATION

Major Concepts. Proper planning of an emergency response is essential for appropriate first aid management of an injury. Anything that can be done ahead of time to improve the health care of injured athletes should be a priority. Additionally having a plan provides legal protection against claims of negligence. According to Andersen et al., the emergency plan should be a written document and should:

1. Identify personnel directly involved with carrying out the plan and outline the qualifications of those executing it. Sports medicine professionals should be trained in automatic defibrillation, CPR, first aid, and prevention of disease transmission.
2. Specify equipment needed to carry out tasks involved in an emergency as well as its location.
3. Establish a mechanism for communication to emergency care service providers and transportation of the injured athlete.
4. Be specific, that is, derived from overall policies on emergency planning.
5. Incorporate the emergency care facilities to which the injured athlete will be taken.
6. Specify documentation needed to support the implementation and evaluation of the plan.
7. Be reviewed and rehearsed at least annually, and the results of these efforts should be documented. Documentation should indicate how the plan was changed as a result.
8. Be reviewed by the administration and legal counsel of the sponsoring organization or institution.

In high school settings, all personnel directly involved with the interscholastic sports program should participate in the development and implementation of the emergency plan. Coaches, administrators, team physician and athletic trainer, local EMS staff, etc. comprise the *emergency team*. The four functions of the members of the emergency team are:

1. Immediate care of the athlete.
2. Emergency equipment retrieval.
3. Activation of EMS if needed.
4. Directing EMS to injury scene.

The emergency plan needs to be comprehensive, outlining procedures for both home and out-of-town events. Additionally, the plan should include steps for dealing with emergency situations affecting fans or sideline participants. Additionally, the plan must include locations of phones, emergency phone numbers, directions to the site, access points, and other critical information.

EMS personnel should be present during the event, if possible. Additionally coaches should know where the EMS vehicle is parked, access routes to the playing area, and the location of keys to gates and

doors that may present barriers to emergency personnel. Coaches should carry a cell-phone at both games and practices with EMS phone numbers programmed into memory. Coaches should agree on the signal that will be used to alert EMS personnel to render care on the playing area.

I. Important Questions and Considerations. According to Nowlan et al., the major elements of an emergency plan are phones, gateways/passageways, emergency supplies, and emergency evaluation/care. See page 85 for specific points for each element.

## II. First Aid Training.

A. All personnel involved with organized sports programs should be trained in basic first aid, CPR, and the use of automated external defibrillators (AEDs). Training is offered by organizations such as the National Safety Council and the American Heart Association.

1. Training upgrading should be undertaken at least every 3 years, and “mock” emergency drills should be conducted to verify the effectiveness of the emergency plan.

## III. Injury-Evaluation Procedures.

### A. The Coach’s Responsibility.

1. Immediate care of any acute injury is critical to determine location and severity of the injury.

2. Coach must maintain a “clear head” and remain objective.

3. Coach must indicate that he or she is in charge of the injured athlete; by law, the coach is most often held accountable for proper injury management when no athletic trainer or physician is present.

4. Coaching personnel should be properly trained in first aid procedures, commonly referred to as **basic life support (BLS)**. Primary objective of BLS is to sustain the injured athlete’s until EMS personnel arrive.

5. BLS procedures are used primarily in cases of airway obstructions and respiratory and cardiac arrest. If left unattended, these conditions can result in rapid death.

a. Primary skills are airway assessment, airway opening techniques, rescue breathing, and CPR. These skills require periodic practice and updating.

6. Coaches must differentiate minor from major injuries.

B. The Evaluation Process. The emergency treatment protocol must be generic enough to be effective regardless of the injury.

1. By following the preplanned protocol, the coach is assured of evaluating all vital functions and then conducting a step-by-step examination to determine the extent of injury. As a result, tragedy can be avoided.

IV. Assessment of the Injured Athlete. The assessment has the initial survey followed by the physical exam.

The **initial survey** determines if the athlete's life is in immediate danger. The initial survey must first assess the nervous system followed by the respiratory system and circulatory system assessments. Generally, it is best not to move an athlete without a good reason, e.g., the athlete may need to be rolled onto his or her side for open airway assessment.

A. Nervous System. Responsive athlete? Before providing care for an injured athlete, his or her level of responsiveness needs to be determined.

1. The complex central nervous system (CNS) can be divided into two categories, brain and spinal cord. Using the National Safety Council's AVPU scale, one can assess the neurologic status of an injured person. According to this scale, A = alert and aware, V = responds to verbal stimulus, P = responds to painful stimulus, and U = unresponsive to any stimulus.

a. To determine if the athlete is *alert*, note if the athlete's eyes are open and the athlete can state his or her name, the date, time, and location.

b. If the athlete does not appear to be alert, verify his or her ability to establish *verbal* communication. If athlete communicates verbally, he or she is "*responsive to verbal stimulus*."

c. If the athlete is not able to communicate verbally, verify a response to *painful* stimulus by pinching the athlete on skin overlying a bony area or inside the upper arm or thigh. If athlete responds verbally, attempts to pull away, or responds through facial gestures, the athlete is described as "*responsive only to painful stimulus*."

d. If the athlete fails to show any type of response, he or she is *unresponsive* and described as "*unresponsive to any stimulus*."

2. If a spinal or head injury is suspected, immobilize the head and neck immediately.

B. Respiratory System. Assessment of the respiratory system is the first priority when giving first aid to an injured athlete. If observing the patient indicates he or she is responsive, then assume the athlete's airway is open and he or she is breathing.

1. Airway Assessment. Initial assessment can be asking the athlete a simple question. A response indicates the airway is open and circulation is adequate. If the athlete is unresponsive, assess for breathing first at the victim's head in the position he or she was found, if possible.

a. If no serious head or spinal injuries are apparent, use the head-tilt/chin lift method shown in Figure 7.3 on page 87. If the athlete is wearing a helmet or face mask, *do not remove* this equipment to open the airway.

b. If the person is not breathing and serious spinal or head injury is suspected, use the jaw-thrust technique shown in Figure 7-4 on page 88. Check for foreign objects in airway and remove such objects using the finger sweep method shown in Figure 7.5 on page 88.

## 2. Breathing Assessment

a. A responsive athlete is breathing but still needs to be observed for breathing difficulties or abnormal breathing sounds.

b. The unconscious athlete can be assessed quickly, once the airway is established. Remember to *look, listen, and feel*.

1) Look for the rise and fall of the athlete's chest.

2) Listen for the flow of air leaving the athlete's nose and mouth.

3) Feel for the air flow.

C. Circulatory System. This assessment determines the integrity of the heart and blood vessels. The two major concerns are the presence or absence of signs of circulation (breathing, coughing, movement) and the presence or absence of internal or external blood loss (hemorrhage).

1. Circulation Assessment. Responsive athlete who is breathing will have signs of circulation. In unresponsive athlete, the signs of circulation are breathing, coughing, and movements in response to the breaths (refer to Figure 7.7 on page 89).

a. If there are no signs of circulation, begin CPR. There is no reason to move the athlete.

2. Hemorrhage Assessment. Extensive external bleeding is extremely rare in athletics. Most external bleeding is obvious and can be controlled using direct pressure, elevation, pressure points, and/or a pressure bandage. Take precautions against exposure to blood or other bodily fluids by wearing medical exam gloves and eye protection.

3. Internal hemorrhage is difficult to detect; an early sign is **hypovolemic shock** that results from too little blood circulating in the body.

a. Signs of shock include rapid, weak pulse and rapid, shallow breathing. Other signs include moist, clammy-feeling skin, and blue discoloration inside lips and under the nail beds.

b. Shock is a true medical emergency that requires immediate treatment and transport to a medical facility.

D. The Initial Survey: Summary. If an open airway exists, breathing and pulse are normal, and no apparent bleeding is detected, the next step is the physical exam. The purpose of the physical exam is to give the injured athlete a complete evaluation for any injuries not found during the initial survey. An effective physical exam is conducted in a preplanned, sequential manner. The process should take a few minutes. Figure 7.8 on page 90 can help determine whether an athlete has sustained a life-threatening injury.

V. Physical Exam. The physical exam should enable the coach to collect enough information about the injury as possible. The essential parts of the survey are the observation, history, and palpation. It is important to monitor vital functions (respiration and circulation) because the athlete's condition can change.

A. Observation involves noting signs and symptoms related to the injury. **Signs** involve objective findings such as bleeding, discoloration, and deformity. Symptoms are subjective and may not be as reliable as signs. Symptoms include nausea, pain, and **point tenderness**.

1. Observation should begin before reaching the injured athlete. Note the athlete's body position and behavior. Witnessing the injury can provide some idea of the mechanism of injury.
2. With a responsive athlete, ask him or her to point to the site(s) of injury.
3. Look and feel for signs of injury, i.e., swelling, deformity, open wounds, discoloration, and compare with the opposite side of the body whenever possible. Use a scissors to cut away clothing over the suspected area and avoid moving or embarrassing the athlete, unless the injury is life-threatening.
4. The physical exam is a head-to-toe assessment of the athlete. Look and feel for deformity, open wounds, tenderness, and swelling (D-O-T-S). Start the examination at the athlete's head and progress down the rest of the body.

B. Shock is an acute, life-threatening condition in which the body fails to maintain adequate circulation to vital organs. Shock can result from severe hemorrhage, heart failure (cardiogenic), dilated blood vessels (neurogenic), and psychogenic responses (fainting).

1. Signs and symptoms include any combination of profuse sweating; cool, clammy-feeling skin; dilated pupils; elevated pulse and respiration; irritable behavior; extreme thirst; and nausea and/or vomiting.
2. Treatment includes having the athlete lying down (supine) with legs elevated about 8 to 12 inches. Cover the athlete with a blanket, monitor vital signs, and if a spinal injury is suspected, do not move the person.

C. Medical History. The purpose of taking a history is to collect information to identify the areas of the body that were injured and the severity of the injuries, as well as the mechanism(s) of injury. History begins as soon as you arrive on the scene. Taking a history involves verbal discussion with either the athlete and/or onlookers.

1. Questions should be simple and brief, and if possible, require yes or no answers. When asking questions, use easy-to-understand terms and avoid leading the athlete to the preferred answer.
2. Coach should maintain his or her composure.
3. Ask the athlete to explain what happened, if he or she heard any strange sounds during the injury, and if he or she feels any abnormality. Ask about the athlete's perceptions of the injury, and if there is any pain, ask where it hurts.
4. Inquire about any previous injury to the involved area(s).
5. History should always be passed on to the medical personnel who evaluate the athlete later.

D. In some cases, the nature of a medical emergency is difficult to ascertain, which can happen when an athlete has **exercise-induced asthma**, diabetes, epilepsy, or a head injury. Questions should seek relevant responses such as whether the athlete is taking any medication for a metabolic or other chronic condition.

E. Palpation. Palpation is defined as “the act of feeling with the hands for the purpose of determining the consistency of the part beneath.” With practice, palpation can become a useful skill that will assist in identification of muscle spasm, localized fever, deformity, swelling, crepitus, and skin tension.

1. Palpation is a learned skill that requires physical contact with the athlete. Care must be taken to avoid aggravating injuries.

2. It is recommended to begin palpating away from the injured areas, thus allowing the athlete to gain confidence in the coach’s skill. In extremity injuries, evaluate the uninjured limb first to provide a basis for comparison when evaluating the injury.

- a. Removal from Field/Court. During the examination, note significant findings for latter recall. The entire process should be completed in a matter of a few minutes, then appropriate first aid should be initiated.

- b. If the athlete is conscious and has no obvious injuries that preclude walking, he/she may leave the field under their own power (with assistance).

- c. If lower-extremity injury is present, use some form of passive transport system such as a stretcher, spine board, or two-person carry.

- d. If the athlete is unconscious or may have a neck injury, stay with the athlete, monitor vital signs, treat for shock, and summon EMS. Unless there athlete is likely to be injured further, there is *no justification* for moving him or her prior to the arrival of EMS personnel.

## VI. Return to Play?

A. Any athlete who leaves a practice or game with a neurologic injury should *not* be allowed to return until evaluated by a trained medical professional, even in cases referred to as “getting one’s bell rung.” Athletes suffering from heat-related problems should also be removed from participation and cleared for return only by a medical professional.

## VII. The Coach’s Limitations.

A. In the absence of a NATABOC-certified athletic trainer, medical doctor, or other designated health care professional, the coach is responsible for initial management of injuries. The coach must not overstep his or her bounds regarding training in first aid, experience, and expertise.

1. *Coaches should not perform any procedure that is clearly in the domain of a medical doctor, certified athletic trainer, or other allied health professional.*