

# PE 251

## First Aid and CPR

### Competencies

#### **RISK MANAGEMENT AND INJURY PREVENTION**

##### *Cognitive Domain*

- Identifies the physical and environmental risk factors associated with specific activities the physically active person may engage in.
- Outlines the basic concepts and practice of wellness screening.
- Identifies areas that athletic personnel or supervisors must be familiar with in order to avoid or reduce the possibility of injury or illness occurring to athletes and others engaged in physical activity
- Describes the principles of effective heat loss and heat illness prevention programs. These principles include, but are not limited to knowledge of the body's thermoregulatory mechanisms for acclimation and conditioning, fluid and electrolyte replacement requirements, proper practice and competition attire, and weight loss.
- Evaluates the accepted guidelines, recommendations, and policy and position statements of applicable governing agencies relating to practice during extreme weather conditions

##### *Psychomotor Domain*

- Collects and interprets climatic data with use of appropriate instruments or personal observation and applies this data to schedule physical activity.
- Implements prevention and treatment of environmental stress factors that pertain to acclimation and conditioning, fluid and electrolyte replacements, proper practice and competition attire, and weight loss.

##### *Affective Domain*

- Understands the need for cooperation among administrators, athletic personnel, certified athletic trainers, parents/guardians, other health care professionals, and athletes and others engaged in physical activity in the implementation of effective injury and illness prevention programs.
- Appreciates and respects the role of athletic personnel and supervisors in injury and illness prevention programs.
- Accepts moral, professional, and legal responsibility of conducting appropriate pre-participation examinations.
- Accepts and respects the established guidelines for scheduling physical activity to prevent exposure to unsafe environmental conditions.
- Appreciates the importance of the body's thermoregulatory mechanisms for acclimation and conditioning, fluid and electrolyte replacements, proper practice and competition attire, and weight loss.
- Values the importance of collecting data on temperature, humidity, and other environmental conditions that can affect the human body when exercising in adverse weather conditions.

#### **PATHOLOGY OF INJURIES AND ILLNESSES**

##### *Cognitive Domain*

- Describes the healing process of bone.
- Describes the signs and symptoms of deep and superficial vein thromboses, pulmonary embolism and other emboli, and myocardial infraction.

### *Affective Domain*

- Recognizes that physician consultation is a moral and ethical necessity in the diagnosis and treatment of pathologic conditions.
- Accepts the moral and ethical responsibility of maintaining current knowledge of the pathologic conditions of athletes and others involved in physical activity.
- Promotes accountability for moral and ethical decision-making in the treatment of pathologic conditions.

## **ASSESSMENT AND EVALUATION**

### *Cognitive Domain*

- Differentiates injury recognition, assessment, and diagnosis.
- Explains the relationship of injury assessment to the systematic observation of the person as a whole.
- Demonstrates knowledge of a systematic process that uses the medical or nursing model to obtain a history of an injury or illness that includes, but is not limited to, the mechanism of injury, chief complaint, and previous relevant injuries or illnesses.
- Explains how to take measurements of the neurological function of cranial nerves, spinal nerves, and peripheral nerves, and describes their relationships in a neurological examination.
- Describes the use of myotomes, dermatomes, and reflexes (deep tendon, superficial) including manual muscle-testing, range-of-motion testing, and distinguishes between primary, cortical, and discriminatory forms of sensation.
- Describes the use of basic somatotyping to quantify objective physical characteristics.
- Explains how to recognize and evaluate athletes and others involved in physical activity who demonstrate clinical signs and symptoms of environmental stress.
- Describes the signs and symptoms of injuries to the abdominal viscera.

### *Psychomotor Domain*

- Visually identifies clinical signs associated with common injuries and illnesses, such as the integrity of the skin and mucous membranes, structural deformities, edema, and discoloration.
- Assesses the neurological function of cranial nerves, spinal nerves, and peripheral nerves and assesses the level of spinal cord involvement following injury, including the function of dermatomes, myotomes, and reflexes
- Performs an appropriate examination to evaluate the return to activity of an individual who has sustained a head injury.

### *Affective Domain*

- Appreciates the importance of a systematic assessment process in the management of injuries and illness.
- Appreciates the practical importance of thoroughness in a clinical evaluation.
- Accepts the professional, ethical, and legal parameters that define the proper role of the certified athletic trainer in the evaluation and appropriate medical referral of injuries and illnesses of athletes and others involved in physical activity.

## **ACUTE CARE OF INJURIES AND ILLNESSES**

### *Cognitive Domain*

- Explains the legal, moral, and ethical parameters that define the scope of first aid and emergency care, and identifies the proper roles and responsibilities of the certified athletic trainer.
- Describes the availability, contents, purposes, and maintenance of contemporary first aid and emergency care equipment.
- Determines what emergency care supplies and equipment are necessary for event coverage, such as biohazardous waste disposal containers, splints, short-distance transportation equipment, emergency access tools, primary survey instruments (CPR mask, bag-valve-mask), and ice.

- Interprets standard nomenclature of athletic injuries and illnesses.
- Describes the principles and rationale for a primary survey of the airway, breathing, and circulation.
- Interprets vital signs as normal or abnormal including, but not limited to, blood pressure, pulse, respiration, and body temperature.
- Assesses pathological signs of injury including, but not limited to, skin temperature, skin color, skin moisture, pupil reaction, and neurovascular function.
- Applies the current standards of first aid, emergency care, rescue breathing, and cardiopulmonary resuscitation for the professional rescuer, including (1) use of a bag-valve-mask, (2) use of a pocket mask, and (3) the chin lift-jaw thrust maneuver.
- Describes the role and function of an automated external defibrillator in the emergency management of acute heart failure and abnormal heart rhythms.
- Describes the role and function of oxygen administration as an adjunct to cardiopulmonary resuscitation techniques.
- Recognizes the characteristics of common life-threatening conditions that can occur either spontaneously or as the result of direct trauma to the throat, thorax and viscera, and identifies the management of these conditions.
- Describes the management of external hemorrhage, including the location of pressure points, use of universal precautions, and proper disposal of biohazardous materials.
- Recognizes signs and symptoms associated with internal hemorrhaging.
- Recommends the appropriate use of aseptic or sterile techniques, approved sanitation methods, and universal precautions for the cleansing and dressing of wounds.
- Discriminates those wounds that require medical referral
- Explains the application principles of cold application, elevation, and compression in treatment of acute non-limb-threatening pathologies.
- Cites the signs, symptoms, and pathology of acute inflammation.
- Recognizes signs and symptoms of head trauma, including loss of consciousness, changes in standardized neurological, cranial nerve assessment, and other symptoms that indicate underlying trauma.
- Explains and interprets the signs and symptoms associated with increasing intracranial pressure.
- Explains the importance of monitoring a patient following a head injury, including obtaining clearance from a physician before further patient participation.
- Defines cerebral concussion and lists the signs and symptoms used to classify cerebral concussions according to accepted grading scales
- Recognizes the signs and symptoms of trauma to the cervical, thoracic and lumbar spines, the spinal cord, and spinal nerve roots, including neurological signs, referred symptoms, and other symptoms that indicate underlying trauma.
- Selects a cervical stabilization device that is appropriate to the circumstances of the injury.
- Recites the indications and guidelines for removing the helmet and shoulder pads from an athlete with a suspected cervical spine injury.
- Describes the proper techniques for removing the helmet and shoulder pads from an athlete with a suspected cervical spine injury.
- Describes the proper techniques and necessary supplies for removing equipment and clothing in order to evaluate and/or stabilize the involved area.
- Recognizes proper positioning and immobilization of a person with a suspected spinal cord injury when using a spine board or body splint, including preparatory positioning prior to placement of the spine board or body splint.
- Explains the need for leadership and teamwork when using a spine board or body splint.
- Identifies the appropriate short-distance transportation method for an injured athlete or other physically active individual, including immobilization if applicable.
- Recognizes the signs and symptoms of shock.
- Identifies the different types of shock type and the proper management of each.
- Differentiates the signs and symptoms of diabetic coma and insulin shock.

- Describes the proper treatments of diabetic coma and insulin shock.
- Describes the appropriate treatment of a seizure.
- Recognizes the signs and symptoms of toxic drug overdose.
- Describes the signs, symptoms, and causes of allergic, thermal, and chemical reactions of the skin.
- Recognizes the signs and symptoms of common infectious diseases, and takes appropriate steps to prevent disease transmission through appropriate medical referral
- Recognizes the signs, symptoms, and treatment of individuals suffering from adverse reactions to environmental conditions.
- Uses the information obtained during the examination to determine when to refer an injury or illness for further or immediate medical attention
- Describes the proper immobilization techniques and selects the appropriate splinting material to stabilize the injured joint or limb and maintain distal circulation.

### *Psychomotor Domain*

- Acquires and maintains skills in first aid and emergency care.
- Acquires and maintains skill in rescue breathing and CPR, including two-person skills and the use of a bag-valve-mask and a pocket mask.
- Performs a primary survey/assessment in appropriate situations.
- Performs a secondary survey/assessment, including obtaining a history, inspection/observation, palpation, and using special tests.
- Palpates a variety of anatomic locations to assess the pulse in resting (non-emergency) and trauma situations.
- Demonstrates proper use of universal precautions and aseptic or sterile techniques when controlling external hemorrhaging.
- Demonstrates proper wound cleaning and care, including the use of barriers, aseptic protocols, and disposal of biohazardous waste.
- Administers cryotherapy, elevation, and compression to a limb and/or joint.
- Assesses a patient for possible closed-head trauma using standard neurological tests and tests for cranial nerve function.
- Demonstrates the proper technique for removing a face from a helmeted athlete in respiratory distress or arrest.
- Demonstrates the proper technique for removing the helmet, shoulder pads, and other protective equipment from an athlete with a possible cervical injury.
- Demonstrates the proper technique for removing the helmet, shoulder pads, and other protective equipment from an athlete with an injury to the trunk or extremities.
- Applies various cervical stabilization devices correctly, with the victim in various positions.
- Performs the correct technique for moving an injured person safely onto a spine board for stabilization and transportation purposes.
- Palpates for the rigidity, guarding, and rebound tenderness of the abdomen associated with internal injury or illness.
- Performs proper care and positioning of an individual suffering from shock.
- Applies various types of splints to different body parts, employing different constructions of splinting materials and allowing for distal pulse palpation.
- Performs short-distance transportation using proper positioning techniques, immobilization, and appropriate transportation methods.
- Demonstrates the proper techniques for using ambulatory aids to coordinate movement on flat, slippery, or uneven terrain and to navigate steps, ramps, doors, or obstacles.
- Fabricates, applies, adjusts, and removes commonly used immobilization devices.
- Fabricates, applies, adjusts, and removes special protective equipment

### *Affective Domain*

- Appreciates the medical-legal and ethical protocol governing the referral of injured and ill athletes and other individuals engaged in physical activity.

- Appreciates the legal, moral, and ethical parameters that define the scope of first aid and emergency care, and values the proper role of the certified athletic trainer in providing this care.
- Appreciates the roles and responsibilities of various community-based emergency care personnel
- Appreciates the role and function of various medical/paramedical specialties, and values their respective areas of expertise in the definitive treatment of acute injuries and illnesses.
- Values the importance of certification in first aid and emergency care and cardiopulmonary resuscitation.
- Appreciates the systematic approach to acute injury or illness of the secondary survey components of obtaining a history, inspection/observation, palpation, and using special tests.
- Realizes the importance of identifying signs and symptoms in cases of possible shock, internal bleeding, and closed-head trauma
- Advocates the principles of proper splinting techniques to prevent further injury.
- Appreciates the construction of various splinting devices and the appropriate uses for each.
- Appreciates state laws, rules, and regulations governing the application of immobilization devices
- Values the proper positioning and securing of a person with a suspected spinal injury onto a spine board or body splint, including preparatory positioning prior to placement of the spine board or body splint, as critical for prevention of further trauma.
- Appreciates the need for leadership and teamwork when using a spine board or body splint.
- Respects short-distance transportation techniques as a crucial means of moving an injured person
- Supports the application of cryotherapy, elevation, and compression as primary care for a non-threatening injury.
- Accepts the approved aseptic and sterile methods for cleaning, treating, and bandaging wounds and for disposing of biohazardous waste.

## **PHARMACOLOGY**

### *Cognitive Domain*

- Identifies the common resources used to identify indications, contraindications, precautions, and adverse reactions for prescription and nonprescription medications
- Identifies common methods used to administer medication.
- Recognizes that adverse drug reactions can be immediate (acute) or delayed (chronic).
- Describes the potential risks of co-interaction between two or more pharmaceutical agents.
- Lists the general indications, contraindications, and adverse reactions of commonly used prescription and nonprescription analgesic medications.
- Lists the general indications, contraindications, and adverse reactions of prescription and nonprescription local anesthetics.
- Identifies the general indications, contraindications, and adverse reactions of anaphylaxis medications.
- Identifies the general adverse reactions of gastrointestinal prescription and nonprescription medications.
- Recalls the general indications, contraindications, and adverse reactions of prescription and nonprescription topical applications.

### *Psychomotor Domain*

- Replicates the procedure for using an emergency epinephrine injection to prevent anaphylaxis as per physician instruction.
- Replicates procedures for using an asthmatic inhaler to prevent and treat exercise-induced bronchial spasms and/or asthmatic conditions.

### *Affective Domain*

- Recognizes that pharmacology applies to the immediate and ongoing care of injury and illness.
- Recognizes the importance of pharmacological concepts in health care.

## **GENERAL MEDICAL CONDITIONS AND DISABILITIES**

### *Cognitive Domain*

- Identifies common illnesses and diseases of the body's systems based on contemporary epidemiological studies of the injuries of athletes and others involved in physical activity.
- Describes the general principles of health maintenance and personal hygiene, including skin care, dental hygiene, sanitation, immunizations, avoidance of infectious and contagious diseases, diet, rest, exercise, and weight control.
- Identifies the possible causes of sudden death syndrome among athletes and others involved in physical activity.
- Describes common heart conditions, such as coronary artery disease, hypertrophic cardiomyopathy, heart murmurs, and mitral valve prolapse.
- Identifies the typical symptoms and clinical signs of an injury or illness, including those associated with local tissue inflammation and systemic infection
- Describes the common conditions that affect the liver, gall bladder, and pancreas
- Explains and recognizes the etiology, signs, symptoms, and management of diabetes mellitus.
- Describes the signs and symptoms of the common disorders of the gastrointestinal tract.
- Lists examples of the common conditions of the urinary tract, kidneys, and bladder
- Lists the common infections and conditions of the male reproductive organs
- Lists the common infections and conditions of the female reproductive organs
- Describes the common conditions of the breast
- Describes the various menstrual irregularities, the relationship that physical activity plays in their development, their resolutions, and their implications on performance, as well as detrimental systemic effects
- Recognizes skin lesions , infections, and disorders
- Identifies skin infections that are potentially contagious
- Recognizes conditions that affect bones and joints
- Describes common conditions that affect muscles
- Recognizes the main cerebral lesions caused by trauma
- Describes the etiology, signs, symptoms, and management of convulsive disorders.
- Recognizes postconcussional syndrome.
- Identifies the common signs and symptoms of contagious viral diseases.

### *Psychomotor Domain*

- Manages acute asthma attacks and takes appropriate steps to reduce the frequency and severity of asthma attacks.
- Recognizes and refers individuals exhibiting a history, signs, and symptoms of cardiopulmonary conditions to the appropriate medical authority.
- Recognizes and manages the common disorders of the gastrointestinal tract.
- Recognizes and applies the appropriate treatments for diabetic coma and insulin shock.
- Acts quickly to contain skin infections that are potentially contagious, and refers the patient when appropriate.
- Takes the appropriate steps to treat a seizure.
- Recognizes and takes the appropriate steps to manage and control common contagious viral and infectious diseases.
- Uses a penlight to examine pupil responsiveness, equality, and ocular motor function.
- Palpates the abdominal quadrants for tenderness and rigidity
- Assesses vital signs.
- Refers an individual who presents with complaints, signs, and/or symptoms of genitourinary or reproductive disorders to a physician.

### *Affective Domain*

- Supports the moral and ethical behavior of athletic trainers in issues dealing with diseases of athletics and physical activity.
- Recognizes the moral and ethical responsibility of taking situational control in the containment of common contagious viral and infectious diseases.
- Accepts the roles of medical and allied health personnel in the referral, management, and treatment of athletes and others involved in physical activity suffering from general medical conditions.

## **NUTRITIONAL ASPECTS**

### *Cognitive Domain*

- Applies the principles of nutrition, including the roles of fluids and electrolytes, vitamins, minerals, ergogenic aids, macronutrients, carbohydrates, protein, fat, and dietary supplements, as they relate to the dietary and nutritional needs of athletes and others involved in physical activity.
- Identifies the consequences of improper fluid replacement.
- Describes the signs, symptoms, and physical consequences of disordered eating.

### *Affective Domain*

- Recognizes the need for and implements proper referral for eating disorders.

## **PSYCHOSOCIAL INTERVENTION AND REFERRAL**

### *Cognitive Domain*

- Identifies the symptoms and clinical signs of common disordered eating and the psychological and sociocultural factors associated with these disorders.
- Describes commonly abused substances and their impact on an individual's health and physical performance
- Recognizes the signs and symptoms of drug abuse and the use of ergogenic aids and other substances.
- Identifies the societal influences toward substance abuse in the athletic and physically active population.
- Contrasts psychological and physical dependence, tolerance, and withdrawal syndromes that may be seen in individuals addicted to alcohol, prescription or nonprescription medications, and/or 'street' drugs.
- Describes the basic signs and symptoms of mental disorders (psychoses), emotional disorders, or personal/social conflict and the appropriate referral.
- Identifies contemporary personal, school, and community health service agencies, such as community-based psychological and social support services.
- Formulates a plan for appropriate psychological intervention and referral with all involved parties when confronted with a catastrophic event.
- Describes the acceptance and grieving processes that follow a catastrophic event.
- Identifies the stress-response model and how it may parallel an injury.
- Cites the potential need for psychosocial intervention and referral when dealing with populations requiring special consideration.

### *Psychomotor Domain*

- Intervenes, when appropriate, with an individual with a suspected substance abuse problem.
- Uses appropriate community-based resources for psychosocial intervention.

### *Affective Domain*

- Recognizes the certified athletic trainer's role as a liaison between the physically active, athletic personnel, health care professionals, parents/guardians, and the public.

- Accepts the moral and ethical responsibility to intervene in situations of suspected or known use and/or abuse of legal and illegal drugs and chemicals.
- Accepts the moral and ethical responsibility to intervene in situations of mental, emotional, and/or personal/social conflict
- Recognizes athletes and other physically individuals as deserving of quality professional health care.
- Accepts the individual's physical complaint(s) without personal bias or prejudice.

## **HEALTH CARE ADMINISTRATION**

### *Cognitive Domain*

- Describes typical community-based emergency health care delivery plans, including communication and transportation systems.
- Recognizes and appraises emergency action plans, which include on-site care, notification of emergency medical services (EMS), location of exits, and other relevant information, for the care of acutely injured or ill individuals.
- Identifies the typical availability, capabilities, and policies of community-based emergency care facilities and community-based managed care systems.
- Interprets the typical administrative policies and procedures that govern first aid and emergency care, such as those pertaining to parents/guardians, informed consent, media relations, incident reports, and appropriate record keeping.
- Identifies the basic components of a comprehensive athletic injury emergency care plan, which include (1) personnel training, (2) equipment needs, (3) availability of emergency care facilities, (4) communication, (5) transportation, (6) activity or event coverage, and (7) record keeping.
- Assembles an emergency action plan for all settings that includes on-site care, notification of EMS or appropriate personnel, and location of exit and evacuation routes.
- Selects sideline emergency care supplies and equipment that are necessary and appropriate for the setting.
- Summarizes basic legal concepts, such as, but not limited to, standard of care, scope of practice, liability, negligence, informed consent, and confidentiality, as they apply to a medical or allied health care practitioner's performance of his or her responsibilities
- Describes the role and function of various community-based medical, paramedical, and other health care providers.
- Describes the roles of various personnel in the organization of activity sessions and methods of instruction for athletes and others involved in physical activity.
- Explains the protocol that governs the referral of patients to medical or paramedical specialists and other health care providers.
- Locates and interprets current banned-drug lists that are published by various governing athletic associations
- Identifies the current developments, missions, objectives, and professional activities of other allied health and medical organizations and professions.
- Identifies the roles and responsibilities of allied health care personnel in providing services to athletes and others involved in physical activity.

### *Psychomotor Domain*

- Develops a risk management plan that addresses issues of liability reduction, security, fire, facility hazards, electrical and equipment safety, emergency preparedness, and hazardous chemicals

## **PROFESSIONAL DEVELOPMENT AND RESPONSIBILITIES**

### *Cognitive Domain*

- Properly interprets the role of the certified athletic trainer as a health care provider, and provides information regarding the role of the certified athletic trainer to athletes, the physically active, parents/guardians, athletic department personnel, and others.

# PROFICIENCIES

## INSTRUCTED & EVALUATED

### **Acute Care of Injuries and Illnesses**

The student will demonstrate the ability to implement an EAP for an activity, setting, or event.

The student will correctly triage emergency situations.

The student will demonstrate the ability to

- manage open and closed wounds
- apply direct and indirect pressure to control bleeding
- clean, debride, and protect an open wound
- apply superficial skin closures
- properly apply and remove gloves and other personal protective equipment
- properly dispose of biohazardous waste
- apply appropriate dressing
- apply ice, compression, and elevation to an acute sprain, strain, or contusion

The student will demonstrate the ability to

- select and apply an appropriate splint to a sprain, strain, fracture, subluxation, and dislocation
- stabilize and spine board or body splint an adult or child with a suspected spinal injury

The student will evaluate and manage the following:

- heat exhaustion
- heat stroke
- heat syncope
- hypothermia

The student will demonstrate the ability to

- establish and manage an airway
- establish and manage an airway in an athlete wearing protective headgear
- perform CPR on an adult or child with or without a spinal injury
- use a bag-valve-mask (BVM) on an adult or child for rescue breathing
- use a protective pocket mask/shield on an adult or child for rescue breathing

The student will demonstrate the ability to

- stabilize and transport an adult or child with a head and/or spinal injury
- stabilize and transport an adult or child with a fracture and/or dislocation

The student will demonstrate the ability to

- perform two-person CPR

## **Pharmacology**

The student will replicate the following procedures for using an emergency epinephrine injection to prevent anaphylaxis:

- identify indications for an epinephrine injection
- demonstrate proper use through verbal and nonverbal instruction
- identify signs and symptoms that might indicate an allergic reaction to or overdose of epinephrine
- demonstrate proper storage of epinephrine injectable
- demonstrate proper disposal of used injection system

The student will replicate the following procedures for using an emergency bronchodilator (inhaler) to prevent asthma attacks:

- identify indications for use of a bronchodilator
- demonstrate proper use through verbal and nonverbal instruction
- identify signs and symptoms that might indicate an allergic reaction to or overdose of a bronchodilator
- demonstrate proper storage of a bronchodilator

## **General Medical Conditions and Disabilities**

The student will palpate the four abdominal quadrants to assess for the following:

- guarding and rigidity
- pain

The student will identify pathological breathing patterns to make a differential assessment for the following respiratory conditions:

- apnea
- bradypnea
- tachypnea
- dyspnea
- hyperventilation
- obstructed airway

The student will measure urine values with Chemstrips (dipsticks)

The student will recognize the signs, symptoms, and predisposing conditions associated with the following diseases and conditions:

- Gastrointestinal Tract
  - appendicitis
  - gastritis
  - colitis
  - gastroenteritis
  - constipation
  - indigestion
  - diarrhea
  - ulcer
  - esophageal reflux
  - irritable bowel syndrome

## **Nutritional Aspects**

The student will demonstrate the ability to access and recommend nutritional guidelines for the following:

- fluid replacement

The student will simulate intervention with an individual who has the signs and symptoms of disordered eating.

The student will identify proper referral sources for disordered eating.

### **Psychosocial Intervention And Referral**

The student will simulate intervention with an individual who has a substance abuse problem and recommend appropriate referral.

The student will simulate a confidential conversation with a health care professional concerning suspected substance abuse by an athlete or other physically active individual.

### **Health Care Administration**

The student will demonstrate appropriate communication skills.

- calm, reassure, and explain a potentially catastrophic injury to an injured adult or child, athletic personnel, and/or family member.
- effectively communicate and work with physicians, emergency medical technicians (EMTs), and other members of the allied health care community and sports medicine team
- appropriately communicate with athletic personnel and family members
- use ethnic and cultural sensitivity in all aspects of communication
- communicate with diverse community populations