

Appendix E

Athletic Training Education Competencies
5th Edition

Foundational Behaviors of Professional Practice

These basic behaviors permeate professional practice and should be incorporated into instruction and assessed throughout the educational program.

Primacy of the Patient

- Recognize sources of conflict of interest that can impact the client's/patient's health.
- Know and apply the commonly accepted standards for patient confidentiality.
- Provide the best healthcare available for the client/patient.
- Advocate for the needs of the client/patient.

Team Approach to Practice

- Recognize the unique skills and abilities of other healthcare professionals.
- Understand the scope of practice of other healthcare professionals.
- Execute duties within the identified scope of practice for athletic trainers.
- Include the patient (and family, where appropriate) in the decision-making process.
- Work with others in effecting positive patient outcomes.

Legal Practice

- Practice athletic training in a legally competent manner.
- Identify and conform to the laws that govern athletic training.
- Understand the consequences of violating the laws that govern athletic training.

Ethical Practice

- Comply with the NATA's *Code of Ethics* and the BOC's *Standards of Professional Practice*.
- Understand the consequences of violating the NATA's *Code of Ethics* and BOC's *Standards of Professional Practice*.
- Comply with other codes of ethics, as applicable.

Advancing Knowledge

- Critically examine the body of knowledge in athletic training and related fields.
- Use evidence-based practice as a foundation for the delivery of care.
- Appreciate the connection between continuing education and the improvement of athletic training practice.
- Promote the value of research and scholarship in athletic training.
- Disseminate new knowledge in athletic training to fellow athletic trainers, clients/patients, other healthcare professionals, and others as necessary.

Cultural Competence

- Demonstrate awareness of the impact that clients'/patients' cultural differences have on their attitudes and behaviors toward healthcare.
- Demonstrate knowledge, attitudes, behaviors, and skills necessary to achieve optimal health outcomes for diverse patient populations.
- Work respectfully and effectively with diverse populations and in a diverse work environment.

Professionalism

- Advocate for the profession.
- Demonstrate honesty and integrity.
- Exhibit compassion and empathy.
- Demonstrate effective interpersonal communication skills.

Evidence-Based Practice (EBP)

Evidence-based practitioners incorporate the best available evidence, their clinical skills, and the needs of the patient to maximize patient outcomes. An understanding of evidence-based practice concepts and their application is essential to sound clinical decision-making and the critical examination of athletic training practice.

Practicing in an evidence-based manner should not be confused with conducting research. While conducting research is important to the profession of athletic training, developing the ability to conduct a research project is not an expectation of professional education. This section focuses on the knowledge and skills necessary for entry-level athletic trainers to use a systematic approach to ask and answer clinically relevant questions that affect patient care by using review and application of existing research evidence. One strategy, among others, is to use a five-step approach: 1) creating a clinically relevant question; 2) searching for the best evidence; 3) critically analyzing the evidence; 4) integrating the appraisal with personal clinical expertise and patients' preferences; and 5) evaluating the performance or outcomes of the actions. Each competency listed below is related to such a systematic approach and provides the building blocks for employing evidence-based practice. Other specific evidence-based practice competencies have also been included in appropriate content areas.

All items listed in parentheses (e.g.) are intended to serve as examples and are not all encompassing or the only way to satisfy the competency.

Knowledge and Skills

- EBP-1.** Define evidence-based practice as it relates to athletic training clinical practice.
- EBP-2.** Explain the role of evidence in the clinical decision making process.
- EBP-3.** Describe and differentiate the types of quantitative and qualitative research, research components, and levels of research evidence.
- EBP-4.** Describe a systematic approach (e.g., five step approach) to create and answer a clinical question through review and application of existing research.
- EBP-5.** Develop a relevant clinical question using a pre-defined question format (e.g., PICO = Patients, Intervention, Comparison, Outcomes; PIO = Patients, Intervention, Outcomes).
- EBP-6.** Describe and contrast research and literature resources including databases and online critical appraisal libraries that can be used for conducting clinically-relevant searches.
- EBP-7.** Conduct a literature search using a clinical question relevant to athletic training practice using search techniques (e.g., Boolean search, Medical Subject Headings) and resources appropriate for a specific clinical question.
- EBP-8.** Describe the differences between narrative reviews, systematic reviews, and meta- analyses.
- EBP-9.** Use standard criteria or developed scales (e.g., Physiotherapy Evidence Database Scale [PEDro], Oxford Centre for Evidence Based Medicine Scale) to critically appraise the structure, rigor, and overall quality of research studies.
- EBP-10.** Determine the effectiveness and efficacy of an athletic training intervention utilizing evidence-based practice concepts.
- EBP-11.** Explain the theoretical foundation of clinical outcomes assessment (e.g., disablement, health-related quality of life) and describe common methods of outcomes assessment in athletic training clinical practice (generic, disease-specific, region-specific, and dimension-specific outcomes instruments).

- EBP-12.** Describe the types of outcomes measures for clinical practice (patient-based and clinician-based) as well as types of evidence that are gathered through outcomes assessment (patient-oriented evidence versus disease-oriented evidence).
- EBP-13.** Understand the methods of assessing patient status and progress (e.g., global rating of change, minimal clinically important difference, minimal detectable difference) with clinical outcomes assessments.
- EBP-14.** Apply and interpret clinical outcomes to assess patient status, progress, and change using psychometrically sound outcome instruments.

Prevention and Health Promotion (PHP)

Athletic trainers develop and implement strategies and programs to prevent the incidence and/or severity of injuries and illnesses and optimize their clients'/patients' overall health and quality of life. These strategies and programs also incorporate the importance of nutrition and physical activity in maintaining a healthy lifestyle and in preventing chronic disease (e.g., diabetes, obesity, cardiovascular disease).

Knowledge and Skills

General Prevention Principles

- PHP-1.** Describe the concepts (e.g., case definitions, incidence versus prevalence, exposure assessment, rates) and uses of injury and illness surveillance relevant to athletic training.
- PHP-2.** Identify and describe measures used to monitor injury prevention strategies (e.g., injury rates and risks, relative risks, odds ratios, risk differences, numbers needed to treat/harm).
- PHP-3.** Identify modifiable/non-modifiable risk factors and mechanisms for injury and illness.
- PHP-4.** Explain how the effectiveness of a prevention strategy can be assessed using clinical outcomes, surveillance, or evaluation data.
- PHP-5.** Explain the precautions and risk factors associated with physical activity in persons with common congenital and acquired abnormalities, disabilities, and diseases.
- PHP-6.** Summarize the epidemiology data related to the risk of injury and illness associated with participation in physical activity.

Prevention Strategies and Procedures

- PHP-7.** Implement disinfectant procedures to prevent the spread of infectious diseases and to comply with Occupational Safety and Health Administration (OSHA) and other federal regulations.
- PHP-8.** Identify the necessary components to include in a preparticipation physical examination as recommended by contemporary guidelines (e.g., American Heart Association, American Academy of Pediatrics Council on Sports Medicine & Fitness).
- PHP-9.** Explain the role of the preparticipation physical exam in identifying conditions that might predispose the athlete to injury or illness.
- PHP-10.** Explain the principles of the body's thermoregulatory mechanisms as they relate to heat gain and heat loss.

- PHP-11.** Explain the principles of environmental illness prevention programs to include acclimation and conditioning, fluid and electrolyte replacement requirements, proper practice and competition attire, hydration status, and environmental assessment (e.g., sling psychrometer, wet bulb globe temperatures [WBGT], heat index guidelines).
- PHP-12.** Summarize current practice guidelines related to physical activity during extreme weather conditions (e.g., heat, cold, lightning, wind).
- PHP-13.** Obtain and interpret environmental data (web bulb globe temperature [WBGT], sling psychrometer, lightning detection devices) to make clinical decisions regarding the scheduling, type, and duration of physical activity.
- PHP-14.** Assess weight loss and hydration status using weight charts, urine color charts, or specific gravity measurements to determine an individual's ability to participate in physical activity in a hot, humid environment.
- PHP-15.** Use a glucometer to monitor blood glucose levels, determine participation status, and make referral decisions.
- PHP-16.** Use a peak-flow meter to monitor a patient's asthma symptoms, determine participation status, and make referral decisions.
- PHP-17.** Explain the etiology and prevention guidelines associated with the leading causes of sudden death during physical activity, including but not limited to:
- PHP-17a.** Cardiac arrhythmia or arrest
 - PHP-17b.** Asthma
 - PHP-17c.** Traumatic brain injury
 - PHP-17d.** Exertional heat stroke
 - PHP-17e.** Hyponatremia
 - PHP-17f.** Exertional sickling
 - PHP-17g.** Anaphylactic shock
 - PHP-17h.** Cervical spine injury
 - PHP-17i.** Lightning strike
- PHP-18.** Explain strategies for communicating with coaches, athletes, parents, administrators, and other relevant personnel regarding potentially dangerous conditions related to the environment, field, or playing surfaces.
- PHP-19.** Instruct clients/patients in the basic principles of ergonomics and their relationship to the prevention of illness and injury.

Protective Equipment and Prophylactic Procedures

- PHP-20.** Summarize the basic principles associated with the design, construction, fit, maintenance, and reconditioning of protective equipment, including the rules and regulations established by the associations that govern its use.
- PHP-21.** Summarize the principles and concepts related to the fabrication, modification, and appropriate application or use of orthotics and other dynamic and static splints.
- PHP-22.** Fit standard protective equipment following manufacturers' guidelines.
- PHP-23.** Apply preventive taping and wrapping procedures, splints, braces, and other special protective devices.

Fitness/Wellness

- PHP-24.** Summarize 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.
- PHP-25.** Describe the role of exercise in maintaining a healthy lifestyle and preventing chronic disease.
- PHP-26.** Identify and describe the standard tests, test equipment, and testing protocols that are used for measuring fitness, body composition, posture, flexibility, muscular strength, power, speed, agility, and endurance.
- PHP-27.** Compare and contrast the various types of flexibility, strength training, and cardiovascular conditioning programs to include expected outcomes, safety precautions, hazards, and contraindications.
- PHP-28.** Administer and interpret fitness tests to assess a client's/patient's physical status and readiness for physical activity.
- PHP-29.** Explain the basic concepts and practice of fitness and wellness screening.
- PHP-30.** Design a fitness program to meet the individual needs of a client/patient based on the results of standard fitness assessments and wellness screening.
- PHP-31.** Instruct a client/patient regarding fitness exercises and the use of muscle strengthening equipment to include correction or modification of inappropriate, unsafe, or dangerous lifting techniques.

General Nutrition Concepts

- PHP-32.** Describe the role of nutrition in enhancing performance, preventing injury or illness, and maintaining a healthy lifestyle.
- PHP-33.** Educate clients/patients on the importance of healthy eating, regular exercise, and general preventative strategies for improving or maintaining health and quality of life.
- PHP-34.** Describe contemporary nutritional intake recommendations and explain how these recommendations can be used in performing a basic dietary analysis and providing appropriate general dietary recommendations.
- PHP-35.** Describe the proper intake, sources of, and effects of micro- and macronutrients on performance, health, and disease.
- PHP-36.** Describe current guidelines for proper hydration and explain the consequences of improper fluid/electrolyte replacement.
- PHP-37.** Identify, analyze, and utilize the essential components of food labels to determine the content, quality, and appropriateness of food products.
- PHP-38.** Describe nutritional principles that apply to tissue growth and repair.
- PHP-39.** Describe changes in dietary requirements that occur as a result of changes in an individual's health, age, and activity level.
- PHP-40.** Explain the physiologic principles and time factors associated with the design and planning of pre-activity and recovery meals/snacks and hydration practices.

- PHP-41.** Identify the foods and fluids that are most appropriate for pre-activity, activity, and recovery meals/snacks.

Weight Management and Body Composition

- PHP-42.** Explain how changes in the type and intensity of physical activity influence the energy and nutritional demands placed on the client/patient.
- PHP-43.** Describe the principles and methods of body composition assessment to assess a client's/patient's health status and to monitor changes related to weight management, strength training, injury, disordered eating, menstrual status, and/or bone density status.
- PHP-44.** Assess body composition by validated techniques.
- PHP-45.** Describe contemporary weight management methods and strategies needed to support activities of daily life and physical activity.

Disordered Eating and Eating Disorders

- PHP-46.** Identify and describe the signs, symptoms, physiological, and psychological responses of clients/patients with disordered eating or eating disorders.
- PHP-47.** Describe the method of appropriate management and referral for clients/patients with disordered eating or eating disorders in a manner consistent with current practice guidelines.

Performance Enhancing and Recreational Supplements and Drugs

- PHP-48.** Explain the known usage patterns, general effects, and short- and long-term adverse effects for the commonly used dietary supplements, performance enhancing drugs, and recreational drugs.
- PHP-49.** Identify which therapeutic drugs, supplements, and performance-enhancing substances are banned by sport and/or workplace organizations in order to properly advise clients/patients about possible disqualification and other consequences.

Clinical Examination and Diagnosis (CE)

Athletic trainers must possess strong clinical examination skills in order to accurately diagnosis and effectively treat their patients. The clinical examination is an on-going process, repeated to some extent each time the patient is treated. The development of these skills requires a thorough understanding of anatomy, physiology, and biomechanics. Athletic trainers must also apply clinical-reasoning skills throughout the physical examination process in order to assimilate data, select the appropriate assessment tests, and formulate a differential diagnosis.

The competencies identified in this section should be considered in the context of the competencies identified in other domains. For example, the knowledge and skills associated with acute care and therapeutic interventions, while applicable for this domain, are not repeated here.

The clinical examination process is comprehensive and may include a review of the systems and regions identified below based on the patient's relevant history and examination findings. Consideration must also be given to the patient's behavioral and cognitive status and history; competencies addressing this content area are included elsewhere.

Systems and Regions

- a. Musculoskeletal
- b. Integumentary
- c. Neurological
- d. Cardiovascular
- e. Endocrine
- f. Pulmonary
- g. Gastrointestinal
- h. Hepatobiliary
- i. Immune
- j. Renal and urogenital
- k. The face, including maxillofacial region and mouth
- l. Eye, ear, nose, and throat

Knowledge and Skills

- CE-1.** Describe the normal structures and interrelated functions of the body systems.
- CE-2.** Describe the normal anatomical, systemic, and physiological changes associated with the lifespan.
- CE-3.** Identify the common congenital and acquired risk factors and causes of musculoskeletal injuries and common illnesses that may influence physical activity in pediatric, adolescent, adult, and aging populations.
- CE-4.** Describe the principles and concepts of body movement, including normal osteokinematics and arthrokinematics.
- CE-5.** Describe the influence of pathomechanics on function.
- CE-6.** Describe the basic principles of diagnostic imaging and testing and their role in the diagnostic process.
- CE-7.** Identify the patient's participation restrictions (disabilities) and activity limitations (functional limitations) to determine the impact of the condition on the patient's life.
- CE-8.** Explain the role and importance of functional outcome measures in clinical practice and patient health-related quality of life.
- CE-9.** Identify functional and patient-centered quality of life outcome measures appropriate for use in athletic training practice.
- CE-10.** Explain diagnostic accuracy concepts including reliability, sensitivity, specificity, likelihood ratios, prediction values, and pre-test and post-test probabilities in the selection and interpretation of physical examination and diagnostic procedures.
- CE-11.** Explain the creation of clinical prediction rules in the diagnosis and prognosis of various clinical conditions.
- CE-12.** Apply clinical prediction rules (e.g., Ottawa Ankle Rules) during clinical examination procedures.

- CE-13.** Obtain a thorough medical history that includes the pertinent past medical history, underlying systemic disease, use of medications, the patient's perceived pain, and the history and course of the present condition.
- CE-14.** Differentiate between an initial injury evaluation and follow-up/reassessment as a means to evaluate the efficacy of the patient's treatment/rehabilitation program, and make modifications to the patient's program as needed.
- CE-15.** Demonstrate the ability to modify the diagnostic examination process according to the demands of the situation and patient responses.
- CE-16.** Recognize the signs and symptoms of catastrophic and emergent conditions and demonstrate appropriate referral decisions.
- CE-17.** Use clinical reasoning skills to formulate an appropriate clinical diagnosis for common illness/disease and orthopedic injuries/conditions.
- CE-18.** Incorporate the concept of differential diagnosis into the examination process.
- CE-19.** Determine criteria and make decisions regarding return to activity and/or sports participation based on the patient's current status.
- CE-20.** Use standard techniques and procedures for the clinical examination of common injuries, conditions, illnesses, and diseases including, but not limited to:
- CE-20a.** history taking
 - CE-20b.** inspection/observation
 - CE-20c.** palpation
 - CE-20d.** functional assessment
 - CE-20e.** selective tissue testing techniques / special tests
 - CE-20f.** neurological assessments (sensory, motor, reflexes, balance, cognitive function)
 - CE-20g.** respiratory assessments (auscultation, percussion, respirations, peak-flow)
 - CE-20h.** circulatory assessments (pulse, blood pressure, auscultation)
 - CE-20i.** abdominal assessments (percussion, palpation, auscultation)
 - CE-20j.** other clinical assessments (otoscope, urinalysis, glucometer, temperature, ophthalmoscope)
- CE-21.** Assess and interpret findings from a physical examination that is based on the patient's clinical presentation. This exam can include:
- CE-21a.** Assessment of posture, gait, and movement patterns
 - CE-21b.** Palpation
 - CE-21c.** Muscle function assessment
 - CE-21d.** Assessment of quantity and quality of osteokinematic joint motion
 - CE-21e.** Capsular and ligamentous stress testing
 - CE-21f.** Joint play (arthrokinematics)
 - CE-21g.** Selective tissue examination techniques / special tests
 - CE-21h.** Neurologic function (sensory, motor, reflexes, balance, cognition)
 - CE-21i.** Cardiovascular function (including differentiation between normal and abnormal heart sounds, blood pressure, and heart rate)
 - CE-21j.** Pulmonary function (including differentiation between normal breath sounds, percussion sounds, number and characteristics of respirations, peak expiratory flow)
 - CE-21k.** Gastrointestinal function (including differentiation between normal and abnormal bowel sounds)
 - CE-21l.** Genitourinary function (urinalysis)
 - CE-21m.** Ocular function (vision, ophthalmoscope)
 - CE-21n.** Function of the ear, nose, and throat (including otoscopic evaluation)

- CE-21o.** Dermatological assessment
- CE-21p.** Other assessments (glucometer, temperature)

- CE-22.** Determine when the findings of an examination warrant referral of the patient.
- CE-23.** Describe current setting-specific (e.g., high school, college) and activity-specific rules and guidelines for managing injuries and illnesses.

Acute Care of Injuries and Illnesses (AC)

Athletic trainers are often present when injuries or other acute conditions occur or are the first healthcare professionals to evaluate a patient. For this reason, athletic trainers must be knowledgeable and skilled in the evaluation and immediate management of acute injuries and illnesses.

The competencies identified in this section should be considered in the context of the competencies identified in other domains. For example, the knowledge and skills associated with the process of examination and documentation, while applicable for this domain, are not repeated here. Likewise, the knowledge and skills associated with the administrative and risk management aspects of planning for an emergency injury/illness situation are not repeated here.

Knowledge and Skills

Planning

- AC-1.** Explain the legal, moral, and ethical parameters that define the athletic trainer's scope of acute and emergency care.
- AC-2.** Differentiate the roles and responsibilities of the athletic trainer from other pre-hospital care and hospital-based providers, including emergency medical technicians/ paramedics, nurses, physician assistants, and physicians.
- AC-3.** Describe the hospital trauma level system and its role in the transportation decision-making process.

Examination

- AC-4.** Demonstrate the ability to perform scene, primary, and secondary surveys.
- AC-5.** Obtain a medical history appropriate for the patient's ability to respond.
- AC-6.** When appropriate, obtain and monitor signs of basic body functions including pulse, blood pressure, respiration, pulse oximetry, pain, and core temperature. Relate changes in vital signs to the patient's status.
- AC-7.** Differentiate between normal and abnormal physical findings (e.g., pulse, blood pressure, heart and lung sounds, oxygen saturation, pain, core temperature) and the associated pathophysiology.

Immediate Emergent Management

- AC-8.** Explain the indications, guidelines, proper techniques, and necessary supplies for removing equipment and clothing in order to access the airway, evaluate and/or stabilize an athlete's injured body part.

- AC-9.** Differentiate the types of airway adjuncts (oropharyngeal airways [OPA], nasopharyngeal airways [NPA] and supraglottic airways [King LT-D or Combitube]) and their use in maintaining a patent airway in adult respiratory and/or cardiac arrest.
- AC-10.** Establish and maintain an airway, including the use of oro- and nasopharyngeal airways, and neutral spine alignment in an athlete with a suspected spine injury who may be wearing shoulder pads, a helmet with and without a face guard, or other protective equipment.
- AC-11.** Determine when suction for airway maintenance is indicated and use according to accepted practice protocols.
- AC-12.** Identify cases when rescue breathing, CPR, and/or AED use is indicated according to current accepted practice protocols.
- AC-13.** Utilize an automated external defibrillator (AED) according to current accepted practice protocols.
- AC-14.** Perform one- and two-person CPR on an infant, child and adult.
- AC-15.** Utilize a bag valve and pocket mask on a child and adult using supplemental oxygen.
- AC-16.** Explain the indications, application, and treatment parameters for supplemental oxygen administration for emergency situations.
- AC-17.** Administer supplemental oxygen with adjuncts (e.g., non-rebreather mask, nasal cannula).
- AC-18.** Assess oxygen saturation using a pulse oximeter and interpret the results to guide decision making.
- AC-19.** Explain the proper procedures for managing external hemorrhage (e.g., direct pressure, pressure points, tourniquets) and the rationale for use of each.
- AC-20.** Select and use the appropriate procedure for managing external hemorrhage.
- AC-21.** Explain aseptic or sterile techniques, approved sanitation methods, and universal precautions used in the cleaning, closure, and dressing of wounds.
- AC-22.** Select and use appropriate procedures for the cleaning, closure, and dressing of wounds, identifying when referral is necessary.
- AC-23.** Use cervical stabilization devices and techniques that are appropriate to the circumstances of an injury.
- AC-24.** Demonstrate proper positioning and immobilization of a patient with a suspected spinal cord injury.
- AC-25.** Perform patient transfer techniques for suspected head and spine injuries utilizing supine log roll, prone log roll with push, prone log roll with pull, and lift-and-slide techniques.
- AC-26.** Select the appropriate spine board, including long board or short board, and use appropriate immobilization techniques based on the circumstance of the patient's injury.
- AC-27.** Explain the role of core body temperature in differentiating between exertional heat stroke, hyponatremia, and head injury.

- AC-28.** Differentiate the different methods for assessing core body temperature.
- AC-29.** Assess core body temperature using a rectal probe.
- AC-30.** Explain the role of rapid full body cooling in the emergency management of exertional heat stroke.
- AC-31.** Assist the patient in the use of a nebulizer treatment for an asthmatic attack.
- AC-32.** Determine when use of a metered-dose inhaler is warranted based on a patient's condition.
- AC-33.** Instruct a patient in the use of a meter-dosed inhaler in the presence of asthma- related bronchospasm.
- AC-34.** Explain the importance of monitoring a patient following a head injury, including the role of obtaining clearance from a physician before further patient participation.
- AC-35.** Demonstrate the use of an auto-injectable epinephrine in the management of allergic anaphylaxis. Decide when auto-injectable epinephrine use is warranted based on a patient's condition.
- AC-36.** Identify the signs, symptoms, interventions and, when appropriate, the return-to-participation criteria for:
- AC-36a.** sudden cardiac arrest
 - AC-36b.** brain injury including concussion, subdural and epidural hematomas, second impact syndrome and skull fracture
 - AC-36c.** cervical, thoracic, and lumbar spine trauma
 - AC-36d.** heat illness including heat cramps, heat exhaustion, exertional heat stroke, and hyponatremia
 - AC-36e.** exertional sickling associated with sickle cell trait
 - AC-36f.** rhabdomyolysis
 - AC-36g.** internal hemorrhage
 - AC-36h.** diabetic emergencies including hypoglycemia and ketoacidosis
 - AC-36i.** asthma attacks
 - AC-36j.** systemic allergic reaction, including anaphylactic shock
 - AC-36k.** epileptic and non-epileptic seizures
 - AC-36l.** shock
 - AC-36m.** hypothermia, frostbite
 - AC-36n.** toxic drug overdoses
 - AC-36o.** local allergic reaction

Immediate Musculoskeletal Management

- AC-37.** Select and apply appropriate splinting material to stabilize an injured body area.
- AC-38.** Apply appropriate immediate treatment to protect the injured area and minimize the effects of hypoxic and enzymatic injury.
- AC-39.** Select and implement the appropriate ambulatory aid based on the patient's injury and activity and participation restrictions.

Transportation

- AC-40.** Determine the proper transportation technique based on the patient's condition and findings of the immediate examination.

- AC-41.** Identify the criteria used in the decision-making process to transport the injured patient for further medical examination.
- AC-42.** Select and use the appropriate short-distance transportation methods, such as the log roll or lift and slide, for an injured patient in different situations.

Education

- AC-36.** Instruct the patient in home care and self-treatment plans for acute conditions.

Therapeutic Interventions (TI)

Athletic trainers assess the patient's status using clinician- and patient-oriented outcome measures. Based on this assessment and with consideration of the stage of healing and goals, a therapeutic intervention is designed to maximize the patient's participation and health-related quality of life.

A broad range of interventions, methods, techniques, equipment, activities using body movement, and medications are incorporated into this domain. These interventions are designed to enhance function by identifying, remediating, and preventing impairments and activity restrictions (functional limitations) to maximize participation. Rehabilitation is conducted in a wide variety of settings (e.g., aquatic, clinic) with basic and contemporary equipment/modalities and on a wide range of patients with respect to age, overall health, and desired level of activity. Therapeutic interventions also include the use of prescription and nonprescription medications. For this reason, the athletic trainer needs to be knowledgeable about common prescription and nonprescription drug indications, adverse reactions, and interactions.

The competencies identified in this section should be considered in the context of the competencies identified in other content areas. For example, the knowledge and skills associated with the process of examination and documentation, while applicable for this content area, are not included here.

Therapeutic interventions include:

- Techniques to reduce pain
- Techniques to limit edema
- Techniques to restore joint mobility
- Techniques to restore muscle extensibility
- Techniques to restore neuromuscular function
- Exercises to improve strength, endurance, speed, and power
- Activities to improve balance, neuromuscular control, coordination, and agility
- Exercises to improve gait, posture, and body mechanics
- Exercises to improve cardiorespiratory fitness
- Functional exercises (e.g., sports- or activity-specific)
- Exercises which comprise a home-based program
- Aquatic therapy
- Therapeutic modalities
 - superficial thermal agents (e.g., hot pack, ice)
 - electrical stimulation
 - therapeutic ultrasound
 - diathermy
 - therapeutic low-level laser and light therapy
 - mechanical modalities
 - traction
 - intermittent compression
 - continuous passive motion
 - massage
 - biofeedback
- Therapeutic medications (as guided by applicable state and federal law)

Knowledge and Skills

Physical Rehabilitation and Therapeutic Modalities

- TI-1.** Describe and differentiate the physiological and pathophysiological responses to inflammatory and non-inflammatory conditions and the influence of these responses on the design, implementation, and progression of a therapeutic intervention.
- TI-2.** Compare and contrast contemporary theories of pain perception and pain modulation.
- TI-3.** Differentiate between palliative and primary pain-control interventions.
- TI-4.** Analyze the impact of immobilization, inactivity, and mobilization on the body systems (e.g., cardiovascular, pulmonary, musculoskeletal) and injury response.
- TI-5.** Compare and contrast the variations in the physiological response to injury and healing across the lifespan.
- TI-6.** Describe common surgical techniques, including interpretation of operative reports, and any resulting precautions, contraindications, and comorbidities that impact the selection and progression of a therapeutic intervention program.
- TI-7.** Identify patient- and clinician-oriented outcomes measures commonly used to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan.
- TI-8.** Explain the theory and principles relating to expected physiological response(s) during and following therapeutic interventions.
- TI-9.** Describe the laws of physics that (1) underlay the application of thermal, mechanical, electromagnetic, and acoustic energy to the body and (2) form the foundation for the development of therapeutic interventions (e.g., stress-strain, leverage, thermodynamics, energy transmission and attenuation, electricity).
- TI-10.** Integrate self-treatment into the intervention when appropriate, including instructing the patient regarding self-treatment plans.
- TI-11.** Design therapeutic interventions to meet specified treatment goals.
- TI-11a.** Assess the patient to identify indications, contraindications, and precautions applicable to the intended intervention.
 - TI-11b.** Position and prepare the patient for various therapeutic interventions.
 - TI-11c.** Describe the expected effects and potential adverse reactions to the patient.
 - TI-11d.** Instruct the patient how to correctly perform rehabilitative exercises.
 - TI-11e.** Apply the intervention, using parameters appropriate to the intended outcome.
 - TI-11f.** Reassess the patient to determine the immediate impact of the intervention.
- TI-12.** Use the results of on-going clinical examinations to determine when a therapeutic intervention should be progressed, regressed or discontinued.
- TI-13.** Describe the relationship between the application of therapeutic modalities and the incorporation of active and passive exercise and/or manual therapies, including therapeutic massage, myofascial techniques, and muscle energy techniques.

- TI-14.** Describe the use of joint mobilization in pain reduction and restoration of joint mobility.
- TI-15.** Perform joint mobilization techniques as indicated by examination findings.
- TI-16.** Fabricate and apply taping, wrapping, supportive, and protective devices to facilitate return to function.
- TI-17.** Analyze gait and select appropriate instruction and correction strategies to facilitate safe progression to functional gait pattern.
- TI-18.** Explain the relationship between posture, biomechanics, and ergonomics and the need to address these components in a therapeutic intervention.
- TI-19.** Identify manufacturer, institutional, state, and/or federal standards that influence approval, operation, inspection, maintenance and safe application of therapeutic modalities and rehabilitation equipment.
- TI-20.** Inspect therapeutic equipment and the treatment environment for potential safety hazards.

Therapeutic Medications

- TI-21.** Explain the federal, state, and local laws, regulations and procedures for the proper storage, disposal, transportation, dispensing (administering where appropriate), and documentation associated with commonly used prescription and nonprescription medications.
- TI-22.** Identify and use appropriate pharmaceutical terminology for management of medications, inventory control, and reporting of pharmacological agents commonly used in an athletic training facility.
- TI-23.** Use an electronic drug resource to locate and identify indications, contraindications, precautions, and adverse reactions for common prescription and nonprescription medications.
- TI-24.** Explain the major concepts of pharmacokinetics and the influence that exercise might have on these processes.
- TI-25.** Explain the concepts related to bioavailability, half-life, and bioequivalence (including the relationship between generic and brand name drugs) and their relevance to the patient, the choice of medication, and the dosing schedule.
- TI-26.** Explain the pharmacodynamic principles of receptor theory, dose-response relationship, placebo effect, potency, and drug interactions as they relate to the mechanism of drug action and therapeutic effectiveness.
- TI-27.** Describe the common routes used to administer medications and their advantages and disadvantages.
- TI-28.** Properly assist and/or instruct the patient in the proper use, cleaning, and storage of drugs commonly delivered by metered dose inhalers, nebulizers, insulin pumps, or other parenteral routes as prescribed by the physician.
- TI-29.** Describe how common pharmacological agents influence pain and healing and their influence on various therapeutic interventions.

- TI-30.** Explain the general therapeutic strategy, including drug categories used for treatment, desired treatment outcomes, and typical duration of treatment, for the following common diseases and conditions: asthma, diabetes, hypertension, infections, depression, GERD, allergies, pain, inflammation, and the common cold.
- TI-31.** Optimize therapeutic outcomes by communicating with patients and/or appropriate healthcare professionals regarding compliance issues, drug interactions, adverse drug reactions, and sub-optimal therapy.

Psychosocial Strategies and Referral (PS)

Athletic trainers must be able to recognize clients/patients exhibiting abnormal social, emotional, and mental behaviors. Coupled with recognition is the ability to intervene and refer these individuals as necessary. Additionally, athletic trainers appreciate the role of mental health in injury and recovery and use interventions to optimize the connection between mental health and restoration of participation.

Knowledge and Skills

Theoretical Background

- PS-1.** Describe the basic principles of personality traits, trait anxiety, locus of control, intrinsic and extrinsic motivation, and patient and social environment interactions as they affect patient interactions.
- PS-2.** Explain the theoretical background of psychological and emotional responses to injury and forced inactivity (e.g., cognitive appraisal model, stress response model).
- PS-3.** Describe how psychosocial considerations affect clinical decision-making related to return to activity or participation (e.g., motivation, confidence).
- PS-4.** Summarize and demonstrate the basic processes of effective interpersonal and cross-cultural communication as it relates to interactions with patients and others involved in the healthcare of the patient.
- PS-5.** Summarize contemporary theory regarding educating patients of all ages and cultural backgrounds to effect behavioral change.

Psychosocial Strategies

- PS-6.** Explain the importance of educating patients, parents/guardians, and others regarding the condition in order to enhance the psychological and emotional well-being of the patient.
- PS-7.** Describe the psychological techniques (e.g., goal setting, imagery, positive self-talk, relaxation/anxiety reduction) that the athletic trainer can use to motivate the patient during injury rehabilitation and return to activity processes.
- PS-8.** Describe psychological interventions (e.g., goal setting, motivational techniques) that are used to facilitate a patient's physical, psychological, and return to activity needs.
- PS-9.** Describe the psychosocial factors that affect persistent pain sensation and perception (e.g., emotional state, locus of control, psychodynamic issues, sociocultural factors, personal values and beliefs) and identify multidisciplinary approaches for assisting patients with persistent pain.

PS-10. Explain the impact of sociocultural issues that influence the nature and quality of healthcare received (e.g., cultural competence, access to appropriate healthcare providers, uninsured/underinsured patients, insurance) and formulate and implement strategies to maximize client/patient outcomes.

Mental Health and Referral

PS-11. Describe the role of various mental healthcare providers (e.g., psychiatrists, psychologists, counselors, social workers) that may comprise a mental health referral network.

PS-12. Identify and refer clients/patients in need of mental healthcare.

PS-13. Identify and describe the basic signs and symptoms of mental health disorders (e.g., psychosis, neurosis; sub-clinical mood disturbances (e.g., depression, anxiety); and personal/social conflict (e.g., adjustment to injury, family problems, academic or emotional stress, personal assault or abuse, sexual assault or harassment) that may indicate the need for referral to a mental healthcare professional.

PS-14. Describe the psychological and sociocultural factors associated with common eating disorders.

PS-15. Identify the symptoms and clinical signs of substance misuse/abuse, the psychological and sociocultural factors associated with such misuse/abuse, its impact on an individual's health and physical performance, and the need for proper referral to a healthcare professional.

PS-16. Formulate a referral for an individual with a suspected mental health or substance abuse problem.

PS-17. Describe the psychological and emotional responses to a catastrophic event, the potential need for a psychological intervention and a referral plan for all parties affected by the event.

PS-18. Provide appropriate education regarding the condition and plan of care to the patient and appropriately discuss with others as needed and as appropriate to protect patient privacy.

Healthcare Administration (HA)

Athletic trainers function within the context of a complex healthcare system. Integral to this function is an understanding of risk management, healthcare delivery mechanisms, insurance, reimbursement, documentation, patient privacy, and facility management.

Knowledge and Skills

HA-1. Describe the role of the athletic trainer and the delivery of athletic training services within the context of the broader healthcare system.

HA-2. Describe the impact of organizational structure on the daily operations of a healthcare facility.

HA-3. Describe the role of strategic planning as a means to assess and promote organizational improvement.

HA-4. Describe the conceptual components of developing and implementing a basic business plan.

HA-5. Describe basic healthcare facility design for a safe and efficient clinical practice setting.

HA-6. Explain components of the budgeting process including: purchasing, requisition, bidding, request for proposal, inventory, profit and loss ratios, budget balancing, and return on investments.

- HA-7.** Assess the value of the services provided by an athletic trainer (e.g., return on investment).
- HA-8.** Develop operational and capital budgets based on a supply inventory and needs assessment; including capital equipment, salaries and benefits, trending analysis, facility cost, and common expenses.
- HA-9.** Identify the components that comprise a comprehensive medical record.
- HA-10.** Identify and explain the statutes that regulate the privacy and security of medical records.
- HA-11.** Use contemporary documentation strategies to effectively communicate with patients, physicians, insurers, colleagues, administrators, and parents or family members.
- HA-12.** Use a comprehensive patient-file management system for appropriate chart documentation, risk management, outcomes, and billing.
- HA-13.** Define state and federal statutes that regulate employment practices.
- HA-14.** Describe principles of recruiting, selecting, hiring, and evaluating employees.
- HA-15.** Identify principles of recruiting, selecting, employing, and contracting with physicians and other medical and healthcare personnel in the deployment of healthcare services.
- HA-16.** Describe federal and state infection control regulations and guidelines, including universal precautions as mandated by the Occupational Safety and Health Administration (OSHA), for the prevention, exposure, and control of infectious diseases, and discuss how they apply to the practicing of athletic training.
- HA-17.** Identify key regulatory agencies that impact healthcare facilities, and describe their function in the regulation and overall delivery of healthcare.
- HA-18.** Describe the basic legal principles that apply to an athletic trainer's responsibilities.
- HA-19.** Identify components of a risk management plan to include security, fire, electrical and equipment safety, emergency preparedness, and hazardous chemicals.
- HA-20.** Create a risk management plan and develop associated policies and procedures to guide the operation of athletic training services within a healthcare facility to include issues related to security, fire, electrical and equipment safety, emergency preparedness, and hazardous chemicals.
- HA-21.** Develop comprehensive, venue-specific emergency action plans for the care of acutely injured or ill individuals.
- HA-22.** Develop specific plans of care for common potential emergent conditions (e.g., asthma attack, diabetic emergency).
- HA-23.** Identify and explain the recommended or required components of a preparticipation examination based on appropriate authorities' rules, guidelines, and/or recommendations.
- HA-24.** Describe a plan to access appropriate medical assistance on disease control, notify medical authorities, and prevent disease epidemics.

- HA-25.** Describe common health insurance models, insurance contract negotiation, and the common benefits and exclusions identified within these models.
- HA-26.** Describe the criteria for selection, common features, specifications, and required documentation needed for secondary, excess accident, and catastrophic health insurance.
- HA-27.** Describe the concepts and procedures for revenue generation and reimbursement.
- HA-28.** Understand the role of and use diagnostic and procedural codes when documenting patient care.
- HA-29.** Explain typical administrative policies and procedures that govern first aid and emergency care.
- HA-30.** Describe the role and functions of various healthcare providers and protocols that govern the referral of patients to these professionals.

Professional Development and Responsibility (PD)

The provision of high quality patient care requires that the athletic trainer maintain current competence in the constantly changing world of healthcare. Athletic trainers must also embrace the need to practice within the limits of state and national regulation using moral and ethical judgment. As members of a broader healthcare community, athletic trainers work collaboratively with other healthcare providers and refer clients/patients when such referral is warranted.

Knowledge and Skills

- PD-1.** Summarize the athletic training profession's history and development and how current athletic training practice has been influenced by its past.
- PD-2.** Describe the role and function of the National Athletic Trainers' Association and its influence on the profession.
- PD-3.** Describe the role and function of the Board of Certification, the Commission on Accreditation of Athletic Training Education, and state regulatory boards.
- PD-4.** Explain the role and function of state athletic training practice acts and registration, licensure, and certification agencies including (1) basic legislative processes for the implementation of practice acts, (2) rationale for state regulations that govern the practice of athletic training, and (3) consequences of violating federal and state regulatory acts.
- PD-5.** Access, analyze, and differentiate between the essential documents of the national governing, credentialing and regulatory bodies, including, but not limited to, the NATA *Athletic Training Educational Competencies*, the BOC *Standards of Professional Practice*, the NATA *Code of Ethics*, and the BOC *Role Delineation Study/Practice Analysis*.
- PD-6.** Explain the process of obtaining and maintaining necessary local, state, and national credentials for the practice of athletic training.
- PD-7.** Perform a self-assessment of professional competence and create a professional development plan to maintain necessary credentials and promote life-long learning strategies.
- PD-8.** Differentiate among the preparation, scopes of practice, and roles and responsibilities of healthcare providers and other professionals with whom athletic trainers interact.

- PD-9.** Specify when referral of a client/patient to another healthcare provider is warranted and formulate and implement strategies to facilitate that referral.
- PD-10.** Develop healthcare educational programming specific to the target audience (e.g., clients/patients, healthcare personnel, administrators, parents, general public).
- PD-11.** Identify strategies to educate colleagues, students, patients, the public, and other healthcare professionals about the roles, responsibilities, academic preparation, and scope of practice of athletic trainers.
- PD-12.** Identify mechanisms by which athletic trainers influence state and federal healthcare regulation.

Clinical Integration Proficiencies (CIP)

The clinical integration proficiencies (CIPs) represent the synthesis and integration of knowledge, skills, and clinical decision-making into actual client/patient care. The CIPs have been reorganized into this section (rather than at the end of each content area) to reflect their global nature. For example, therapeutic interventions do not occur in isolation from physical assessment.

In most cases, assessment of the CIPs should occur when the student is engaged in real client/patient care and may be necessarily assessed over multiple interactions with the same client/patient. In a few instances, assessment may require simulated scenarios, as certain circumstances may occur rarely but are nevertheless important to the well-prepared practitioner.

The incorporation of evidence-based practice principles into care provided by athletic trainers is central to optimizing outcomes. Assessment of student competence in the CIPs should reflect the extent to which these principles are integrated. Assessment of students in the use of Foundational Behaviors in the context of real patient care should also occur.

Prevention & Health Promotion

- CIP-1.** Administer testing procedures to obtain baseline data regarding a client's/patient's level of general health (including nutritional habits, physical activity status, and body composition). Use this data to design, implement, evaluate, and modify a program specific to the performance and health goals of the patient. This will include instructing the patient in the proper performance of the activities, recognizing the warning signs and symptoms of potential injuries and illnesses that may occur, and explaining the role of exercise in maintaining overall health and the prevention of diseases. Incorporate contemporary behavioral change theory when educating clients/patients and associated individuals to effect health-related change. Refer to other medical and health professionals when appropriate.
- CIP-2.** Select, apply, evaluate, and modify appropriate standard protective equipment, taping, wrapping, bracing, padding, and other custom devices for the client/patient in order to prevent and/or minimize the risk of injury to the head, torso, spine, and extremities for safe participation in sport or other physical activity.
- CIP-3.** Develop, implement, and monitor prevention strategies for at-risk individuals (e.g., persons with asthma or diabetes, persons with a previous history of heat illness, persons with sickle cell trait) and large groups to allow safe physical activity in a variety of conditions. This includes obtaining and interpreting data related to potentially hazardous environmental conditions, monitoring body functions (e.g., blood glucose, peak expiratory flow, hydration status), and making the appropriate recommendations for individual safety and activity status.

Clinical Assessment & Diagnosis / Acute Care / Therapeutic Intervention

- CIP-4.** Perform a comprehensive clinical examination of a patient with an upper extremity, lower extremity, head, neck, thorax, and/or spine injury or condition. This exam should incorporate clinical reasoning in the selection of assessment procedures and interpretation of findings in order to formulate a differential diagnosis and/or diagnosis, determine underlying impairments, and identify activity limitations and participation restrictions. Based on the assessment data and consideration of the patient's goals, provide the appropriate initial care and establish overall treatment goals. Create and implement a therapeutic intervention that targets these treatment goals to include, as appropriate, therapeutic modalities, medications (with physician involvement as necessary), and rehabilitative techniques and procedures. Integrate and interpret various forms of standardized documentation including both patient-oriented and clinician-oriented outcomes measures to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan.
- CIP-5.** Perform a comprehensive clinical examination of a patient with a common illness/condition that includes appropriate clinical reasoning in the selection of assessment procedures and interpretation of history and physical examination findings in order to formulate a differential diagnosis and/or diagnosis. Based on the history, physical examination, and patient goals, implement the appropriate treatment strategy to include medications (with physician involvement as necessary). Determine whether patient referral is needed, and identify potential restrictions in activities and participation. Formulate and communicate the appropriate return to activity protocol.
- CIP-6.** Clinically evaluate and manage a patient with an emergency injury or condition to include the assessment of vital signs and level of consciousness, activation of emergency action plan, secondary assessment, diagnosis, and provision of the appropriate emergency care (e.g., CPR, AED, supplemental oxygen, airway adjunct, splinting, spinal stabilization, control of bleeding).

Psychosocial Strategies and Referral

- CIP-7.** Select and integrate appropriate psychosocial techniques into a patient's treatment or rehabilitation program to enhance rehabilitation adherence, return to play, and overall outcomes. This includes, but is not limited to, verbal motivation, goal setting, imagery, pain management, self-talk, and/or relaxation.
- CIP-8.** Demonstrate the ability to recognize and refer at-risk individuals and individuals with psychosocial disorders and/or mental health emergencies. As a member of the management team, develop an appropriate management plan (including recommendations for patient safety and activity status) that establishes a professional helping relationship with the patient, ensures interactive support and education, and encourages the athletic trainer's role of informed patient advocate in a manner consistent with current practice guidelines.

Healthcare Administration

- CIP-9.** Utilize documentation strategies to effectively communicate with patients, physicians, insurers, colleagues, administrators, and parents or family members while using appropriate terminology and complying with statutes that regulate privacy of medical records. This includes using a comprehensive patient-file management system (including diagnostic and procedural codes) for appropriate chart documentation, risk management, outcomes, and billing.