

Instructional Framework

Sports Medicine and Rehabilitation

51.0913.00

This Instructional Framework identifies, explains, and expands the content of the standards/measurement criteria, and, as well, guides the development of multiple-choice items for the Technical Skills Assessment. This document corresponds with the Technical Standards reviewed on July 12, 2026.



Domain 1: Injury Recognition and Injury Management

Instructional Time: 30 - 40%

STANDARD 6.0 ASSESS THE IMPACT OF INJURIES, SPORTS TRAUMA, AND PHYSICAL DYSFUNCTIONS AND DISORDERS

6.1 Evaluate an injury using H.I.P.S., or H.O.P.S.	• Systematic evaluation process • History, inspection/observation, palpation, special test (H.I.P.S./H.O.P.S.)
6.2 Recognize and explain the etiology, signs, and symptoms related to injuries to the head and face	• Common injuries and their mechanisms, signs, symptoms, and treatments for head, neck, and facial injuries ◦ Orbital fracture, nasal fracture, epistaxis, deviated septum, mandible fracture, etc. • Observable signs of injury ◦ Battle sign, raccoon eyes, otorrhea, etc. • Signs/Symptoms and immediate care for someone who has suffered a concussion/traumatic brain injury (TBI) • Concussion • Traumatic brain injury (TBI) vs. mild traumatic brain injury (mTBI) • Second impact syndrome
6.3 Recognize and explain the etiology, signs, and symptoms related to injuries to axial regions	• Abdominal ◦ Four quadrants ◦ Spleen ■ Kehr's ◦ Appendix ■ McBurney's point ◦ Kidneys • Axial skeleton ◦ Rib ■ Fracture ◦ Vertebrae

	○ Bulging/herniated disc ● Thoracic ○ Heart/lung
6.4 Recognize and explain the etiology, signs, and symptoms related to injuries to upper extremity	● Shoulder ○ Dislocation, humerus fracture, rotator cuff, shoulder-labrum, clavicle, etc. ● Elbow ○ Medial and lateral epicondylitis, ulnar/radial collateral ligaments, etc. ● Wrist/Hand ○ Scaphoid fracture, fall on outstretched hand (FOOSH), carpal tunnel syndrome, ganglion cysts, Colles fracture, boxer's fracture, etc.
6.5 Recognize and explain the etiology, signs, and symptoms related to injuries to lower extremity	● Hip/thigh ○ Quad contusion, hip pointer, sciatica, etc. ● Knee ○ Anterior/posterior cruciate ligament, medial/lateral collateral ligament, meniscus, patellar tendonitis, dislocation, etc. ● Foot/ankle ○ Lateral and medial ankle sprain, syndesmosis sprain, Jones fracture, Achilles tendonitis, plantar fasciitis, bunion, etc.
6.6 Identify and describe common techniques used to evaluate musculoskeletal disorders [i.e., special orthopedic testing, range of motion (ROM) measurement, manual muscle testing, etc.]	● Range of motion (ROM) ○ Types ○ Goniometer ● Manual muscle testing (MMT) ● Special tests for musculoskeletal injuries ● Ottawa ankle rules
6.7 Identify phases of tissue healing	● Inflammation, proliferation, remodeling ● Soft tissue vs. bony tissue ● Osteoblast/osteoclast
6.8 Investigate the cause of secondary injuries (i.e., gait, compensatory posture, etc.)	● Differentiate between primary and secondary injuries ● Biomechanical changes and secondary injuries that can occur during the healing process and rehabilitation ○ Necrosis, compartment syndrome, etc.
STANDARD 7.0 ANALYZE THERAPEUTIC EXERCISE, TRAINING, AND RECONDITIONING TECHNIQUES	

7.1 Differentiate among various kinds of exercises (i.e., isometric, isotonic, manual resistance, isokinetic, circuit training, etc.)	• Types of muscle contractions ◦ Concentric and eccentric • Single plane vs. multi-plane exercise • Progressive strengthening, endurance, and proprioceptive exercises • Classifications of exercises ◦ Open/close chain, isotonic vs. isokinetic, etc. • Exercise progression
7.2 Consider indications, contraindications, and safety precautions related to various injury rehabilitation and strength and conditioning activities	• Lifting considerations ◦ Spotters, lift belts, cables, etc.
7.3 Describe types of stretching and flexibility strategies (i.e., static, ballistic, dynamic, proprioceptive neuromuscular facilitation, etc.)	• Pre/post-exercise
7.4 Explain strength, mobility, and proprioception as related to performance and injury prevention	• Posture correction • Proper mechanics • Movement screenings • Functional Movement Screening (FMS) • Overhead squat assessment
7.5 Explain indications, contraindications, precautions, and proper fitting of devices for mobility and ambulation (e.g., weight-bearing assistive devices, prosthetics, and orthotic devices)	• Ambulation aids ◦ Crutches, canes, walkers, boots, knee scooters, wheelchair, etc. • Types of gaits with ambulatory aid ◦ Three-point gait, four-point gait, etc.
7.6 Explain proper use and fitting of protective equipment (i.e., ankle brace, shoulder pads, etc.)	• Contusion and fracture prevention ◦ Shin guards, knee pads, mouthguards, etc. • Football helmets and pads fitting standards ◦ National Operating Committee on Standards for Athletic Equipment (NOCSAE) ◦ Annual recertification of helmets
7.7 Describe appropriate rehabilitation progression [e.g., return-to-play, work, and daily activity criteria (full strength, free from pain, skill performance tests, and emotional readiness)]	• Musculoskeletal injury rehabilitation progression ◦ Phases of rehab ◦ Severity of injury ■ Type of fracture, injury grading, etc. • Protocol when returning an athlete to play after injury ◦ Concussion, musculoskeletal injury, etc. ◦ Potential risks of returning an athlete too soon after a concussion or musculoskeletal injury

	• Functional return to play
STANDARD 8.0 ANALYZE THERAPEUTIC INTERVENTIONS AND PAIN MANAGEMENT TECHNIQUES	
8.1 Explain treatment expectations, physiological changes, and special instructions for specific interventions (i.e., thermotherapy, cryotherapy, electric stimulation, ultrasound, hydrotherapy, compression, etc.)	• Physiological effects of various modalities • Vasodilation and vasoconstriction • Preparation, use of modalities, equipment application
8.2 Explain indications, contraindications, safety precautions, and applications related to interventions (i.e., thermotherapy, cryotherapy, electric stimulation, ultrasound, hydrotherapy, compression, etc.)	• Cryotherapy ◦ Raynaud's phenomenon • Pacemaker contraindications • Open growth plates for ultrasound • Compromised circulation • Compression ◦ Fractures • Open wound
8.3 Differentiate between traditional and nontraditional approaches to pain management (i.e., pros and cons of pharmaceutical vs. complementary techniques, etc.)	• Alternative pain control approaches ◦ Acupuncture, massage, meditation, cupping, instruments, instrument assisted soft tissue mobilization (IASTM), gua sha, etc. • Pharmacology ◦ Over-the-counter (OTC) vs. prescription ◦ Drug allergies
8.4 Demonstrate proper acute injury management (i.e., PRICE, RICE, POLICE, PEACE and LOVE, etc.)	• Proper application of immobilization devices, rest, ice, compression, and elevation • Acute Injury Care Standards ◦ Protection, rest, ice, compression, elevation (P)RICE ◦ Protection, optimal loading, ice, compression, elevation (POLICE) ◦ Protect, elevation, avoid anti-inflammatories, compression, Education, load, optimism, vascularization, and exercise (PEACE and LOVE)
STANDARD 9.0 APPLY PSYCHOLOGICAL TECHNIQUES TO PHYSICAL PERFORMANCE, INJURY EVALUATION, AND REHABILITATION	
9.1 Describe emotional/psychological responses to injury, illness, and rehabilitation (i.e., depression, anxiety, fear, etc.)	• Analyze the five stages of grief and understand behaviors found in each stage • Risk factors and behaviors related to stressors • Risk factors and behaviors related to signs and symptoms

9.2 Explain motivational techniques for physical conditioning and rehabilitation (i.e., goal setting, positive reinforcement, celebrating successes, etc.)	• Extrinsic and intrinsic motivation ◦ Application to various situations • Specific, Measurable, Attainable, Realistic, Timely (SMART) Goals
9.3 Identify risk factors, signs, and symptoms for patients in need of interventional counseling (i.e., eating disorders, depression, head injury, substance abuse, etc.)	• Psychological needs and referral to appropriate resources
Domain 2: Anatomy and Terminology Instructional Time: 30 - 35%	
STANDARD 1.0 USE MEDICAL TERMINOLOGY AS APPLIED IN HEALTHCARE	
1.1 Use medical terms, acronyms, abbreviations, root words, prefixes, and suffixes commonly used in sports medicine and rehabilitation services	• Sports medicine abbreviations ◦ Signs and symptoms (S/S), history (Hx), treatment (Tx), etc. • Sports medicine acronyms ◦ Certified athletic trainer (ATC), fall on outstretched hand (FOOSH), etc. • Define and recognize common prefixes, suffixes, and roots used in medical terminology ◦ -itis, hyper-, hypo-, cardi, osteo, myo, etc.
1.2 Use anatomical terms commonly used in sports medicine and rehabilitation services (e.g., primary directions, body planes, and movement terms)	• Anatomical planes • Anatomical position • Anatomical terms • Anatomical movement/direction • Assessment terms
STANDARD 2.0 DEMONSTRATE BASIC KNOWLEDGE OF BODY SYSTEMS AND HUMAN ANATOMY	
2.1 Classify the four primary tissue types (epithelial, connective, muscular, and nervous) and describe their roles	• Smooth, cardiac, skeletal, etc. • Connective ◦ Tendons, ligaments, fascia, etc.
2.2 Explain the structure and function of the musculoskeletal system (e.g., axial, upper, and lower extremities)	• Bones vs. muscles • Origin, insertion, action
2.3 Explain each type of joint and its various locations, including articular structures and functions	• Synovial, cartilaginous, fibrous

2.4 Explain the basic structure and function of the neurological system	• Central nervous system (CNS) vs. peripheral nervous system (PNS) • Cranial nerves
2.5 Explain the basic structure and function of the cardiopulmonary system	• Arteries vs. veins • Four chambers of the heart • Right vs. left lobes of the lungs • Aorta • Oxygen and carbon dioxide

Domain 3: Emergency Care and Safety

Instructional Time: 15 - 20%

STANDARD 4.0 DEMONSTRATE SAFETY AND INFECTION CONTROL

4.1 Set up a treatment area utilizing proper cleaning, disinfecting, and sterilizing sanitation methods	• Guidelines and procedures to clean and maintain sanitary treatment surfaces and patient care equipment • Types of cleaning agents ◦ Tuberculocidal ◦ 1-to-10 bleach to water ratio
4.2 Apply universal precautions (e.g., use and disposal of PPE and biohazard materials)	• Transmissible vs. nontransmissible body fluid management ◦ Saliva, feces, blood, etc. • Bloodborne Pathogens ◦ Hepatitis, acquired immunodeficiency syndrome (AIDS), human papillomavirus (HPV), etc. • Hand-washing techniques • Biohazard bags and sharps containers • Proper application and removal of gloves (don/doff)
4.3 Explain risk management strategies according to OSHA compliance [i.e., Safety Data Sheets (SDSs) and chemical management database system for injury and illness solutions]	• Recognize and properly report exposure incidents • Proper ergonomics/biomechanics

STANDARD 5.0 MANAGE ACUTE CARE EMERGENCY AND NON-EMERGENCY SITUATIONS

5.1 Assess normal and abnormal vital signs (i.e., temperature, pulse, respirations, skin, pupils, blood pressure, pulse oximetry, etc.)	• Normal range of each vital sign based on population • Demonstrate proper procedures for assessing vital signs
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5.2 Recognize signs and symptoms of sudden health issues and describe their treatment (e.g., fainting, seizures, types of shock, poisoning, heart attack, stroke, and choking)	● Recognition and steps for care of specific illnesses ○ Fainting, stroke, seizures, poisonings, allergic reactions, diabetes, overdose, etc. ● Heart and circulatory conditions that may cause health concerns
5.3 Recognize causes, signs, and symptoms, and describe treatment of environmentally related emergencies (e.g., effects of heat and cold, altitude, and asthma)	● Heat cramps, heat exhaustion, heat stroke ○ Cold water submersion ○ Core temperature ● Hypothermia ○ Frostbite ● Air quality ○ Impacts ● Altitude ○ Sickle cell trait
5.4 Perform CPR (cardiopulmonary resuscitation) and AED (automated external defibrillator) procedures for infants, children, and adults	● Single vs. multi rescuer ● Equipment removal
5.5 Demonstrate common taping, wrapping, and bracing techniques that prevent, support, or treat injuries and conditions	● Purpose, application, and critical thinking skills related to basic and advanced taping, bandaging, and wrapping techniques
5.6 Describe common open and closed wounds including bleeding control techniques (e.g., abrasions, incisions, lacerations, punctures, blisters, and contusions)	● Common types of skin wounds, including burns ● Arterial vs. venous vs. capillary ● Pressure application ● Tourniquet application
5.7 Demonstrate proper wound care to assess and prevent infection, including home-care instructions (e.g., signs and symptoms of infection, cleaning, bandaging, and dressing)	● Infection prevention techniques ● Recognition of infection ○ Swelling, heat, aching, redness, pus (SHARP)
5.8 Demonstrate splinting techniques (e.g., soft, rigid, and anatomical)	● Purpose of immobilization ○ Acute care and healing process ● Vacuum vs. cardboard vs. SAM splint (structural aluminum malleable splint) ● Assess distal circulation ○ Capillary refill ○ Distal pulse
5.9 Explain proper procedures for removing and transporting an injured patient in an emergent situation, including the use of proper body mechanics (e.g., logroll, spine board, and stretcher)	● Patient extrication ○ Cervical collar, etc. ● Equipment removal

5.10 Explain proper procedures for removing and transporting an injured patient in a nonemergent situation, including the use of proper body mechanics (i.e., manual conveyance techniques, etc.)	• Clinician-assisted ambulation ◦ Two-person carry/walk, etc.
5.11 Describe key components of emergency action plans and conditions for activation	• Emergency action plan ◦ Specific sport venue, chain of command, location of emergency equipment, and location of emergency exits, etc. • Primary and secondary evaluations ◦ Red flags
5.12 Identify appropriate first aid supplies utilized in various healthcare settings (i.e., hospital/clinic, athletic training room, physical therapy office, etc.)	• Gauze, alcohol, compression wrap, etc.

Domain 4: Health and Performance Concepts

Instructional Time: 5 - 10%

STANDARD 3.0 EXAMINE HEALTH AND PERFORMANCE CONCEPTS

3.1 Describe nutritional concepts and physical composition of food (e.g., 6 basic nutrients, protein, carbohydrates, fats, vitamins, minerals, and water)	• Six major types of nutrients ◦ Role in the body ◦ Best sources of each ◦ Quantities needed
3.2 Calculate and analyze caloric intake in relation to recommended daily allowance and USDA dietary guidelines	• Calculate amount of calories ◦ Maintain/lose/gain weight ◦ Calories per gram for each macronutrient
3.3 Explain nutrition considerations for diverse populations (i.e., patients with medical conditions, cultural considerations, food intolerances, etc.)	• Diet modifications based on special situations and population • Pregame/postgame • Individuals with diabetes, vegetarian lifestyle, etc. • Disordered eating
3.4 Explain exercise considerations for diverse populations (i.e., patients with medical conditions, cultural considerations, weight management, etc.)	• Types of exercise for weight management • Modifications based on an individual's needs
3.5 Describe general concepts of athletic hydration (e.g., pre-practice/competition, competition, and post-practice/competition)	• Methods to monitor hydration levels • Proper hydration processes

	• Signs and symptoms of dehydration
3.6 Interpret tests used to determine fitness for cardiorespiratory endurance, strength, flexibility, and body composition	• Healthy weight range using different tools • Training zones for cardiovascular fitness • Cardiovascular fitness testing ○ Baseline test ○ Assess level of fitness • Body fat and body composition ○ Terminology ○ Influencing factors ○ Ideal percentages ○ Methods of calculations ○ Take measurements ○ Measurement results • Variables of the frequency, intensity, time and type (FITT) formula • Assess upper and lower body flexibility • Muscular fitness ○ Strength and endurance
3.7 Evaluate the safety and efficacy of dietary supplements and performance enhancement drugs (PEDs)	• Ergogenic aids/performance enhancers ○ Purpose ○ Various forms ○ Pros and cons ○ Market claims (Not FDA approved) ○ Athlete use ○ Negative effects on the body and safety ○ Banned substances ○ Drug testing
3.8 Explain general strength and conditioning training principles as they apply to fitness regimens	• Programs/exercises for the following purposes: ○ Flexibility ○ Cardiorespiratory fitness ○ Muscular strength ○ Muscular endurance ○ Agility • Safety practices and contraindications • Overload principle • Delayed onset muscle soreness (DOMS)

Instructional Time: 5 - 10%

STANDARD 10.0 DEMONSTRATE HEALTHCARE ORGANIZATION AND ADMINISTRATION ACTIVITIES

10.1 Document the results of observations and treatments [i.e., EMR (electronic medical record), SOAP, daily treatment records, etc.]	• Statute of limitations • Proper documentation • Subjective objective assessment plan (SOAP)
10.2 Describe the basic terminology of health insurance [i.e., co-pay, third-party payment, reimbursement, Explanation of Benefits (EOB), visit authorizations, referrals, PPO/HMO, etc.]	• Types of health insurance and common terminology • Billing appropriate to the environment
10.3 Explain the process of maintenance and inventory of supplies and equipment	• Calibration of modalities • Annual inventory assessment
10.4 Explain budgeting strategies for supplies and equipment purchasing (i.e., capital versus expendable, etc.)	• Budgeting • Ordering • Capital vs. noncapital supplies
10.5 Utilize professional resources to stay current with advances in healthcare [i.e., Centers for Disease Control and Prevention (CDC), professional journals, position statements, etc.]	• Professional development and continuing education requirements • Evidence-based practice
10.6 Assess the benefits of active involvement in local, state, and national associations and organizations [i.e., HOSA, American Physical Therapy Association (APTA), Arizona Athletic Trainers' Association (AzATA), etc.]	• Advantages and disadvantages of belonging to a professional organization • Future Health Professionals (HOSA), Board of Certification (BOC), National Athletic Trainers Association (NATA), etc.
10.7 Evaluate methods to protect patient rights through legal, moral, and ethical measures (e.g., HIPAA legal liability, codes of ethics, and standards of care)	• Ethics vs. morals • Cultural competence • Legal terms associated with liability ◦ Negligence, malpractice, etc. • Legal requirements ◦ Documentation • Legal rights and confidentiality ◦ Health Insurance Portability and Accountability Act (HIPAA) ◦ Family Educational Rights and Privacy Act (FERPA) • Advanced directives