



EMERGENCY MEDICAL SERVICES (EMS)

51.0904.00

TECHNICAL STANDARDS

An Industry Technical Standards Validation Committee developed and validated these standards on November 17, 2022. Completion of the Emergency Medical Standards, which are aligned with NHTSA's National Emergency Medical Services Education Standards, prepares students to meet the requirements of the Emergency Medical Responder (EMR) and/or Emergency Medical Technician (EMT) industry credential(s). The Arizona Career and Technical Education Quality Commission, the validating authority for the Arizona Skills Standards Assessment System, endorsed these standards on January 25, 2023.

Note: Arizona's Professional Skills are taught as an integral part of the Emergency Medical Services program.

The Technical Skills Assessment for Emergency Medical Services is available SY2024–2025.

Note: In this document i.e. explains or clarifies the content and e.g. provides examples of the content that must be taught.

STANDARD 1.0 ANALYZE THE EMERGENCY MEDICAL SERVICES SYSTEM

- 1.1 Describe key historical events that influenced the development of EMS [i.e., 1970 National Registry of Emergency Technicians traces back to war times (Civil War, World War I, World War II), 1966 Highway Safety Act and formation of NHTSA (National Highway Traffic Safety Administration), etc.]
- 1.2 Describe the components and roles of the EMS system (e.g., agencies and organizations; trained professionals; communications and transportation networks; trauma systems and hospitals; and community medical emergency plan)
- 1.3 Describe the role of EMS in public health (e.g., infection prevention and control, human trafficking, reporting and data collection, patient and community education, screenings, and vaccinations/immunizations)
- 1.4 Compare the training, roles, and responsibilities of EMRs, EMTs, AEMTs (Advanced Emergency Medical Technicians), and Paramedics
- 1.5 Identify desirable attributes of EMTs (e.g., critical thinking skills, teamwork, mental agility, physical fitness, compassion, communication skills, and hunger for learning)
- 1.6 Explain the EMS communication system (e.g., interaction within team structure; interaction with other healthcare professionals; and telemetric monitoring devices and transmission of clinical data including video data)
- 1.7 Identify and explain Arizona statutes and regulations regarding the EMS system [e.g., CAR-EMS Guidelines (Central Arizona Regional EMS Guidelines)]

STANDARD 2.0 RECOGNIZE THE IMPORTANCE OF THE WELL-BEING OF THE EMERGENCY MEDICAL TECHNICIAN

- 2.1 Identify cases with emotional stress that affect the EMT (e.g., multiple-casualty incidents; child abuse and neglect; elderly abuse; incidents involving a friend, relative, or coworker; traumatic injuries; and dealing with death and dying)
- 2.2 Describe ways to cope with death and dying issues for patients, for family members, and for the EMT
- 2.3 Identify typical stress symptoms for the EMT and others (e.g., anxiety, irritability, nausea, guilt, isolation, loss of concentration, and loss of appetite)
- 2.4 Discuss how to recognize and manage stress (e.g., physical and mental adaptations, exercise, diet, relaxation, and participation in stress management programs)
- 2.5 Differentiate between CISD (critical incident stress debriefing) and CISM (critical incident stress management)
- 2.6 Discuss the physical well-being of the EMT [e.g., personal protective equipment, handwashing, immunizations [i.e., Tetanus, Hepatitis B, MMR, Polio, etc.], and scene safety (i.e., handling hazardous, violence, etc.)]
- 2.7 Describe provisions of OSHA, CDC, and the Ryan White CARE Act as they relate to infection control
- 2.8 Describe proper lifting and moving techniques

STANDARD 3.0 EXAMINE MEDICAL, LEGAL, AND ETHICAL ISSUES RELATED TO EMERGENCY MEDICAL SERVICES

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- 3.1 Identify the code of professional ethics for EMS practitioners according to the National Association of Emergency Medical Technician (NAEMT) (e.g., to conserve life, alleviate suffering, promote health, do no harm, and encourage the quality and equal availability of emergency medical care)
- 3.2 Explain the difference between Scope of Practice and Standard of Care
- 3.3 Explain the EMT Basic Scope of Practice as outlined by the National Highway Traffic Safety Administration (NHTSA)
- 3.4 Identify the three ethical principles that EMS providers should follow [e.g., respect for others, beneficence (charity, mercy, and kindness), and justice]
- 3.5 Define and give examples of different types of patient consents (e.g., expressed, implied, and consent for minors)
- 3.6 Identify common ethical issues encountered by emergency medical services and discuss how to handle them (i.e., denying or delaying transport of patients, termination of resuscitations, restriction of EMS provider duty hours to prevent fatigue, substance abuse by EMS providers, challenges of child maltreatment recognitions and reporting, etc.)
- 3.7 Explain advance directives, including do not resuscitate orders
- 3.8 Explain the importance and legality of patient confidentiality
- 3.9 Discuss legal issues associated with required documentation (i.e., subpoenas, testifying, etc.)

STANDARD 4.0 DEMONSTRATE BASIC KNOWLEDGE OF GENERAL PHARMACOLOGY

- 4.1 Explain the Medication Cross Check Procedure (e.g., two-person verbal procedure that contains intentional error traps to find mistakes)
- 4.2 Explain the steps on using an autoinjector (e.g., inject the medicine into the fleshy outer portion of the thigh and hold in place for about 3 seconds until all the medicine is injected)
- 4.3 Explain the use of a unit-dose, premeasured intranasal device
- 4.4 Identify the drugs in the EMT Basic Scope of Practice and describe each according to generic and common trade names, indications, contraindications, side effects, forms, and routes of administration
- 4.5 Explain the Five Rights of medication administration to ensure safety and prevent complications or errors (e.g., Right Medication, Right Patient, Right Dose, Right Time, Right Route)
- 4.6 Identify special considerations in the administration of medications and access to resources for clarification (e.g., online or offline medical direction)
- 4.7 Explain the importance of accurate documentation and reevaluation of drug administration

STANDARD 5.0 ANALYZE THE ANATOMY AND THE FUNCTION OF BODY SYSTEMS

- 5.1 Describe the structure and function of the musculoskeletal system and properly name and label on a diagram, including correct terminology
- 5.2 Describe the structure and function of the respiratory system and properly name and label on a diagram, including correct terminology
- 5.3 Describe the structure and function of the cardiovascular system and properly name and label on a diagram, including correct terminology
- 5.4 Describe the structure and function of the nervous system and properly name and label on a diagram, including correct terminology
- 5.5 Describe the structure and function of the reproductive system and properly name and label on a diagram, including correct terminology
- 5.6 Describe the structure and function of the digestive system and properly name and label on a diagram, including correct terminology
- 5.7 Describe the structure and function of the integumentary system and properly name and label on a diagram, including correct terminology
- 5.8 Describe the structure and function of the endocrine system and properly name and label on a diagram, including correct terminology
- 5.9 Describe the structure and function of the renal system and properly name and label on a diagram, including correct terminology
- 5.10 Describe the structure and function of the ears, nose, throat, and eyes and properly name and label on a diagram, including correct terminology
- 5.11 Describe the anatomy and physiology differences between children and adults that affect assessment and emergency care, including correct terminology
- 5.12 Use common prefixes, suffixes, and roots to determine the meaning of medical terms

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- 5.13 Explain acronyms and abbreviations commonly used in EMS
- 5.14 Use anatomical and medical terms with regards to position and direction to describe the location of body structures and body positions in written and oral communication with EMS and healthcare professionals, as well as authority personnel

STANDARD 6.o MANAGE THE EMERGENCY MEDICAL/CRIME SCENE TO ENSURE PATIENT AND EMS PERSONNEL SAFETY

- 6.1 Identify the major components of the size-up emergency medical/crime scene (e.g., number of patients, mechanism of injury/nature of illness, resource determination, standard-precautions determination, and scene safety)
- 6.2 Identify the six major potential hazards at an emergency medical/crime scene (e.g., biological, chemical, physical, safety, ergonomic, and psychological)
- 6.3 Explain the basic elements of a crime scene (e.g., physical evidence recognition, documentation, proper collection, packaging, preservation, and scene construction)
- 6.4 Explain why teamwork and communication are so important during an emergency (e.g., to improve patient safety, reduce clinical errors, and reduce waiting times)
- 6.5 Identify the major requirements of EMS technicians at an emergency scene (e.g., establishing scene safety, loading and moving patients, delivering stabilizing care on the scene and during transport, and transferring patient care to receiving facilities)

STANDARD 7.o PERFORM PATIENT ASSESSMENT

- 7.1 Distinguish among primary assessment, history taking, and secondary assessment
- 7.2 Explain the importance of including physiological aspects of age-related assessment and treatment modifications when determining the treatment of diseases and emergencies
- 7.3 Assess a patient's baseline vital signs [e.g., GCS (Glasgow Coma Scale), pulse, respiration rate, skin, pupils, blood pressure, oxygen saturation, and blood glucose]
- 7.4 Obtain a SAMPLE history (e.g., signs/symptoms, allergies, medications, pertinent past medical history, last oral intake, and events leading to injury or illness)
- 7.5 Obtain an OPQRST (e.g., onset, provocations, quality, radiation, severity, and time)
- 7.6 Perform a primary assessment for an infant, child, and adult (e.g., form a general impression; determine responsiveness; assess airway, breathing, and circulation; and determine priorities of patient care)
- 7.7 Explain the C-A-B approach (circulation, airway, breathing) versus the A-B-C approach (airway, breathing, circulation) to a primary assessment
- 7.8 Perform a secondary assessment for a patient with medical and/or traumatic injuries to determine appropriate physical examination
- 7.9 Perform a detailed, focused physical examination of the patient (e.g., respiratory system, cardiovascular system, neurological system, and musculoskeletal system)
- 7.10 Explain the importance of recording changes in the patient's condition and reassessing interventions
- 7.11 Describe the assessment of a patient who appears to be suffering from a behavioral or psychiatric emergency
- 7.12 Explain the assessment steps for pediatric patients, including the scene size-up, primary assessment, secondary assessment with physical exam, and reassessment
- 7.13 Discuss life span development as it relates to patient assessment and management
- 7.14 Identify situations requiring the need for advanced life support (e.g., equipment and personnel)
- 7.15 Demonstrate effective communication with patients and family members of various ages and cultures, hospital personnel, and authority figures
- 7.16 Practice delivering verbal reports with pertinent patient information to healthcare personnel

STANDARD 8.o MANAGE MEDICAL EMERGENCIES

- 8.1 Describe the chain of survival (early recognition of sudden cardiac arrest and access to emergency medical care, early CPR (Cardiopulmonary resuscitation), early defibrillation, early advanced cardiac life support, and physical and emotional recovery)
- 8.2 Recognize conditions, signs, and symptoms of respiratory emergencies (e.g., COPD, asthma, pneumonia, pulmonary embolism, epiglottitis, and common cold)
- 8.3 Provide respiratory emergency care based on medical assessment and physical examination [e.g., oxygen techniques, artificial ventilation, CPAP (continuous positive airway pressure), and inhalers]
- 8.4 Recognize the signs of choking and describe treatment procedures and supportive care for infants, children, and adults

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- 8.5 Recognize signs and symptoms for cardiac emergencies (e.g., coronary artery disease, aneurysm, electrical/mechanical malfunctions of the heart, angina pectoris, acute myocardial infarction, and congestive heart failure) and treatment [i.e., administration of nitroglycerin or aspirin, AEDs (automated external defibrillators), chest compressions, CPR, etc.]
- 8.6 Recognize conditions, signs, symptoms, and treatment for diabetic emergencies involving hyperglycemia and hypoglycemia
- 8.7 Recognize signs, symptoms, and history consistent with altered mental status, including seizures, stroke, dizziness, and syncope, and develop plan for treatment
- 8.8 Recognize the signs, symptoms, and treatment for patients with allergic or anaphylactic reactions
- 8.9 Recognize the signs, symptoms, and treatment for patients where poisoning has been ingested, inhaled, or absorbed
- 8.10 Recognize the signs, symptoms, and treatment for patients of alcohol or substance abuse (e.g., stimulants, depressants, narcotics, volatile chemicals, and hallucinogens)
- 8.11 Recognize conditions that can cause unusual behavior (e.g., stress, psychiatric conditions, and suicidal ideation) and determine a treatment plan

STANDARD 9.o MANAGE TRAUMATIC INJURIES

- 9.1 Differentiate among arterial, venous, and capillary bleeding and describe the care for external bleeding
- 9.2 Identify the signs and symptoms of internal bleeding and describe the steps in the care for internal bleeding
- 9.3 Identify orthopedic injuries (e.g., open/closed fractures; dislocations; amputations/replantation; upper/lower extremity trauma; sprains/strains; and pelvic fractures) and describe the management of these injuries
- 9.4 Identify and describe the management of soft tissue trauma (e.g., wounds; thermal, electrical, and radiation burns; chemicals in eye; crush/compartment syndrome; and high-pressure injection injury)
- 9.5 Recognize signs and symptoms and describe treatment for head, facial, neck, and spine trauma (e.g., applying a cervical collar; immobilizing a seated patient, including rapid extrication for high priority patients; applying a long back board; rapid extrication from a child safety seat; immobilizing a standing patient; and immobilizing a patient wearing a helmet)
- 9.6 Identify signs, symptoms, and care for patients with nervous system trauma (e.g., traumatic brain injury and spinal cord injury)
- 9.7 Discuss the management of multi-system trauma such as blast injuries
- 9.8 Recognize signs, symptoms, and treatment for environmental-related emergencies (e.g., temperature-related illness, drowning, bites and stings, and lightning injury)

STANDARD 10.o MANAGE OBSTETRIC AND GYNECOLOGIC EMERGENCIES

- 10.1 Review the anatomical and physiological changes that occur during pregnancy and describe fetal development
- 10.2 Identify the three stages of labor
- 10.3 Demonstrate the steps in preparation and delivery
- 10.4 Describe and discuss care for complications of delivery (e.g., breech presentation, limb presentation, prolapsed umbilical cord, multiple birth, premature birth, and meconium aspiration)
- 10.5 Describe and discuss care for emergencies in pregnancy (e.g., excessive pre-birth bleeding, ectopic pregnancy, seizures in pregnancy, miscarriage and abortion, and stillbirths)
- 10.6 Describe and discuss care for gynecological emergencies (e.g., vaginal bleeding and sexual assault)
- 10.7 Demonstrate the indications and procedures for neonatal resuscitation
- 10.8 Demonstrate after-delivery care for mother and baby
- 10.9 Describe the APGAR (Appearance, Pulse, Grimace, Activity, Respiration) score and when it is needed

STANDARD 11.o MANAGE PEDIATRIC EMERGENCIES

- 11.1 Describe and discuss the developmental and anatomical differences in infants and children
- 11.2 Recognize common medical and trauma situations involving pediatric patients [e.g., difficulty breathing, seizures, fever, meningitis, diarrhea and vomiting, poisoning, drowning, and SIDS (sudden infant death syndrome)]
- 11.3 Describe how to perform infant and child CPR
- 11.4 Discuss the signs and symptoms of child abuse and neglect and the EMT's ethical and legal responsibilities
- 11.5 Demonstrate adaptations to techniques and equipment to properly manage the airway, ventilation, and oxygenation of pediatric patients
- 11.6 Discuss special challenges for pediatric patients (e.g., tracheostomy tubes, home artificial ventilators, central intravenous lines, and gastrostomy tubes)

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STANDARD 12.0 ANALYZE EMERGENCY MEDICAL SERVICES OPERATIONS

- 12.1 Recognize the types of ambulances specified by the U.S. Department of Transportation
- 12.2 Discuss safe ambulance operation while responding to the scene
- 12.3 Describe laws that apply to ambulance operations
- 12.4 Describe the required equipment to be carried by EMS response units
- 12.5 Describe the roles and responsibilities of the Emergency Medical Dispatcher
- 12.6 Describe the phases of an ambulance call
- 12.7 Identify the phases of vehicle extrication and rescue operations
- 12.8 Describe the EMT's responsibilities in transferring patients to receiving healthcare personnel
- 12.9 Describe different responses to emergency incidents (e.g., hazardous material, terrorist, rescue, and violence)
- 12.10 Discuss safe air medical operations, criteria for utilizing air medical response, and medical risks, needs, and advantages
- 12.11 Discuss risks and responsibilities of operating on the scene of a natural or man-made disaster

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