

# Emergency Medical Technician I

**8333 36 weeks**

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# Course Description

**Suggested Grade Level:** 10 or 11 or 12

The tasks for this course represent the National and Virginia Emergency Medical Services (EMS) Educational Standards. Students explore and apply the fundamentals of EMS, anatomy, physiology, and medical terminology while demonstrating skills in assessing and managing patient care, including assessing the scene and understanding shock, resuscitation, and trauma. Successful completion of this course and instructor endorsement qualifies students to enroll in EMT II to complete the program sequence. Students must complete a minimum of 85 percent of the didactic and lab aspects of the course, per 12VAC5-31-1501 in the Code of Virginia. Successful completion of all course requirements and instructor endorsement may lead to eligibility to take the Virginia State Psychomotor Exam and the National Registry of Emergency Medical Technicians (NREMT) cognitive exam. Students must meet the requirements of the Functional Position Description for the Basic Life Support Provider (refer to EMS.TR.14B and 12VAC5-31-1501 in the Code of Virginia).

NOTE: Students must be at least 16 years old prior to the first day of EMT instruction. All students will need to undergo a criminal background check that includes fingerprinting and drug screening.

This course has specific state laws and regulations from a governing medical board or agency. Please contact the Virginia Department of Education, Office of Career and Technical Education Services prior to implementing this course. All inquiries may be sent to [cte@doe.virginia.gov](mailto:cte@doe.virginia.gov).

The Virginia Department of Education, in collaboration with the Virginia Department of Health, is pleased to provide the [High School Based Emergency Medical Technician \(EMT\) Educational Program Guidelines](#). The guidelines are based on the newly revised state and national standards for emergency medical technician programs. This document serves as a guide to school divisions for implementing the revised EMT program standards consistently in all high schools and technical centers statewide.

## Task Essentials Table

- Tasks/competencies designated by plus icons (⊕) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (○) are optional
- Tasks/competencies designated by minus icons (⊖) are omitted
- Tasks marked with an asterisk (\*) are sensitive.

8333	Tasks/Competencies
Introducing Emergency Medical Technician (EMT) I	
⊕	Outline mandatory course requirements and paperwork.
⊕	Complete a state-approved certification for cardiopulmonary resuscitation (CPR).

Exploring Fundamentals of Emergency Medical Services (EMS) Systems	
+	Describe the components of EMS systems.
+	Explain the influence of research and evidence-based decision making on EMS care.
+	Describe the roles and responsibilities of an EMT toward personal safety and the safety of the crew, patient, and bystanders.
+	Explain the components and legal considerations of EMS documentation.
+	Describe the techniques of effective and efficient team communication.
+	Describe the communication skills that should be used to interact with the patient, family, and bystanders while providing patient care.
+	Explain the legal implications of EMS care.
+	Describe the EMS system's role in prevention of illness and injury through public education.
Exploring the Human Body	
+	Describe the anatomy and physiology of the major body systems.
+	Define common medical terms and abbreviations.
+	Explain the effect of pathophysiology on perfusion.
+	Describe the major physiological and psychosocial characteristics of life stages in relation to patient care.
Understanding Pharmacology	
+	Describe the principles of pharmacology.
+	Demonstrate the steps for assisting patients with administration of medications that are within an EMT's scope of practice.
+	Describe the medications that may be administered by an EMT.
Managing Airway, Respiration, and Artificial Ventilation	
+	Demonstrate assessment and management of the airway.
+	Demonstrate the assessment of respiration and management of adequate respiration.

+	Demonstrate assessment and management of adequate and inadequate ventilation.
Assessing the Patient	
+	Demonstrate a scene size-up for single-patient and multiple-patient situations.
+	Demonstrate a primary assessment.
+	Demonstrate history taking.
+	Demonstrate a secondary assessment.
+	Demonstrate the use of monitoring devices within an EMT's scope of practice.
+	Demonstrate a reassessment.
Managing Shock and Resuscitation	
+	Demonstrate the care of a patient showing signs and symptoms of shock (hypoperfusion).
+	Demonstrate the care of a patient with respiratory failure or arrest, and cardiac failure or arrest, including post-resuscitation.
Managing Traumatic Emergencies	
+	Describe management of a trauma patient.
+	Demonstrate management of bleeding.
+	Demonstrate management of a patient with a chest injury.
+	Demonstrate management of wounds to the abdomen and genitourinary system.
+	Demonstrate management of orthopedic trauma.
+	Demonstrate the steps in the emergency medical care of soft-tissue injuries.
+	Demonstrate management of head, face, neck, and spine injuries.
+	Demonstrate management of central nervous system injuries and resulting complications.
+	Differentiate traumatic injury assessment and care for special populations.
+	Explain the steps in providing care to a patient who has suffered an environmental injury.

<input checked="" type="radio"/>	Prioritize management options for patients with multi-system trauma.
Participating in Work-Based Learning	
<input checked="" type="radio"/>	Complete clinical requirements for work-based learning.
<input type="radio"/>	Participate in a supervised EMT clinical rotation.

Legend:  Essential  Non-essential  Omitted

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# Introducing Emergency Medical Technician (EMT) I

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## Task Number 39

### Outline mandatory course requirements and paperwork.

#### Definition

Outline should include

- reviewing prerequisites for emergency medical services (EMS) training programs, criminal history and standards of conduct on the first and last day of the course (refer to [High School Based EMT Educational Programs](#))
- completing First Night paperwork from the Virginia Department of Health’s Office of Emergency Medical Services (OEMS) (refer to the [Training Program Administration Manual \[TPAM\]](#))
- acknowledging that a student must take the following assessments at the completion of the course:
  - [Virginia Psychomotor Exam](#)
  - [National Registry of Emergency Medical Technicians \(NREMT\) cognitive examination.](#)

#### Process/Skill Questions

- What are the requirements for the Virginia Psychomotor Exam?
- When is the NREMT cognitive examination given?
- When would the EMT student be eligible to begin certification testing?

- What options does a student have if he/she does not meet eligibility requirements for EMS training programs?
- What is the significance of the completion of the First Night paperwork from the Virginia Department of Health's OEMS?

## **Task Number 40**

### **Complete a state-approved certification for cardiopulmonary resuscitation (CPR).**

#### **Definition**

Completion should include

- CPR training and certification prior to the first day of EMT curriculum and instruction
- successful fulfillment of the [CPR certification requirements of the Virginia OEMS](#).

#### **Process/Skill Questions**

- What level of CPR training is required for an EMT?
- When must students have proof of CPR completion?
- When should an individual retrain in CPR?

#### **HOSA Competitive Events (High School)**

##### **Emergency Preparedness Events**

- CPR/First Aid

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## **Exploring Fundamentals of Emergency Medical Services (EMS) Systems**

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### **Task Number 41**

#### **Describe the components of EMS systems.**

##### **Definition**

Description should include

- history of EMS
- patient safety
- quality improvement and the EMT's role
- roles, responsibilities, and expectations for professionalism of EMS providers, as specified in Virginia statutes
- medical direction and the EMT's role
- methods used to access the EMS system.

### **Process/Skill Questions**

- What is the significance of the EMS White Paper (1966) in the creation of EMS systems?
- What areas of the run report would be identified for quality improvement?
- What is the difference between online and offline medical direction?

## **Task Number 42**

### **Explain the influence of research and evidence-based decision making on EMS care.**

#### **Definition**

Explanation should include

- the effects on on-scene care decisions
- the recording of patient data by an EMT
- improvement of EMS care through patient reports
- the effect of research on changes in healthcare guidelines.

### **Process/Skill Questions**

- How are new medical advancements integrated into EMS?
- What effect does military field medicine have on EMS?
- How is research involved in revision of local or state protocols?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- Emergency Medical Technician



## **Task Number 43**

**Describe the roles and responsibilities of an EMT toward personal safety and the safety of the crew, patient, and bystanders.**

### **Definition**

Description should include

- standard safety precautions
- personal protective equipment (PPE)
- stress management (including dealing with death and dying)
- prevention of work-related injuries
- lifting and moving patients
- disease transmission
- wellness principles.

### **Process/Skill Questions**

- What probable stressors are EMRs exposed to?
- What resources are available to support mental health and stress management for EMS providers?
- What effect does using improper lifting technique have on the provider and on the patient?
- Why should an EMR have a good understanding of the stages of grief?
- What are some measures that can be taken for provider safety?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- Emergency Medical Technician
- 

## **Task Number 44**

**Explain the components and legal considerations of EMS documentation.**

### **Definition**

Explanation should include

- the principles of medical documentation and report writing
- the information included on a written or electronic report, including standard methods of recording patient information
- cybersecurity and privacy (e.g., Health Insurance Portability and Accountability Act of 1996 [HIPAA]) considerations.

### **Process/Skill Questions**

- How does an EMT use documentation to paint a picture for medical control?
- What information should be included in the narrative section of patient documentation?
- What are the legal considerations of a patient-care report that is used as a court document?

### **HOSA Competitive Events (High School)**

#### **Health Science Events**

- Knowledge Test: Medical Law and Ethics

#### **Emergency Preparedness Events**

- Emergency Medical Technician

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## **Task Number 45**

### **Describe the techniques of effective and efficient team communication.**

#### **Definition**

Description should include the techniques for

- calling for additional resources
- transferring care of the patient to another EMS provider or to hospital staff
- interacting within the team structure
- using the EMS communication system
- communicating with other public safety and healthcare professionals.

### **Process/Skill Questions**

- What information should be communicated when transferring a patient to another EMS provider or to the hospital staff?
- How should an EMS provider communicate on the radio when additional resources are required?
- How should an EMT communicate with team members, patients, and bystanders during an incident?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- Emergency Medical Technician

## **Task Number 46**

**Describe the communication skills that should be used to interact with the patient, family, and bystanders while providing patient care.**

### **Definition**

Description should include

- the difference between communication skills used to interact with the patient and those used to interact with others.
- ways to adjust communication strategies for a patient's age, stage of development, special needs, and cultural differences
- interviewing techniques
- verbal defusing strategies
- family-presence issues.

### **Process/Skill Questions**

- How do various stages of development affect the communication with patients?
- What can the EMS provider discuss with the family concerning a patient and his/her care?
- How can the EMT communicate with a patient with special needs or with the patient's caregiver?

## **Task Number 47**

## **Explain the legal implications of EMS care.**

### **Definition**

Explanation should include aspects such as

- scope of practice of an EMT
- consent and refusal of care
- confidentiality
- advance directives
- tort and criminal actions
- evidence preservation
- statutory responsibilities
- mandatory reporting
- ethical and moral obligations
- end-of-life issues.

Teacher resource: [Virginia Department of Health, OEMS, VEMSES](#)

### **Process/Skill Questions**

- What type of consent must be obtained for an EMT to provide patient care?
- What information is necessary for an EMT and patient if refusal of care or an advance directive is documented?
- What is the difference between scope of practice and standard of care?
- What situations require mandatory reporting?

### **HOSA Competitive Events (High School)**

#### **Health Science Events**

- Knowledge Test: Medical Law and Ethics

#### **Emergency Preparedness Events**

- Emergency Medical Technician

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## **Task Number 48**

**Describe the EMS system's role in prevention of illness and injury through public education.**

## **Definition**

Description should include

- local public health resources for preventing illness and injury
- the role of EMS personnel in public health emergencies
- the principles of illness and injury prevention in emergency care.

## **Process/Skill Questions**

- How can public education be used to inform the community about prevention of illness and injury?
- How can an EMT use public education as a means to promote illness and injury prevention when answering an emergency call?
- What agencies assist EMS in public health emergencies?

# **Exploring the Human Body**

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## **Task Number 49**

**Describe the anatomy and physiology of the major body systems.**

### **Definition**

Description should include the structures and function of the following systems:

- Respiratory
- Circulatory
- Musculoskeletal
- Nervous
- Endocrine
- Gastrointestinal
- Genitourinary
- Reproductive
- Integumentary

### **Process/Skill Questions**

- How does the respiratory system receive oxygen for the red blood cells?
- What are the components of the circulatory system?

- How can one system affect another system during an illness?

## **HOSA Competitive Events (High School)**

### **Teamwork Events**

- HOSA Bowl
- 

## **Task Number 50**

### **Define common medical terms and abbreviations.**

#### **Definition**

Definition should include

- listing common anatomical and topographical terms and abbreviations
- providing a standard definition of each.

#### **Process/Skill Questions**

- What is the purpose of using anatomical terms when communicating with another healthcare provider or documenting the patient's illness or injury?
- What clues can be obtained by having knowledge of medical terminology?
- What abbreviations are acceptable on the patient care report?

## **HOSA Competitive Events (High School)**

### **Health Science Events**

- Medical Terminology
- 

## **Task Number 51**

### **Explain the effect of pathophysiology on perfusion.**

#### **Definition**

Explanation should include the interrelationship of body systems as part of the life-support chain.

## **Process/Skill Questions**

- What body systems are affected during cardiac arrest?
- How does perfusion affect the circulatory and respiratory systems?
- How does CPR, when performed correctly, affect the life-support chain?

## **HOSA Competitive Events (High School)**

### **Health Science Events**

- Knowledge Test: Pathophysiology
- 

## **Task Number 52**

### **Describe the major physiological and psychosocial characteristics of life stages in relation to patient care.**

#### **Definition**

Description should include

- identification of the life stages, including the physiological and psychosocial characteristics that define each
- the ways life-span development affects patient assessment and management.

## **Process/Skill Questions**

- What is the proper approach for assessing an elderly patient?
- What is the proper approach for assessing a pediatric patient?
- What fears would an EMT expect of an injured adolescent?

## **HOSA Competitive Events (High School)**

### **Health Science Events**

- Knowledge Test: Human Growth and Development
- 

## **Understanding Pharmacology**

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## Task Number 53

### Describe the principles of pharmacology.

#### Definition

Description should include the

- fundamentals of medication safety
- forms and routes of medication used during an emergency
- definition of general pharmacological terms, such as *trade names*, *generic names*, *indications*, *contraindications*, *side effects*, *actions*, *dosage*, and *route*.

#### Process/Skill Questions

- Why do medications have multiple names, such as trade names, generic names, and brand names?
- What information should be given to medical control to obtain permission, when appropriate, to assist a patient with his/her medication?
- What are the indications, contraindications, side effects, actions, and dosages of medications with which EMTs are allowed to assist?

### HOSA Competitive Events (High School)

#### Health Science Events

- Knowledge Test: Pharmacology

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## Task Number 54

### Demonstrate the steps for assisting patients with administration of medications that are within an EMT's scope of practice.

#### Definition

Demonstration should include

- identifying the *five rights* of assisting a patient with administration of his/her medication



- assisting with giving medication to a patient
- administering medication to a patient.

### **Process/Skill Questions**

- What is the importance of the *five rights* of assisting the patient with the administration of his/her medications?
- How would an EMT assist with or administer medications that are within the EMT's scope of practice?
- What should an EMT do if he or she believes medical control provided an incorrect dosage?

### **HOSA Competitive Events (High School)**

#### **Health Science Events**

- Knowledge Test: Pharmacology
- 

## **Task Number 55**

### **Describe the medications that may be administered by an EMT.**

#### **Definition**

Description should include medication

- names
- actions
- indications and contraindications
- complications
- routes of administration
- side effects
- interactions
- dosages.

### **Process/Skill Questions**

- What medications may an EMT assist with or administer to a patient?
- What are the routes of administration of these medications?
- What are the dosages of medications that an EMT may assist with or administer?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- Emergency Medical Technician
- 

# **Managing Airway, Respiration, and Artificial Ventilation**

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## **Task Number 56**

### **Demonstrate assessment and management of the airway.**

#### **Definition**

Demonstration should include

- a description of the anatomy and physiology related to the airway
- an explanation of the signs and symptoms of adequate vs. inadequate breathing
- standard procedures used to assess the airway of patients of all ages
- techniques within an EMT's scope of practice that are used to assure the airway for patients of all ages
  - supraglottic airways
  - suctioning
  - airway obstruction
  - tracheostomy tubes/stomas
  - airway adjuncts.

#### **Process/Skill Questions**

- What is adequate breathing? What is inadequate breathing?
- What are the sections of the pharynx?
- How is the airway assessed during primary assessment?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- CPR/First Aid

- Emergency Medical Technician
- 

## **Task Number 57**

### **Demonstrate the assessment of respiration and management of adequate respiration.**

#### **Definition**

Demonstration should include the

- description of the related pathophysiology and physiology, including pulmonary ventilation, oxygenation, and respiration (e.g., external, internal, cellular)
- administration of supplemental oxygen therapy
  - pulse oximetry
  - venturi masks
  - other supplemental oxygen delivery devices
- description and use of the components of an oxygen delivery system.

#### **Process/Skill Questions**

- What are the various ways oxygen can be administered to a patient?
- How is the oxygen delivery system set up and checked before each ambulance call?
- What is the difference between external and internal respiration?

#### **HOSA Competitive Events (High School)**

##### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 58**

### **Demonstrate assessment and management of adequate and inadequate ventilation.**

#### **Definition**

Demonstration should include

- an explanation of the effect of ventilation on cardiac output
- implementation of
  - artificial ventilation, including continuous positive airway pressure (CPAP) devices
  - minute ventilation
  - alveolar ventilation
  - pulse oximetry
  - capnography/end-tidal carbon dioxide (CO<sub>2</sub>) monitoring
  - flow-restricted, oxygen-powered ventilation device (FROPVD)
  - automatic transport ventilator (ATV).

### **Process/Skill Questions**

- How is artificial ventilation given to an adult patient, to a child, and to an infant?
- How is minute ventilation calculated?
- How would an EMT calculate how much oxygen is reaching the alveoli?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- CPR/First Aid
- Emergency Medical Technician

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# **Assessing the Patient**

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## **Task Number 59**

**Demonstrate a scene size-up for single-patient and multiple-patient situations.**

### **Definition**

Demonstration should include assessing

- scene safety issues
- the mechanism of injury or nature of illness

- the steps needed for scene management
- the presence and effect of environmental hazards, if any
- the presence and management of violence, if any
- Standard Precautions appropriate to the scene
- the need for additional resources.

### **Process/Skill Questions**

- Why is determining the mechanism of injury or nature of illness an important part of the scene size-up?
- What are examples of hazards that may be found on a motor-vehicle collision scene, an assault scene, or another scene type common to the local area?
- When should an EMT call for additional resources?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- CPR/First Aid
- Emergency Medical Technician

## **Task Number 60**

### **Demonstrate a primary assessment.**

#### **Definition**

Demonstration should include

- forming a general impression
- assessing a patient's level of consciousness
- assessing a patient's airway, breathing, and circulation (ABC)
- identifying life threats
- assessing vital functions
- integrating treatment or procedures needed to preserve life
- making and communicating a transport decision.

### **Process/Skill Questions**

- What things should an EMT consider when forming a general impression?
- What are the three parts of the assessment of circulation, and what does each one tell the EMT about the patient's condition?

- What treatments should be performed during the primary assessment, and which ones can be delayed until the secondary assessment?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 61**

### **Demonstrate history taking.**

#### **Definition**

Demonstration should include

- investigating the chief complaint
- assessing the mechanism of injury or nature of illness
- soliciting and recording a patient's past medical history
- identifying associated signs or symptoms
- identifying and including pertinent negatives in the history.

#### **Process/Skill Questions**

- How does mechanism of injury or nature of illness change the questions included when an EMT is investigating the chief complaint?
- What is a pertinent negative, and why is it important to include in a patient history?
- How does the patient's chief complaint (medical or trauma) change when the patient history is performed within the assessment sequence?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- Emergency Medical Technician
- 

## **Task Number 62**

## **Demonstrate a secondary assessment.**

### **Definition**

Demonstration should include

- performing a rapid body scan
- carrying out a focused assessment of pain
- assessing vital signs
- assessing breath sounds
- using techniques of physical examination for various body systems (e.g., respiratory, cardiovascular, neurological, musculoskeletal).

### **Process/Skill Questions**

- What determines whether a patient should have a rapid physical exam or a focused exam?
  - What are some specific techniques used during a physical exam?
  - What are the components of a set of baseline vital signs? What does each one tell an EMT about a patient's condition?
- 

## **Task Number 63**

### **Demonstrate the use of monitoring devices within an EMT's scope of practice.**

#### **Definition**

Demonstration should include

- pulse oximetry
- capnography/end-tidal CO<sub>2</sub>
- acquisition of a 12-lead electrocardiogram (ECG)
- noninvasive blood pressure determination
- blood glucose determination.

#### **Process/Skill Questions**

- What pulse oximetry limitations should an EMT know and consider?
- How does the measurement of blood pressure by auscultation differ from measurement by palpation?
- Who should have a blood glucose measurement as part of an assessment?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- Emergency Medical Technician
- 

## **Task Number 64**

### **Demonstrate a reassessment.**

#### **Definition**

Demonstration should include

- explaining when and how to perform a reassessment for all patient situations
- identifying and performing the components of a reassessment.

#### **Process/Skill Questions**

- What components of a reassessment are most important?
- How does the severity of the patient's condition determine the frequency of the reassessment?
- Why should a reassessment be performed?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- Emergency Medical Technician
- 

## **Managing Shock and Resuscitation**

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## **Task Number 65**

### **Demonstrate the care of a patient showing signs and symptoms of shock (hypoperfusion).**



## **Definition**

Demonstration should include

- identifying causes of shock
- explaining the pathophysiology associated with hypoperfusion
- following the accepted steps to treat a patient with these symptoms.

## **Process/Skill Questions**

- How does an EMT determine whether a patient is in compensated or decompensated shock?
- What are the three components of the cardiovascular system, and how does the failure of each result in shock?
- How do the interventions an EMT can perform for a patient in shock help support perfusion?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 66**

### **Demonstrate the care of a patient with respiratory failure or arrest, and cardiac failure or arrest, including post-resuscitation.**

## **Definition**

Demonstration should include

- identifying the causes of respiratory arrest and cardiac arrest
- explaining the pathophysiology associated with these conditions
- following the accepted steps to treat a patient with these symptoms.

## **Process/Skill Questions**

- Why might a respiratory problem lead to cardiac arrest?
- How can bradycardia and tachycardia both result in cardiac failure?

- How does the automated external defibrillator (AED) work for a patient in cardiac arrest?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

# **Managing Traumatic Emergencies**

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## **Task Number 67**

### **Describe management of a trauma patient.**

#### **Definition**

Description should include

- an explanation of trauma scoring
- a summary of rapid transport and destination issues
- a discussion of the pros and cons of various transport modes.

#### **Process/Skill Questions**

- What mechanisms of injury make a patient a high priority for transport?
- What is the golden period and the platinum ten?
- When should a patient be transported by air medical evacuation instead of by ground ambulance?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
-

## **Task Number 68**

### **Demonstrate management of bleeding.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of the

- ways to assess external bleeding
- ways to recognize or deduce the presence of internal bleeding
- standard procedures for managing different forms of bleeding.

#### **Process/Skill Questions**

- What are an EMT's priorities in treating a patient with severe bleeding? What is the top priority?
- When and how should a tourniquet be applied?
- What signs and symptoms are indicative of internal bleeding?
- When might it be necessary to pack a wound?
- What is the benefit of hemostatic agents?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
  - Life Support Skills
- 

## **Task Number 69**

### **Demonstrate management of a patient with a chest injury.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of

- comparison of chest injuries caused by blunt mechanisms to those caused by penetrating mechanisms
- impaled objects
- hemothorax
- pneumothorax (e.g., open, simple, tension)

- cardiac tamponade
- rib fractures
- flail chest
- commotio cordis.

### **Process/Skill Questions**

- How does a pneumothorax disrupt the mechanism of breathing?
  - When should an impaled object be stabilized in place and when should it be removed?
  - Why do injuries like a pneumothorax and cardiac tamponade cause jugular vein distention?
  - How is a flail segment treated?
- 

## **Task Number 70**

### **Demonstrate management of wounds to the abdomen and genitourinary system.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of

- abdominal and genitourinary wounds caused by blunt mechanisms compared to those caused by penetrating mechanisms
- impaled objects
- solid and hollow organ injuries
- evisceration
- injuries to the external genitalia
- vaginal bleeding due to trauma
- sexual assault.

### **Process/Skill Questions**

- What organs are located in each of the abdominal quadrants?
- How is an abdominal evisceration properly managed?
- What are some general guidelines an EMT should follow in managing bleeding from a wound to the external genitalia?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 71**

### **Demonstrate management of orthopedic trauma.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of

- upper and lower extremity orthopedic trauma
- open and closed fractures
- dislocations
- sprains and strains
- pelvic fractures
- amputations and replantation.

#### **Process/Skill Questions**

- What are the guidelines for properly splinting an orthopedic injury?
- What is the proper care for an amputated body part for the purpose of replantation?
- When should an EMT consider realigning an angulated extremity injury?
- What are the types of fractures?

#### **HOSA Competitive Events (High School)**

##### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 72**

### **Demonstrate the steps in the emergency medical care of soft-tissue injuries.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of

- wounds (e.g., avulsions, bites, lacerations, punctures, incisions)
- burns (e.g., electrical, chemical, thermal, radiation)
- chemicals in the eye or on the skin
- crush syndrome.

### **Process/Skill Questions**

- What are some of the bandaging techniques used for soft-tissue injuries to various parts of the body?
- How does the treatment of a burn injury vary based on the source of the burn?
- What are the major complications of crush syndrome?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- CPR/First Aid
- Emergency Medical Technician
- Life Support Skills

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## **Task Number 73**

### **Demonstrate management of head, face, neck, and spine injuries.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of

- life threats related to head, face, neck, and spine injuries
- spine trauma
- penetrating neck trauma
- laryngotracheal injuries
- facial fractures
- skull fractures
- foreign bodies in the eyes
- dental trauma.

### **Process/Skill Questions**

- What are the most significant complications associated with an open neck wound?
- How can facial trauma affect the patient's airway?
- What management techniques are specifically used for a foreign body in the eye?

## **HOSA Competitive Events (High School)**

### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 74**

### **Demonstrate management of central nervous system injuries and resulting complications.**

#### **Definition**

Demonstration should include pathophysiology, assessment, and management of

- traumatic brain injuries
- spinal cord injuries.

#### **Process/Skill Questions**

- What are the general principles involved in spinal immobilization?
  - How can an injury to the spinal cord result in the patient developing shock?
  - What signs and symptoms are indicative of increasing intracranial pressure?
- 

## **Task Number 75**

### **Differentiate traumatic injury assessment and care for special populations.**

#### **Definition**

Differentiation should include pathophysiology, assessment, and management of trauma in

- pregnant patients

- pediatric patients
- geriatric patients
- cognitively impaired patients.

### **Process/Skill Questions**

- What should an EMT know about the vital signs of a pregnant patient when making a traumatic injury assessment?
- What is different about the progression of shock in a pediatric patient compared to that in an adult?
- How can decreased pain sensitivity in a geriatric patient affect assessment of an injury?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**

- CPR/First Aid
- Emergency Medical Technician

## **Task Number 76**

### **Explain the steps in providing care to a patient who has suffered an environmental injury.**

#### **Definition**

Explanation should include the pathophysiology, assessment, and management of

- submersion incidents
- temperature-related illnesses.

### **Process/Skill Questions**

- Why are water temperature and cleanliness the primary factors in a patient's care and survival after a submersion incident?
- What are the major differences in the treatment of mild vs. severe hypothermia?
- What are the major differences in the treatment of heat exhaustion vs. heatstroke?
- How may a rapid ascent from deep water result in trauma to the patient?

### **HOSA Competitive Events (High School)**

#### **Emergency Preparedness Events**



- CPR/First Aid
  - Emergency Medical Technician
- 

## **Task Number 77**

### **Prioritize management options for patients with multi-system trauma.**

#### **Definition**

Prioritization should include pathophysiology, assessment, and management of multi-system trauma patients, including those with blast injuries.

#### **Process/Skill Questions**

- How can an EMS crew best prepare for managing multi-system trauma patients?
- What physiologic and anatomic criteria place a patient in the high priority category for transport?
- What are the phases of a blast injury, and what kinds of injuries generally result from each phase?

#### **HOSA Competitive Events (High School)**

##### **Emergency Preparedness Events**

- CPR/First Aid
  - Emergency Medical Technician
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## **Participating in Work-Based Learning**

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### **Task Number 78**

#### **Complete clinical requirements for work-based learning.**

##### **Definition**

Completion adheres to requirements set by the

- state
- region
- locality.

### **Process/Skill Questions**

- What are the requirements before participating in a supervised EMT clinical rotation?
  - Why is it important to be up-to-date on immunizations before working in a clinical setting?
  - Why is it necessary to have a criminal background check completed before beginning clinical rotations?
- 

## **Task Number 79**

### **Participate in a supervised EMT clinical rotation.**

#### **Definition**

Participation should consist of a minimum of 10 clinical or field patient contacts and include

- observation of emergency department operations for a period of time sufficient to gain an appreciation for the continuum of care
- at least five live-clinical or field-patient contacts (in a hospital, clinic, nursing home, doctor's office, or with local EMS agencies)
- no more than five clinical or field-patient contacts via simulation.

#### **Process/Skill Questions**

- How many live and simulated clinical experiences are needed to meet the state clinical rotation requirements?
  - Where can clinical rotations be done?
  - Where will EMS students find local EMS agencies to join and further assist with supervised EMT clinical rotations?
  - When can EMT students begin supervised clinical rotations?
- 

## **SOL Correlation by Task**

39	Outline mandatory course requirements and paperwork.	English: 10.6, 10.7, 11.6, 11.7, 12.6, 12.7
40	Complete a state-approved certification for cardiopulmonary resuscitation (CPR).	
41	Describe the components of EMS systems.	English: 10.5, 11.5, 12.5
42	Explain the influence of research and evidence-based decision making on EMS care.	English: 10.5, 11.5, 12.5
43	Describe the roles and responsibilities of an EMT toward personal safety and the safety of the crew, patient, and bystanders.	English: 10.5, 11.5, 12.5 History and Social Science: WHI.6, WHII.4
44	Explain the components and legal considerations of EMS documentation.	English: 10.5, 11.5, 12.5 History and Social Science: VUS.14, WG.17, WHII.14
45	Describe the techniques of effective and efficient team communication.	English: 10.5, 11.5, 12.5
46	Describe the communication skills that should be used to interact with the patient, family, and bystanders while providing patient care.	English: 10.5, 11.5, 12.5
47	Explain the legal implications of EMS care.	English: 10.5, 11.5, 12.5
48	Describe the EMS system's role in prevention of illness and injury through public education.	English: 10.5, 11.5, 12.5
49	Describe the anatomy and physiology of the major body systems.	English: 10.5, 11.5, 12.5 History and Social Science: WHI.15, WHII.2, WHII.4 Science: BIO.4
50	Define common medical terms and abbreviations.	English: 10.3, 11.3, 12.3 History and Social Science: WHI.15, WHII.2, WHII.4
51	Explain the effect of pathophysiology on perfusion.	History and Social Science: WHII.4
52	Describe the major physiological and psychosocial characteristics of life stages in relation to patient care.	English: 10.5, 11.5, 12.5
53	Describe the principles of pharmacology.	English: 10.5, 11.5, 12.5
54	Demonstrate the steps for assisting patients with administration of medications that are within an EMT's scope of practice.	English: 10.5, 11.5, 12.5
55	Describe the medications that may be administered by an EMT.	English: 10.5, 11.5, 12.5

56	Demonstrate assessment and management of the airway.	
57	Demonstrate the assessment of respiration and management of adequate respiration.	History and Social Science: WHII.4
58	Demonstrate assessment and management of adequate and inadequate ventilation.	History and Social Science: WHII.4
59	Demonstrate a scene size-up for single-patient and multiple-patient situations.	
60	Demonstrate a primary assessment.	
61	Demonstrate history taking.	
62	Demonstrate a secondary assessment.	
63	Demonstrate the use of monitoring devices within an EMT's scope of practice.	
64	Demonstrate a reassessment.	
65	Demonstrate the care of a patient showing signs and symptoms of shock (hypoperfusion).	
66	Demonstrate the care of a patient with respiratory failure or arrest, and cardiac failure or arrest, including post-resuscitation.	
67	Describe management of a trauma patient.	English: 10.5, 11.5, 12.5
68	Demonstrate management of bleeding.	
69	Demonstrate management of a patient with a chest injury.	
70	Demonstrate management of wounds to the abdomen and genitourinary system.	
71	Demonstrate management of orthopedic trauma.	
72	Demonstrate the steps in the emergency medical care of soft-tissue injuries.	
73	Demonstrate management of head, face, neck, and spine injuries.	
74	Demonstrate management of central nervous system injuries and resulting complications.	
75	Differentiate traumatic injury assessment and care for special populations.	English: 10.5, 11.5, 12.5
76	Explain the steps in providing care to a patient who has suffered an environmental injury.	English: 10.5, 11.5, 12.5
77	Prioritize management options for patients with multi-system trauma.	English: 10.5, 11.5, 12.5
78	Complete clinical requirements for work-based learning.	
79	Participate in a supervised EMT clinical rotation.	

## Teacher Resources

- [Virginia Department of Health, Office of Emergency Medical Services \(OEMS\)](#)
- [High-School-Based Emergency Medical Services \(EMS\) Educational Programs Guide \(2019\)](#)

- [Initial BLS Training Programs: First Class Paperwork, Virginia OEMS](#) (as of 2019; to access the most recent version of this document, please visit the [Virginia OEMS website](#))
- [Initial BLS Training Programs: Last Class Paperwork, Virginia OEMS](#) (as of 2019; to access the most recent version of this document, please visit the [Virginia OEMS website](#))

# Appendix: Credentials, Course Sequences, and Career Cluster Information

## Industry Credentials: Only apply to 36-week courses

- College and Work Readiness Assessment (CWRA+)
- Emergency and Fire Management Services Assessment
- National Career Readiness Certificate Assessment
- Workplace Readiness Skills for the Commonwealth Examination

**Concentration sequences:** *A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.*

- Emergency Medical Technician II (8334/36 weeks)

Career Cluster: Health Science	
Pathway	Occupations
Therapeutic Services	Emergency Medical Technician, Paramedic