

Adopted

**Career Technical Credit Transfer (CT²)
Emergency Medical Technician-Intermediate
Career Technical Assurance Guide (CTAG)
October 17, 2008**

The following course or Career-Technical Assurance Number (CTAN) is eligible for transfer between career-technical education, adult workforce education, and post-secondary education.

CTEMTI003 – Emergency Medical Technician – Intermediate		Credits: Proposed 8 Semester and 12 Quarter
Advising Notes: Those persons holding current Ohio certification as an EMT-Intermediate (I) will be given what the receiving institution is offering as credit for its CT ² approved EMT-I course. The awarding of credit for the EMT-I course of study <u>may</u> decrease the time to associate degree completion, when such a degree is offered, but will not replace any portion of the EMT – Basic or the EMT-Paramedic curricula as the later two are separate courses of study. Prerequisite: A valid and current State of Ohio EMT Intermediate Certificate.		
Module I	Preparatory	
Module II	Airway Management and Ventilation	
Module III	Patient Assessment	
Module IV	Trauma	
Module V	Medical Emergencies	
Module VI	Special Considerations	
Clinical Experience and Pre-hospital Internship		
Minimum Hours = 130		
Note: Credit hours assigned to CTANs are “relative values,” which are used to help determine the equivalency of submitted coursework or content. Once approved by a validation panel as a CT² course, students will be given what the receiving institution is offering as credit for its approved course.		

The CTAN illustrates the learning outcomes that are equivalent or common in introductory technical courses. In order for completers to receive the indicated credit, institutions must document that their course/program content matches the learning outcomes in the CTANs. The program outcomes identified below represent the **technical course/content** found in EMT-Intermediate programs as defined by The State Board of Emergency Medical Services and the Ohio Revised Code 4765. In some cases, completers must also hold certain licenses and/or certifications or have satisfied specific external validators such as the examination to acquire an EMT-Intermediate certificate.

Pertinent to H. B. 66 legislation, industry standards and certifications provide documentation of student learning. Recognized industry standards are expectations established by business, industry, state agencies, or professional associations that defines training program curricular requirements, establishes certification or licensure criteria, and often serves as the basis for program accreditation.

Institutional Requirements and Credit Conditions:

1. The receiving institution must have accreditation from the Ohio Department of Public Safety Division of Emergency Medical Services to offer an EMT-I training program.
2. The applicant must provide proof to the receiving institution that she/he holds a current and valid State of Ohio EMT-I certificate.
3. The applicant must provide proof to the receiving institution that she/he has completed an EMT-I training course offered by public assisted career-technical institution (secondary or adult) or state supported college.
4. Candidates for graduation from collegiate or university programs may have to satisfy additional degree requirements associated with the basic related or general education studies.
5. Admission requirements of individual institutions and/or programs are unaffected by the implementation of CT² outcomes.
6. Institutional residency requirements may affect the amount of transfer credit.

Description of the Profession

EMT-Intermediate

EMT-Intermediates have fulfilled prescribed requirements by a credentialing agency to practice the art and science of out-of-hospital medicine in conjunction with medical direction. Through performance of assessments and providing medical care, their goal is to prevent and reduce mortality and morbidity due to illness and injury for emergency patients in the out-of hospital setting.

EMT-Intermediates possess the knowledge, skills and attitudes consistent with the expectations of the public and the profession. EMT-Intermediates recognize that they are an essential component of the continuum of care and serve as a link for emergency patients to acute care resources.

The primary roles and responsibilities of EMT-Intermediates are to maintain high quality out-of-hospital emergency care. Ancillary roles of the EMT-Intermediate may include public education and health promotion programs as deemed appropriate by the community.

EMT-Intermediates are responsible and accountable to medical direction, the public, and their peers. EMT-Intermediates recognize the importance of research and actively participate in the design, development, evaluation and publication of research. EMT-Intermediates seek to take part in life-long professional development, peer evaluation, and assume an active role in professional and community organizations.

Emergency Medical Technician - Intermediate Course Description

EMT-Intermediate

Emergency Medical Technician Intermediate (EMT-I). Specialized subject matter, laboratory, clinical and vehicle experiences designed to prepare EMT-As [EMT-Bs] to provide advanced life support in the pre-hospital phase of an emergency. Instruction includes patient assessment, trauma-triage, airway management, intravenous, intramuscular, and subcutaneous administration of medications, intravenous therapy, EKG monitoring and defibrillation, advanced

study of the pathophysiology of illness and injuries, delivery and newborn care. The personnel trained may be members of fire departments, police departments, or other agencies that are involved in the emergency treatment and rescue of people.

Ohio Department of Education Subject Codes Pertinent to EMT-Intermediate

07.0947 (51.0904)	EMERGENCY MEDICAL TECHNICIAN- INTERMEDIATE	Specialized classroom, clinical and vehicle experience designed to prepare EMT-As [EMT-B] to do advanced skills. Instruction includes patient assessment, pathophysiology and treatment of shock, airway management, intravenous therapy, EKG monitoring and defibrillation.
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Learning Outcomes

Summary of Learning Outcomes

All outcomes essential

Note:

MODULE I PREPARATORY

At the completion of this module, the EMT-Intermediate student will understand roles and responsibilities of an EMT- I basic anatomy and physiology and how it relates to the foundations of medicine, basic principles of pharmacology, and be able to safely and precisely access the venous circulation and administer medications.

MODULE I LESSON I PREPARATORY: ROLES AND RESPONSIBILITES

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 1-1.1 Review EMS Systems and CISM.
- 1-1.2 Review the common physiological and psychological effects of stress.
- 1-1.3 Review the components of Critical Incident Stress Management.
- 1-1.4 Review the importance of universal precautions and body substance isolation practices.
- 1-1.5 Identify and explain the importance of laws pertinent to the EMT-Intermediate.
- 1-1.6 List the specific problems or conditions encountered while providing care.
- 1-1.7 Review and define associated terminology
- 1-1.8 Review the steps to take if a patient refuses care.
- 1-1.9 demonstrates the proper procedure for personal protection from disease.
- 1-1.10 Demonstrate a working knowledge of legal terms specific to local protocols.

MODULE I LESSON II PREPARATORY: BASIC PRINCIPLES OF ANATOMY AND PHYSIOLOGY

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 1-2.1 Define anatomy, physiology and pathophysiology.
- 1-2.2 Define homeostasis.

- 1-2.3 Identify the anatomical planes.
- 1-2.4 Name the divisions of the nervous system and state the function of each.
- 1-2.5 Describe nerve impulse transmission.
- 1-2.6 Identify the components of the central nervous system.
- 1-2.7 State the function of the hormones of the pancreas.
- 1-2.8 State the functions of epinephrine and norepinephrine.
- 1-2.9 Describe the characteristics of blood and its composition.
- 1-2.10 State the importance of blood clotting.
- 1-2.11 Describe the cardiac cycle.
- 1-2.12 Name the parts of the cardiac conduction pathway.
- 1-2.13 Explain the relationship between stroke volume, heart rate, and cardiac output.
- 1-2.14 Explain the nervous system.
- 1-2.15 Describe the structure and function of the arteries, veins and capillaries.
- 1-2.16 Describe the pathway and purpose of pulmonary circulation.
- 1-2.17 Describe the pathway and purpose of systemic circulation.
- 1-2.18 Define blood pressure and explain the factors that regulate blood pressure.
- 1-2.19 Describe the structure and functions of the respiratory system.
- 1-2.20 Describe normal inhalation and exhalation.
- 1-2.21 Differentiate between ventilation and respiration.
- 1-2.22 Describe how oxygen and carbon dioxide are transported in the blood.
- 1-2.23 Explain the nervous and chemical mechanisms that regulate respiration.
- 1-2.24 Describe the water compartments and the name for the fluid in each.
- 1-2.25 Describe the three buffer systems in body fluids.
- 1-2.26 Explain why the respiratory system has an effect on pHs.
- 1-2.27 Explain the renal mechanisms for pH regulation.

MODULE 1 LESSON III PREPARATORY: BASIC PRINCIPLES OF PHARMACOLOGY

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 1-3.1 Review the specific anatomy and physiology pertinent to pharmacology.
- 1-3.2 Discuss the standardization of the drugs.
- 1-3.3 Differentiate among the chemical, generic, and trade names of a drug.
- 1-3.4 List the four main sources of drug products.
- 1-3.5 Describe how drugs are classified.
- 1-3.6 List the authoritative sources for drug information.
- 1-3.7 Discuss responsibilities and scope of management pertinent medications.
- 1-3.8 List and differentiate routes of drug administration.
- 1-3.9 Differentiate between enteral and parenteral routes of drug administration.

- 1-3.10 Describe the mechanism of drug action.
- 1-3.11 List and describe numerous factors associated with medications.

MODULE I LESSON IV PREPARATORY: VENOUS CIRCULATION ACCESS/MEDICATION ADMINISTRATION.

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 1-4.1 Review mathematical principles.
- 1-4.2 Review mathematical equivalents.
- 1-4.3 Discuss formulas as a basis for performing drug calculations.
- 1-4.4 Calculate oral and parenteral drug dosages.
- 1-4.5 Discuss legal aspects affecting medication administration.
- 1-4.6 Discuss the “six rights” of drug administration.
- 1-4.7 Describe the principles of intravenous and intraosseous needle placement and infusion.
- 1-4.8 Describe the principles of administering medications by the inhalation route.
- 1-4.9 Describe the equipment needed and general principles of administering oral and rectal medications.
- 1-4.10 Differentiate among the different parenteral routes of medication administration.
- 1-4.11 Discuss the principles for the preparation and administration of parenteral medications.
- 1-4.12 Differentiate among the different percutaneous routes of medication administration.
- 1-4.13 Describe principles of obtaining a blood sample.
- 1-4.14 Describe disposal of contaminated items and sharps.
- 1-4.15 Integrate pathophysiological principles of medication administration.
- 1-4.16 Use universal precautions and body substance isolation (BSI) procedures during medication administration.
- 1-4.17 Demonstrate intravenous and intraosseous needle placement and infusion.
- 1-4.18 Demonstrate aseptic technique during medication administration.
- 1-4.19 Demonstrate administration of medications by the inhalation route.
- 1-4.20 Demonstrate administration of medications by the oral route.
- 1-4.21 Demonstrate preparation and administration of parenteral medications.
- 1-4.22 Demonstrate preparation and techniques for obtaining a blood samples
- 1-4.23 Perfect disposal of contaminated items and sharps.

MODULE II AIRWAY MANAGEMENT

At the completion of this module, the EMT-Intermediate student will be able to establish and/or maintain a patent airway, oxygenate, and ventilate a patient.

MODULE II LESSON I AIRWAY MANAGEMENT AND VENTILATION

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 2-1.1 Review the primary objective of airway maintenance.
- 2-1.2 Review normal tidal volumes for the adult, child and infant.

- 2-1.3 Define atelectasis.
- 2-1.4 Define FiO₂.
- 2-1.5 Explain the relationship between pulmonary circulation and respiration.
- 2-1.6 List factors which cause decreased oxygen concentrations in the blood.
- 2-1.7 List the factors which increase and decrease carbon dioxide production in the body.
- 2-1.8 Describe the measurement of oxygen in the blood.
- 2-1.9 Describe the measurement of carbon dioxide in the blood.
- 2-1.10 Describe the principles of diffusion and osmosis.
- 2-1.11 List the concentration of gases which comprise atmospheric air.
- 2-1.12 List the factors which affect respiratory rate and depth.
- 2-1.13 Review the voluntary and involuntary regulation of respiration.
- 2-1.14 Review causes of upper airway obstruction.
- 2-1.15 Review normal respiratory rates for the adult, child and infant.
- 2-1.16 Describe causes of respiratory distress.
- 2-1.17 Define and differentiate between hypoxia and hypoxemia.
- 2-1.18 Define pulsus paradoxus.
- 2-1.19 Review the modified forms of respiration.
- 2-1.20 Review gag reflex.
- 2-1.21 Define, identify and describe a tracheostomy, stoma, and tracheostomy tube.
- 2-1.22 Explain the risk of infection to EMS providers associated with ventilation.
- 2-1.23 Review complications and technique for ventilating a patient through multiple mechanisms.
- 2-1.24 Review and define the Sellick (cricoid pressure) maneuver.
- 2-1.25 Compare the ventilation techniques used for an adult patient to those used for pediatric patients.
- 2-1.26 Review how to ventilate a patient with a stoma, including mouth-to-stoma and BVM-to-stoma ventilation.
- 2-1.27 Review special considerations of suctioning the upper airway.
- 2-1.28 Review the technique of tracheobronchial suctioning in the intubated patient.
- 2-1.29 Review gastric distention.
- 2-1.30 Review manual airway maneuvers.
- 2-1.31 Review the technique for inserting an oropharyngeal and nasopharyngeal airway.
- 2-1.32 Review endotracheal intubation, DLAD including the PTL, Combitube, or LMA.
- 2-1.33 Review the methods of assessment for confirming correct placement of an endotracheal tube, DLAD including the PTL, Combitube, or LMA.
- 2-1.34 Review methods for securing an endotracheal tube.
- 2-1.35 Review methods of endotracheal intubation in the pediatric patient.
- 2-1.36 Review the special considerations in airway management and ventilation for patients with facial injuries.
- 2-1.37 Review the special considerations in airway management and ventilation for the pediatric patient.
- 2-1.38 Perform body substance isolation (BSI) procedures during basic and advanced airway management and ventilation.
- 2-1.39 Perform pulse oximetry.

- 2-1.40 Perform oxygen delivery from a cylinder and regulator with an oxygen delivery device.
- 2-1.41 Deliver supplemental oxygen to a breathing patient using various devices
- 2-1.42 Perform medication administration with an in-line small-volume nebulizer.
- 2-1.43 Demonstrate ventilating a patient through multiple techniques:
- 2-1.44 Perform the Sellick maneuver (cricoid pressure).
- 2-1.45 Ventilate a pediatric patient using the one and two person techniques.
- 2-1.46 Intubate the trachea by direct orotracheal intubation.
- 2-1.47 Intubate a patient using an alternative airway device, including the DLAD, PTL, Combitube, or LMA.
- 2-1.48 Perform the technique of trachealbronchial suctioning in the intubated patient using sterile technique.
- 2-1.49 Perform assessment to confirm correct placement of the endotracheal tube and any alternative airway device.
- 2-1.50 Adequately secure an endotracheal tube and the alternative airway devices including the DLAD, PTL, Combitube, or LMA.
- 2-1.51 Perform endotracheal intubation in the pediatric patient.
- 2-1.52 Perform replacement of a tracheostomy tube through a stoma.

MODULE III PATIENT ASSESSMENTS

At the completion of this module, the EMT-Intermediate student will be able to use the appropriate techniques to obtain a medical history from a patient; explain the significance of physical exam findings commonly found in emergency situations; apply a process of decision making to use the assessment findings to help form a field impression; follow an accepted format for the dissemination of patient information in verbal form, either in person or over the radio; and effectively document the essential elements of patient assessment, care and transport.

MODULE III LESSON I PATIENT ASSESSMENT: MEDICAL HISTORY

Upon completion of this lesson the EMT-I will be able to:

- 3-1.1 Describe the factors that influence the EMT-Intermediate's ability to collect medical history.
- 3-1.2 Describe the techniques of history taking.
- 3-1.3 Discuss the importance of using open and closed ended questions.
- 3-1.4 Describe the use of facilitation, reflection, clarification, empathetic responses, confrontation and interpretation.
- 3-1.5 Differentiate between facilitation, reflection, clarification, sympathetic responses, confrontation, and interpretation.
- 3-1.6 Describe how to obtain a medical history.
- 3-1.7 List and describe strategies to overcome situations that represent special challenges in obtaining a medical history.

MODULE III LESSON II PATIENT ASSESSMENT: PHYSICAL EXAMINATION FINDINGS

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 3-2.1 Review and describe the terms inspection, palpation, percussion and auscultation.
- 3-2.2 Review the procedure for taking and significance of vital signs.
- 3-2.3 Review the evaluation of mental status.
- 3-2.4 Evaluate the importance of a general impression.
- 3-2.5 Review the importance of abnormal findings of the assessment of the skin.

- 3-2.6 Review normal and abnormal assessment findings of the neck and cervical spine.
- 3-2.7 Differentiate the characteristics of breath sounds.
- 3-2.8 Differentiate normal and abnormal assessment findings of the chest examination.
- 3-2.9 Differentiate normal and abnormal assessment findings of the head, eyes, ears, nose and throat.
- 3-2.10 Review the examination of the arterial pulse including rate and rhythm.
- 3-2.11 Review findings of the arterial pulse.
- 3-2.12 Distinguish normal and abnormal examination findings of jugular venous pressure and pulsations.
- 3-2.13 Differentiate the characteristics of normal and abnormal findings associated with the auscultation of the heart.
- 3-2.14 Review assessment findings of the abdomen.
- 3-2.15 Review normal and abnormal assessment findings of the extremities.
- 3-2.16 Review normal and abnormal assessment findings of the peripheral vascular system
- 3-2.17 Review normal and abnormal assessment findings of the nervous system.
- 3-2.18 Review the considerations of examination of an infant or child.
- 3-2.19 Describe the general guidelines of recording examination information.
- 3-2.20 Perform a detailed physical examination on a simulated patient.

MODULE III LESSON III PATIENT ASSESSMENT: CLINICAL DECISION MAKING

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 3-3.1 Differentiate between threatening patient presentations.
- 3-3.2 Define the component of the critical thinking process for EMT Intermediates.
- 3-3.3 Apply the fundamental elements of critical thinking.
- 3-3.4 Describe the effects of the “fight or flight.”
- 3-3.5 Develop strategies for effective thinking under pressure.
- 3-3.6 Summarize the “six R’s.”

MODULE III LESSON IV PATIENT ASSESSMENT: COMMUNICAIONS

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 3-4.1 Identify the importance of proper terminology.
- 3-4.2 Recognize the legal status of written communications.
- 3-4.3 State the importance of data collection.
- 3-4.4 Organize a list of patient assessment information.
- 3-4.5 Identify the components of the local dispatch communication system.
- 3-4.6 Demonstrate the ability to use the communication equipment used locally.

MODULE III LESSON V PATIENT ASSESSMENT: DOCUMENTATION

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 3-5.1 Record all pertinent administrative information.

- 3-5.2 Review the differences between subjective and objective elements.
- 3-5.3 Review the confidential nature of an EMS report.
- 3-5.4 Demonstrate the ability to give verbal and written communications.
- 3-5.5 Perform appropriate written documentation, given a simulated patient encounter.
- 3-5.6 Record pertinent information using a consistent narrative format.
- 3-5.7 Evaluate a finished document for errors and omissions.
- 3-5.8 Note and record “pertinent negative” clinical findings.
- 3-5.9 Use proper procedures as defined under local protocol.

MODULE IV TRAUMA

At the completion of this module, the EMT-Intermediate student will be able to apply the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient’s mechanism of injury. The EMT-Intermediate student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient with hemorrhage or shock, burn injury, thoracoabdominal injury, and/or head injury. At the completion of this lesson, the EMT-Intermediate student will be able to demonstrate the practical skills of managing trauma patients.

MODULE IV LESSON I TRAUMA: MECHANISMS OF INJURY/KINEMATICS

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 4-1.1 List and describe the components of a comprehensive trauma system.
- 4-1.2 Describe trauma centers.
- 4-1.3 Identify trauma-triage guidelines.
- 4-1.4 Describe the criteria and procedure for air medical transport.
- 4-1.5 Review energy and force as they relate to trauma.
- 4-1.6 Review laws of motion and energy and understand the role that increased speed has on injuries.
- 4-1.7 Review each type of impact and its effect on unrestrained victims.
- 4-1.8 Review the pathophysiology of the head, spine, thorax, and abdomen that results from the above forces.
- 4-1.9 Review organ collisions.
- 4-1.10 Review the effects that restraint systems.
- 4-1.11 Review specific injuries and their causes as related to interior and exterior vehicle damage.
- 4-1.12 Review the kinematics of penetrating injuries.
- 4-1.13 Review the motion and energy considerations of mechanisms other than motor vehicle crashes.
- 4-1.14 Review the role of kinematics as an additional tool for patient assessment.

MODULE IV LESSON II TRAUMA: HEMMORAGE AND SHOCK

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 4-2.1 Describe the epidemiology for shock and hemorrhage.
- 4-2.2 Review the treatment and management of hemorrhage and shock.

- 4-2.3 Review the management of external and internal hemorrhage.
- 4-2.4 Differentiate between hemorrhages.
- 4-2.5 Apply epidemiology.
- 4-2.6 Differentiate between compensated and decompensated shock.
- 4-2.7 Demonstrate assessment and management of the patient.

MODULE IV LESSON III TRAUMA: BURNS

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 4-3.1 Review the pathophysiologic complications.
- 4-3.2 Review and describe types of burn injuries..
- 4-3.3 Review and describe the depth classifications of burn injuries.
- 4-3.4 Review and describe methods for determining body surface area percentage of a burn injury.
- 4-3.5 Review and describe the severity of a bur..
- 4-3.6 Review criteria for determining the severity of a burn.
- 4-3.7 Review conditions associated with burn injuries..
- 4-3.8 Apply the knowledge of all types of burn injuries to form a field impression and implement a management plan.
- 4-3.9 Take body substance isolation procedures during assessment and management of patients with a burn injury.
- 4-3.10 Demonstrate appropriate assessment and management of a patient with a burn injury..

MODULE IV LESSON IV TRAUMA: THORACOABDOMINAL

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 4-4.1 Review the anatomy and physiology of the organs related to thoracic and abdominal injuries.
- 4-4.2 Predict thoracic and abdominal injuries.
- 4-4.3 Review types of thoracic and abdominal injuries.
- 4-4.4 Review pathophysiology of thoracic and abdominal injuries.
- 4-4.5 Review assessment findings associated with thoracic and abdominal injuries.
- 4-4.6 Review management of thoracic and abdominal injuries.
- 4-4.7 Review need for rapid intervention and transport of the patient.
- 4-4.8 Review the epidemiology and pathophysiology of specific chest wall injuries.
- 4-4.9 Review the assessment findings associated with chest wall injuries.
- 4-4.10 Review the need for rapid intervention and transport of the patient with chest wall injuries.
- 4-4.11 Review chest wall injuries.
- 4-4.12 Review injury to the lung.
- 4-4.13 Review abdominal injuries.
- 4-4.14 Review myocardial injuries.
- 4-4.15 Discuss traumatic asphyxia.
- 4-4.16 Formulate a field impression based on the assessment findings.

- 4-4.17 Develop a patient management plan.
- 4-4.18 Demonstrate a clinical assessment for a patient with suspected thoracic trauma.
- 4-4.19 Demonstrate various techniques for the management of thoracic injuries.
- 4-4.20 Formulate a field impression.
- 4-4.21 Develop a patient management plan.

MODULE IV LESSON V TRAUMA: HEAD INJURIES

At the completion of this lesson, the EMT-Intermediate will be able to:

- 4-5.1 Explain the pathophysiology of head/brain injuries.
- 4-5.2 Explain the concept of increasing ICP.
- 4-5.3 Describe and explain the general management of the head/brain injury patient.

MODULE IV LESSON VI TRAUMA: PRACTICAL APPLICATION

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 4-6.1 Demonstrate a clinical assessment for a patient with a suspected musculoskeletal injury.
- 4-6.2 Demonstrate the assessment and management of a soft tissue injury.
- 4-6.3 Demonstrate immobilization of spinal injury.
- 4-6.4 Demonstrate preferred methods for spine injured patient.
- 4-6.5 Demonstrate helmet removal techniques.
- 4-6.6 Demonstrate alternative methods for stabilization.
- 4-6.7 Demonstrate documentation of assessment.

MODULE V MEDICAL EMERGENCIES

At the end of this lesson, the EMT-Intermediate student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient with: respiratory, cardiovascular, diabetic, allergic, overdose, abdominal, environmental, behavioral and gynecological emergencies.

MODULE V LESSON I MEDICAL EMERGENCIES: RESPIRATORY AND PULMONARY DISEASE

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-1.1 Review abnormal assessment findings associated with pulmonary diseases and conditions.
- 5-1.2 Compare various airway and ventilation techniques used in the management of pulmonary diseases.
- 5-1.3 Review the pharmacological preparations for management of respiratory diseases and conditions.
- 5-1.4 Review the use of equipment used during the physical examination of patients with respiratory diseases and conditions.
- 5-1.5 Describe the pathophysiology, assessment findings, and management for various respiratory diseases and conditions.
- 5-1.8 Demonstrate and record pertinent assessment findings associated with pulmonary diseases and conditions.
- 5-1.6 Demonstrate proper use of airway and ventilation devices.
- 5-1.7 Conduct a simulated history and patient assessment.

MODULE V LESSON II MEDICAL EMERGENCIES: CARDIOVASCULAR/STRIP IDENTIFICATION

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5.2-1 Identify and describe the components of assessment as it relates to patient with cardiovascular compromise.
- 5.2-2 Describe how ECG waveforms are produced.
- 5.2-3 Correlate the electrophysiological and hemodynamic events occurring throughout the entire cardiac cycle with the various ECG wave forms.
- 5.2-4 Identify how heart rates may be determined from EKG rhythm recordings.
- 5.2-5 Define the cardiac cycle as it relates to electrophysiology.
- 5.2-6 Define the cardiac conduction system.
- 5.2-7 List the limitation of a rhythm strip.
- 5.2-8 List the components of a rhythm strip.
- 5.2-9 Explain the systematic approach to rhythm interpretation.
- 5.2-10 Describe a systematic approach to the analysis and interpretation of cardiac arrhythmias.
- 5.2-11 List the clinical indications for manual defibrillation.
- 5.2-12 Review the clinical indications for the use of the Automatic External Defibrillator.
- 5.2-13 Define angina pectoris and myocardial infarction (MI).
- 5.2-14 List other clinical conditions that may mimic signs and symptoms of angina pectoris and myocardial infarction.
- 5.2-15 List and describe the assessment parameters to be evaluated in a patient with chest pain.
- 5.2-16 Identify what is meant by OPQRST of chest pain assessment.
- 5.2-17 List and describe the initial assessment parameters to be evaluated in a patient with chest pain that may be myocardial in origin.
- 5.2-18 Identify the anticipated clinical presentation of a patient with chest pain that may be angina pectoris or myocardial infarction.
- 5.2-19 Describe the pharmacological agent available to the EMT-Intermediate for use in the management of the patient with chest pain that may be indicative of angina or myocardial infarction.
- 5.2-20 Define the terms "congestive heart failure" and "pulmonary edema."
- 5.2-21 Describe the early and late sign symptoms of pulmonary edema.
- 5.2-22 Explain the clinical significance of paroxysmal nocturnal dyspnea.
- 5.2-23 Define the term "hypertensive emergency."
- 5.2-24 Describe the clinical features of the patient with a hypertensive emergency.
- 5.2-25 Review the term "cardiac arrest."
- 5.2-26 Review the term "resuscitation."
- 5.2-27 Identify critical actions necessary in caring for the patient in cardiac arrest.
- 5.2-28 Demonstrate a working knowledge of the interpretation of Sinus Rhythm, Sinus Bradycardia, Sinus Tachycardia, Ventricular Tachycardia, Ventricular Fibrillation, Asystole and Artifact.
- 5.2-29 Given a model of a patient with signs and symptoms of a cardiac emergency, position the patient to afford comfort, relief and treatment including administration of pharmacological and/or electrical interventions appropriate for the patient's clinical condition.
- 5.2-30 Demonstrate the appropriate use of the Automatic External Defibrillator.
- 5.2-31 Demonstrate the appropriate use of manual defibrillation.

MODULE V LESSON III MEDICAL EMERGENCIES: DIABETIC EMERGENCIES

At the completion of this lesson the EMT-Intermediate student will be able to:

- 5.3-1 Describe the pathophysiology of diabetes mellitus.
- 5.3-2 Describe the effects of decreased levels of insulin on the body.
- 5.3-3 Correlate abnormal findings in assessment with clinical significance in the patient with a diabetic emergency.
- 5.3-4 Discuss the management of diabetic emergencies, to include blood glucose monitoring.
- 5.3-5 Describe the mechanism of ketone body formation and its relationship to ketoacidosis.
- 5.3-6 Describe the effects of decreased levels of insulin on the body.
- 5.3-7 Discuss the pathophysiology of hypoglycemia.
- 5.3-8 Recognize the signs and symptoms of the patient with hypoglycemia.
- 5.3-9 Describe the management of a hypoglycemic patient.
- 5.3-10 Integrate the pathophysiological principles and the assessment findings to formulate a field impression.
- 5.3-11 Discuss the pathophysiology of hyperglycemia.
- 5.3-12 Recognize the signs and symptoms of the patient with hyperglycemia.
- 5.3-13 Describe the management of the hyperglycemic patient.
- 5.3-14 Differentiate between diabetic emergencies based on assessment and history.
- 5.3-15 Correlate abnormal findings in the assessment with the clinical significance in the patient with diabetic emergencies.
- 5.3-16 Develop a patient management plan based on field impression in the patient with diabetic emergency.
- 5.3-17 Perform an appropriate assessment and management of a patient with signs and symptoms of a diabetic emergency.
- 5.3-18 Demonstrate the appropriate technique to perform blood glucose monitoring.

MODULE V LESSON IV ALLERGIC REACTIONS/ANAPHYLAXIS

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-4.1 Review allergic reaction.
- 5-4.2 Review anaphylaxis.
- 5-4.3 Review allergens.
- 5-4.4 Review the common methods of entry of substances into the body.
- 5-4.5 List common antigens most frequently associated with anaphylaxis.
- 5-4.6 Review physical manifestations in anaphylaxis.
- 5-4.7 Recognize the signs and symptoms related to anaphylaxis.
- 5-4.8 Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis.
- 5-4.9 Integrate the pathophysiological principles of the patient with anaphylaxis.
- 5-4.10 Correlate abnormal findings in assessment with the clinical significance in the patient with anaphylaxis.
- 5-4.11 Develop a treatment plan based on field impression in the patient with allergic reaction and anaphylaxis.
- 5-4.12 Perform an appropriate assessment and management of a patient with signs and symptoms of an allergic reaction or anaphylaxis.

MODULE V LESSON V TOXICOLOGY OVERDOSE

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-5.1 Identify appropriate personal protective equipment and scene safety awareness concerns in dealing with toxicologic emergencies.
- 5-5.2 Review the routes of entry of toxic substances into the body.
- 5-5.3 Identify the need for rapid intervention and transport of the patient with a toxic substance emergency.
- 5-5.4 Review the management of toxic substances.
- 5-5.5 Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by inhalation, ingestion, absorption and injection.
- 5-5.6 Utilize assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by inhalation, ingestion, absorption and injection.
- 5-5.7 Review poisoning by overdose.
- 5-5.8 Review the signs and symptoms related to the most common poisonings by overdose.
- 5-5.9 Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by overdose.
- 5-5.10 Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by overdose.
- 5-5.11 Utilize assessment findings to formulate a field impression and implement a treatment plan for overdose.
- 5-5.12 Perform an appropriate assessment and management of a patient with symptoms of a toxic exposure.

MODULE V LESSON VI NEUROLOGICAL EMERGENCIES

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-6.1 Discuss the general pathophysiology of non-traumatic neurologic emergencies.
- 5-6.2 Discuss the general assessment findings associated with non-traumatic neurologic emergencies.
- 5-6.3 Identify the need for rapid intervention and transport of the patient with non-traumatic neurologic emergencies.
- 5-6.4 Discuss the assessment findings and management for stroke and intracranial hemorrhage.
- 5-6.5 Discuss the assessment findings and management for transient ischemic attack.
- 5-6.6 Discuss the assessment findings and management for epilepsy/seizures.
- 5-6.7 Discuss the assessment findings and management for non-specific coma or altered level of consciousness/syncope/weakness/headache.
- 5-6.8 Develop a patient management plan based on field impression in the patient with neurological emergencies.
- 5-6.9 Perform an appropriate assessment and management of a patient with a non-traumatic neurological emergency.

MODULE V LESSON VII NON-TRAUMATIC ABDOMINAL DISORDERS

At the completion of the lesson, the EMT-Intermediate student will be able to:

- 5-7.1 Discuss the pathophysiology of non-traumatic abdominal emergencies.
- 5-7.2 Discuss the signs and symptoms of non-traumatic acute abdominal pain.
- 5-7.3 Discuss the management of the patient with non-traumatic acute abdominal pain.
- 5-7.4 Perform an appropriate assessment and management of the patient with signs and symptoms of a non-traumatic acute abdominal disorder.

MODULE V LESSON VIII ENVIRONMENTAL EMERGENCIES

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-8.1 Review “environmental emergency”.
- 5-8.2 Review environmental factors that may cause illness or exacerbate a pre-existing illness.
- 5-8.3 Review environmental factors that may complicate treatment or transport decisions.
- 5-8.4 Review the principal types of environmental illnesses.
- 5-8.5 Review normal, critically high and critically low body temperatures.
- 5-8.6 Describe several methods of temperature monitoring.
- 5-8.7 Describe the body’s compensatory process for overheating.
- 5-8.8 Describe the body’s compensatory process for excess heat loss.
- 5-8.9 List the common forms of heat and cold disorders.
- 5-8.10 List the common predisposing factors associated with heat and cold disorders.
- 5-8.11 Define heat illness.
- 5-8.12 Identify signs and symptoms of heat illness.
- 5-8.13 List the predisposing factors for heat illness.
- 5-8.14 List measures to prevent heat illness.
- 5-8.15 Relate symptomatic findings to the commonly used terms.
- 5-8.16 Discuss how one may differentiate between fever and heat stroke.
- 5-8.17 Discuss the role of fluid therapy in the treatment of heat disorders.
- 5-8.18 Differentiate among the various treatments and interventions in the management of heat disorders.
- 5-8.19 Formulate a field impression and implement a treatment plan for the patient who has dehydration, heat exhaustion, or heat stroke.
- 5-8.20 Review hypothermia.
- 5-8.21 Review predisposing factors for hypothermia.
- 5-8.22 Review measures to prevent hypothermia.
- 5-8.23 Identify differences between mild and severe hypothermia.
- 5-8.24 Describe differences between chronic and acute hypothermia.
- 5-8.25 Review signs and symptoms of hypothermia.
- 5-8.26 Correlate abnormal findings in assessment with their clinical significance in the patient with hypothermia.
- 5-8.27 Discuss the impact of severe hypothermia on standard BCLS and ACLS or equivalent algorithms and transport considerations.
- 5-8.28 Formulate a field impression and implement a treatment plan for the patient who has either mild or severe hypothermia.
- 5-8.29 Review near drowning.
- 5-8.30 Review the signs and symptoms of near drowning.
- 5-8.31 Discuss the complications and protective role of hypothermia in the context of near drowning.
- 5-8.32 Correlate the abnormal findings in assessment with the clinical significance in the patient with near drowning.
- 5-8.33 Differentiate among the various treatments and interventions in the management of near drowning.
- 5-8.34 Formulate a field impression and implement a treatment plan for the near-drowning patient.
- 5-8.35 Integrate pathophysiological principles of the patient affected by an environmental emergency.

- 5-8.36 Differentiate between environmental emergencies based on assessment findings.
- 5-8.37 Correlate abnormal findings in the assessment with the clinical significance in the patient affected by an environmental emergency.
- 5-8.38 Develop a patient management plan based on the field impression of the patient affected by an environmental emergency.
- 5-8.39 Perform an appropriate assessment and management of the patient with signs and symptoms of an environmentally-induced emergency.

MODULE V LESSON IX BEHAVIORAL EMERGENCIES

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-9.1 Review the pathophysiology of behavioral emergencies.
- 5-9.2 Review appropriate measures to ensure the safety of the patient, EMT-Intermediate and others.
- 5-9.3 Review techniques for a physical assessment in a patient with behavioral problems.
- 5-9.4 Review therapeutic interviewing techniques for gathering information from a patient with a behavioral emergency.
- 5-9.5 List factors that may indicate a patient is at increased risk for suicide.
- 5-9.6 Describe circumstances in which relatives, bystanders, and others should be removed from the scene.
- 5-9.7 Describe medical/legal considerations for managing a patient with a behavioral emergency.
- 5-9.8 Review situations in which the EMT-Intermediate is expected to transport a patient against his will.
- 5-9.9 Formulate a field impression based on the assessment findings for patients with behavioral emergencies.
- 5-9.10 Develop a patient management plan based on the field impression for patients with behavioral emergencies.
- 5-9.11 Demonstrate safe techniques for managing and restraining a violent patient.

MODULE V LESSON X GYNECOLOGICAL EMERGENCIES

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 5-10.1 Review the anatomic structures and physiology of the female reproductive system.
- 5-10.2 Describe how to assess a patient with a gynecological complaint.
- 5-10.3 Explain how to recognize a gynecological emergency.
- 5-10.4 Describe the general care for any patient experiencing a gynecological emergency.
- 5-10.5 Describe the pathophysiology, assessment and management of specific gynecological emergencies.
- 5-10.6 Describe the general findings and management of the sexually assaulted patient.
- 5-10.7 Demonstrate how to assess a patient with a gynecological complaint.
- 5-10.8 Demonstrate how to provide care for a patient with vaginal bleeding and/or sexual assault.

MODULE VI SPECIAL CONSIDERATIONS

At the completion of this lesson, the EMT-Intermediate student will be able to utilize the assessment findings to formulate and implement a treatment plan for a normal or abnormal labor, including trauma in pregnancy and formulate a field impression and implement the treatment plan for the resuscitation of a neonatal patient.

MODULE VI LESSON I PREGNANCY

At the completion of this lesson, the EMT-Intermediate student will be able to:

- 6-1.1 Review the normal events of pregnancy.
- 6-1.2 Review how to assess an obstetrical patient.
- 6-1.3 Review the stage of Labor and the EMT-Intermediate's role in each stage.
- 6-1.4 Review between normal and abnormal delivery.
- 6-1.5 Review and describe complications associated with pregnancy and delivery.
- 6-1.6 Review predelivery emergencies.
- 6-1.7 Review indications of an imminent delivery.
- 6-1.8 Differentiate the management of a patient with predelivery emergencies from a normal delivery.
- 6-1.9 Review the steps in the predelivery preparation of the mother.
- 6-1.10 Review the steps to assist in the delivery of a newborn.
- 6-1.11 Review how to care for the newborn.
- 6-1.12 Review how and when to cut the umbilical cord.
- 6-1.13 Review the management of the mother post-delivery.
- 6-1.14 Review the procedures for handling abnormal deliveries.
- 6-1.15 Describe the procedures for handling complications of pregnancy.
- 6-1.16 Describe the procedures for handling maternal complications of labor.
- 6-1.17 Describe special considerations when meconium is present in amniotic fluid or during delivery.
- 6-1.18 Describe special considerations of a premature baby.
- 6-1.19 Describe the procedure for handling the pregnant patient who is a victim of trauma.
- 6-1.20 Demonstrate how to assess an obstetric patient.
- 6-1.21 Demonstrate how to prepare the obstetric patient for delivery.
- 6-1.22 Demonstrate how to assist in the normal cephalic delivery of the fetus.
- 6-1.23 Demonstrate how to provide post-delivery care of the mother.
- 6-1.24 Demonstrate how to assist with an abnormal delivery.
- 6-1.25 Demonstrate how to care for the mother with delivery complications.
- 6-1.26 Demonstrate the appropriate treatment and transport position for a pregnant trauma patient.

MODULE VI LESSON II NEONATAL

At the completion of this lesson, the EMT-Intermediate will be able to:

- 6-2.1 Define the term newborn.
- 6-2.2 Define the term neonate.
- 6-2.3 Identify the primary signs utilized for evaluating a newborn during resuscitation.
- 6-2.4 Formulate an appropriate treatment plan for providing initial care to a newborn.
- 6-2.5 Identify the appropriate use of the APGAR score in caring for a newborn.
- 6-2.6 Calculate the APGAR score given various newborn situations.
- 6-2.7 Determine when ventilatory assistance is appropriate for the newborn.
- 6-2.8 Prepare appropriate ventilation equipment and adjuncts for a newborn.

- 6-2.9 Determine when chest compressions are appropriate for a newborn.
- 6-2.10 Discuss appropriate chest compression techniques for a newborn.
- 6-2.11 Reassess a patient following chest compressions and ventilations.
- 6-2.12 Determine when blow-by-oxygen delivery is appropriate for a newborn.
- 6-2.13 Discuss appropriate blow-by-oxygen delivery devices for a newborn.
- 6-2.14 Assess patient improvement due to assisted ventilations.
- 6-2.15 Discuss the initial steps in resuscitation of a newborn.
- 6-2.16 Assess patient improvement due to blow-by-oxygen delivery.
- 6-2.17 Discuss appropriate transport guidelines for a newborn.
- 6-2.18 Discuss the pathophysiology of meconium aspiration in the neonate.
- 6-2.19 Discuss the assessment findings associated with meconium aspiration in the neonate.
- 6-2.20 Discuss the management/treatment plan for meconium aspiration in the neonate.
- 6-2.21 Discuss the pathophysiology of bradycardia in the neonate.
- 6-2.22 Discuss the assessment findings associated with bradycardia in the neonate.
- 6-2.23 Discuss the management/treatment plan for bradycardia in the neonate.
- 6-2.24 Discuss the pathophysiology of respiratory distress/cyanosis in the neonate.
- 6-2.25 Discuss the assessment findings associated with respiratory distress/cyanosis in the neonate.
- 6-2.26 Discuss the management/treatment plan for respiratory distress/cyanosis in the neonate.
- 6-2.27 Discuss the pathophysiology of hypothermia in the neonate.
- 6-2.28 Discuss the assessment findings associated with hypothermia in the neonate.
- 6-2.29 Discuss the management/treatment plan for hypothermia in the neonate.
- 6-2.30 Discuss the assessment findings associated with cardiac arrest in the neonate.
- 6-2.31 Discuss the management/treatment plan for cardiac arrest in the neonate.
- 6-2.32 Demonstrate preparation of a newborn resuscitation area.
- 6-2.33 Demonstrate appropriate assessment techniques for examining a newborn.
- 6-2.34 Demonstrate appropriate assisted ventilations for a newborn.
- 6-2.35 Demonstrate appropriate chest compression and ventilation techniques for a newborn, following current BCLS guidelines.
- 6-2.36 Demonstrate the initial steps in resuscitation of a newborn.
- 6-2.37 Demonstrate blow-by-oxygen delivery for a newborn.

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File: Final CTAG EMT-I October 17, 2008.doc