



Broward Community College

Course Outline

LAST REVIEW: 2009-2010
(i.e. 2003-2004)

NEXT REVIEW: 2014-2015
(i.e. 2008-2009)

STATUS:
(A, I, D)

COURSE TITLE: Paramedic Science II – Cardio-Respiratory

COMMON COURSE NUMBER: EMS 2633

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS:
(Voc. Course ONLY)

Lecture: **48**

Lab:

Clinic:

Other:

PREREQUISITE(S): EMS 2010, EMS 2631, EMS 2631L, EMS 2650

COREQUISITE(S): EMS 2632, EMS 2632L, EMS 2641, EMS 2651

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 characters, maximum):*

CATALOG COURSE DESCRIPTION: Topics deal with Airway Management and Ventilation. Selected units from Medical Emergencies are Pulmonary conditions, and Cardiology to include an introduction to 12 Lead Interpretation and the prehospital management of acute myocardial infarction. Material covers 1998 U.S. Department of Transportation, (DOT), National Paramedic curriculum objectives for Module 2, and Module 5, Units 1,2.

UNIT TITLES

1. Airway Management and Ventilation
2. Pulmonary Conditions
3. Cardiology
4. Introduction 12 Lead Interpretation

LAST REVIEW: **Academic Year 2009-2010**

NEXT REVIEW **Academic Year 2014-2015**

UNITS

UNIT TERMINAL OBJECTIVE

2-1 At the completion of this unit, the paramedic student will be able to establish and/ or maintain a patent airway, oxygenate, and ventilate a patient.

COGNITIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 2-1.1 Explain the primary objective of airway maintenance. (C-1)
- 2-1.2 Identify commonly neglected prehospital skills related to airway. (C-1)
- 2-1.3 Identify the anatomy of the upper and lower airway. (C-1)
- 2-1.4 Describe the functions of the upper and lower airway. (C-1)
- 2-1.5 Explain the differences between adult and pediatric airway anatomy. (C-1)
- 2-1.6 Define gag reflex. (C-1)
- 2-1.7 Explain the relationship between pulmonary circulation and respiration. (C-3)
- 2-1.8 List the concentration of gases that comprise atmospheric air. (C-1)
- 2-1.9 Describe the measurement of oxygen in the blood. (C-1)
- 2-1.10 Describe the measurement of carbon dioxide in the blood. (C-1)
- 2-1.11 Describe peak expiratory flow. (C-1)
- 2-1.12 List factors that cause decreased oxygen concentrations in the blood. (C-1)
- 2-1.13 List the factors that increase and decrease carbon dioxide production in the body. (C-1)
- 2-1.14 Define atelectasis. (C-1)
- 2-1.15 Define FiO_2 . (C-1)
- 2-1.16 Define and differentiate between hypoxia and hypoxemia. (C-1)
- 2-1.17 Describe the voluntary and involuntary regulation of respiration. (C-1)
- 2-1.18 Describe the modified forms of respiration. (C-1)
- 2-1.19 Define normal respiratory rates and tidal volumes for the adult, child, and infant. (C-1)
- 2-1.20 List the factors that affect respiratory rate and depth. (C-1)
- 2-1.21 Explain the risk of infection to EMS providers associated with ventilation. (C-3)
- 2-1.22 Define pulsus paradoxus. (C-1)
- 2-1.23 Define and explain the implications of partial airway obstruction with good and poor air exchange. (C-1)
- 2-1.24 Define complete airway obstruction. (C-1)
- 2-1.25 Describe causes of upper airway obstruction. (C-1)
- 2-1.26 Describe causes of respiratory distress. (C-1)
- 2-1.27 Describe manual airway maneuvers. (C-1)
- 2-1.28 Describe the Sellick (cricoid pressure) maneuver. (C-1)
- 2-1.29 Describe complete airway obstruction maneuvers. (C-1)
- 2-1.30 Explain the purpose for suctioning the upper airway. (C-1)
- 2-1.31 Identify types of suction equipment. (C-1)
- 2-1.32 Describe the indications for suctioning the upper airway. (C-3)
- 2-1.33 Identify types of suction catheters, including hard or rigid catheters and soft catheters. (C-1)
- 2-1.34 Identify techniques of suctioning the upper airway. (C-1)
- 2-1.35 Identify special considerations of suctioning the upper airway. (C-1)
- 2-1.36 Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique of tracheobronchial suctioning in the intubated patient. (C-3)

- 2-1.37 Describe the use of an oral and nasal airway. (C-1)
- 2-1.38 Identify special considerations of tracheobronchial suctioning in the intubated patient. (C-1)
- 2-1.39 Define gastric distention. (C-1)
- 2-1.40 Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for inserting a nasogastric tube and orogastric tube. (C-1)
- 2-1.41 Identify special considerations of gastric decompression. (C-1)
- 2-1.42 Describe the indications, contraindications, advantages, disadvantages, complications, and technique for inserting an oropharyngeal and nasopharyngeal airway (C-1)
- 2-1.43 Describe the indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient by: (C-1)
 - Mouth-to-mouth
 - Mouth-to-nose
 - Mouth-to-mask
 - One person bag-valve-mask
 - Two person bag-valve-mask
 - Three person bag-valve-mask
 - Flow-restricted, oxygen-powered ventilation device
- 2-1.44 Explain the advantage of the two person method when ventilating with the bag-valve-mask. (C-1)
- 2-1.45 Compare the ventilation techniques used for an adult patient to those used for pediatric patients. (C-3)
- 2-1.46 Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV). (C-1)
- 2-1.47 Explain safety considerations of oxygen storage and delivery. (C-1)
- 2-1.48 Identify types of oxygen cylinders and pressure regulators (including a high-pressure regulator and a therapy regulator). (C-1)
- 2-1.49 List the steps for delivering oxygen from a cylinder and regulator. (C-1)
- 2-1.50 Describe the use, advantages and disadvantages of an oxygen humidifier. (C-1)
- 2-1.51 Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices. (C-3)
- 2-1.52 Define, identify and describe a tracheostomy, stoma, and tracheostomy tube. (C-1)
- 2-1.53 Define, identify, and describe a laryngectomy. (C-1)
- 2-1.54 Define how to ventilate with a patient with a stoma, including mouth-to-stoma and bag-valve-mask-to-stoma ventilation. (C-1)
- 2-1.55 Describe the special considerations in airway management and ventilation for patients with facial injuries. (C-1)
- 2-1.56 Describe the special considerations in airway management and ventilation for the pediatric patient. (C-1)
- 2-1.57 Differentiate endotracheal intubation from other methods of advanced airway management. (C-3)
- 2-1.58 Describe the indications, contraindications, advantages, disadvantages and complications of endotracheal intubation. (C-1)
- 2-1.59 Describe laryngoscopy for the removal of a foreign body airway obstruction. (C-1)
- 2-1.60 Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for direct laryngoscopy. (C-1)
- 2-1.61 Describe visual landmarks for direct laryngoscopy. (C-1)
- 2-1.62 Describe use of cricoid pressure during intubation. (C-1)

- 2-1.63 Describe indications, contraindications, advantages, disadvantages, complications, equipment and technique for digital endotracheal intubation. (C-1)
- 2-1.64 Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for using a dual lumen airway. (C-3)
- 2-1.65 Describe the indications, contraindications, advantages, disadvantages, complications and equipment for rapid sequence intubation with neuromuscular blockade. (C-1)
- 2-1.66 Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation. (C-1)
- 2-1.67 Describe the indications, contraindications, advantages, disadvantages, complications and equipment for sedation during intubation. (C-1)
- 2-1.68 Identify sedative agents used in airway management. (C-1)
- 2-1.69 Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for nasotracheal intubation. (C-1)
- 2-1.70 Describe the indications, contraindications, advantages, disadvantages and complications for performing an open cricothyrotomy. (C-3)

- 2-1.71 Describe the equipment and technique for performing an open cricothyrotomy. (C-1)
- 2-1.72 Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for transtlaryngeal catheter ventilation (needle cricothyrotomy). (C-3)
- 2-1.73 Describe methods of assessment for confirming correct placement of an endotracheal tube. (C-1)
- 2-1.74 Describe methods for securing an endotracheal tube. (C-1)
- 2-1.75 Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for extubation. (C-1)
- 2-1.76 Describe methods of endotracheal intubation in the pediatric patient. (C-1)

AFFECTIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 2-1.77 Defend the need to oxygenate and ventilate a patient. (A-1)
- 2-1.78 Defend the necessity of establishing and/ or maintaining patency of a patient's airway. (A-1)
- 2-1.79 Comply with standard precautions to defend against infectious and communicable diseases. (A-1)

UNIT TERMINAL OBJECTIVE

- 5-1 At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with respiratory problems.

COGNITIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 5-1.1 Discuss the epidemiology of pulmonary diseases and conditions. (C-1)
- 5-1.2 Identify and describe the function of the structures located in the upper and lower airway. (C-1)
- 5-1.3 Discuss the physiology of ventilation and respiration. (C-1)
- 5-1.4 Identify common pathological events that affect the pulmonary system. (C-1)
- 5-1.5 Discuss abnormal assessment findings associated with pulmonary diseases and conditions. (C-1)
- 5-1.6 Compare various airway and ventilation techniques used in the management of pulmonary diseases. (C-3)
- 5-1.7 Review the pharmacological preparations that paramedics use for management of respiratory diseases and conditions. (C-1)
- 5-1.8 Review the pharmacological preparations used in managing patients with respiratory diseases that may be prescribed by physicians. (C-1)
- 5-1.9 Review the use of equipment used during the physical examination of patients with complaints associated with respiratory diseases and conditions. (C-1)

5-1.10 Identify the epidemiology, anatomy, physiology, pathophysiology, assessment findings, and management for the following respiratory diseases and conditions: (C-1)

- a. Adult respiratory distress syndrome
- b. Bronchial asthma
- c. Chronic bronchitis
 1. Emphysema
 2. Pneumonia
 3. Pulmonary edema
 4. Pulmonary thromboembolism
 5. Neoplasms of the lung
 6. Upper respiratory infections
 7. Spontaneous pneumothorax
 8. Hyperventilation syndrome

AFFECTIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

5-1.11 Recognize and value the assessment and treatment of patients with respiratory diseases. (A-2)

5-1.12 Indicate appreciation for the critical nature of accurate field impressions of patients with respiratory diseases and conditions. (A-2)

Module 5 – Medical Cardiology

UNIT TERMINAL OBJECTIVE

5-2 At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease.

COGNITIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

5-2.1 Describe the incidence, morbidity and mortality of cardiovascular disease. (C-1)

5-2.2 Discuss prevention strategies that may reduce the morbidity and mortality of cardiovascular disease. (C-1)

5-2.3 Identify the risk factors most predisposing to coronary artery disease. (C-1)

5-2.4 Describe the anatomy of the heart, including the position in the thoracic cavity, layers of the heart, chambers of the heart, and location and function of cardiac valves. (C-1)

5-2.5 Identify the major structures of the vascular system. (C-1)

5-2.6 Identify the factors affecting venous return. (C-1)

5-2.7 Identify and define the components of cardiac output. (C-1)

5-2.8 Identify phases of the cardiac cycle. (C-1)

5-2.9 Identify the arterial blood supply to any given area of the myocardium. (C-1)

5-2.10 Compare and contrast the coronary arterial distribution to the major portions of the cardiac conduction system. (C-3)

- 5-2.11 Identify the structure and course of all divisions and subdivisions of the cardiac conduction system. (C-1)
- 5-2.12 Identify and describe how the heart's pacemaking control, rate, and rhythm are determined. (C-2)
- 5-2.13 Explain the physiological basis of conduction delay in the AV node. (C-3)
- 5-2.14 Define the functional properties of cardiac muscle. (C-1)
- 5-2.15 Define the events comprising electrical potential. (C-1)
- 5-2.16 List the most important ions involved in myocardial action potential and their primary function in this process. (C-2)
- 5-2.17 Describe the events involved in the steps from excitation to contraction of cardiac muscle fibers. (C-1)
- 5-2.18 Describe the clinical significance of Starling's law. (C-3)
- 5-2.19 Identify the structures of the autonomic nervous system (ANS). (C-1)
- 5-2.20 Identify the effect of the ANS on heart rate, rhythm and contractility. (C-1)
- 5-2.21 Define and give examples of positive and negative inotropism, chronotropism and dromotropism. (C-2)
- 5-2.22 Discuss the pathophysiology of cardiac disease and injury. (C-1)
- 5-2.23 Identify and describe the details of inspection, auscultation and palpation specific to the cardiovascular system. (C-1)
- 5-2.24 Define pulse deficit, pulsus paradoxus and pulsus alternans. (C-1)
- 5-2.25 Identify the normal characteristics of the point of maximal impulse (PMI). (C-1)
- 5-2.26 Identify and define the heart sounds. (C-1)
- 5-2.27 Relate heart sounds to hemodynamic events in the cardiac cycle. (C-2)
- 5-2.28 Describe the differences between normal and abnormal heart sounds. (C-2)
- 5-2.29 Identify and describe the components of the focused history as it relates to the patient with cardiovascular compromise. (C-1)
- 5-2.30 Explain the purpose of ECG monitoring. (C-1)
- 5-2.31 Describe how ECG wave forms are produced. (C-2)
- 5-2.32 Correlate the electrophysiological and hemodynamic events occurring throughout the entire cardiac cycle with the various ECG wave forms, segments and intervals. (C-2)
- 5-2.33 Identify how heart rates, durations, and amplitudes may be determined from ECG recordings. (C-3)
- 5-2.34 Relate the cardiac surfaces or areas represented by the ECG leads. (C-2)
- 5-2.35 Given an ECG, identify the arrhythmia. (C-3)
- 5-2.36 Identify the limitations to the ECG. (C-1)
- 5-2.37 Differentiate among the primary mechanisms responsible for producing cardiac arrhythmias. (C-1)
- 5-2.38 Describe a systematic approach to the analysis and interpretation of cardiac arrhythmias. (C-2)
- 5-2.39 Describe the arrhythmias originating in the sinus node, the AV junction, the atria, and the ventricles. (C-3)
- 5-2.40 Describe the arrhythmias originating or sustained in the AV junction. (C-3)
- 5-2.41 Describe the abnormalities originating within the bundle branch system. (C-3)
- 5-2.42 Describe the process of differentiating wide QRS complex tachycardias. (C-3)
- 5-2.43 Recognize the pitfalls in the differentiation of wide QRS complex tachycardias. (C-1)

- 5-2.44 Describe the conditions of pulseless electrical activity. (C-3)
- 5-2.45 Describe the phenomena of reentry, aberration and accessory pathways. (C-1)
- 5-2.46 Identify the ECG changes characteristically produced by electrolyte imbalances and specify the clinical implications. (C-2)
- 5-2.47 Identify patient situations where ECG rhythm analysis is indicated. (C-1)
- 5-2.48 Recognize the changes on the ECG that may reflect evidence of myocardial ischemia and injury. (C-1)
- 5-2.49 Recognize the limitations of the ECG in reflecting evidence of myocardial ischemia and injury. (C-1)
- 5-2.50 Correlate abnormal ECG findings with clinical interpretation. (C-2)
- 5-2.51 Identify the major therapeutic objectives in the treatment of the patient with any arrhythmia. (C-1)
- 5-2.52 Identify the major mechanical, pharmacological and electrical therapeutic interventions. (C-3)
- 5-2.53 Based on field impressions, identify the need for rapid intervention for the patient in cardiovascular compromise. (C-3)
- 5-2.54 Describe the incidence, morbidity and mortality associated with myocardial conduction defects. (C-1)
- 5-2.55 Identify the clinical indications for transcutaneous and permanent artificial cardiac pacing. (C-1)
- 5-2.56 Describe the components and the functions of a transcutaneous pacing system. (C-1)
- 5-2.57 Explain what each setting and indicator on a transcutaneous pacing system represents and how the settings may be adjusted. (C-2)
- 5-2.58 Describe the techniques of applying a transcutaneous pacing system. (C-1)
- 5-2.59 Describe the characteristics of an implanted pacemaking system. (C-1)
- 5-2.60 Describe artifacts that may cause confusion when evaluating the ECG of a patient with a pacemaker. (C-2)
- 5-2.61 List the possible complications of pacing. (C-3)
- 5-2.62 List the causes and implications of pacemaker failure. (C-2)
- 5-2.63 Identify additional hazards that interfere with artificial pacemaker function. (C-1)
- 5-2.64 Recognize the complications of artificial pacemakers as evidenced on ECG. (C-2)
- 5-2.65 Describe the epidemiology, morbidity and mortality, and pathophysiology of angina pectoris. (C-1)
- 5-2.66 List and describe the assessment parameters to be evaluated in a patient with angina pectoris. (C-1)
- 5-2.67 Identify what is meant by the OPQRST of chest pain assessment. (C-3)
- 5-2.68 List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris. (C-1)
- 5-2.69 Identify the ECG findings in patients with angina pectoris. (C-3)
- 5-2.70 Identify the paramedic responsibilities associated with management of the patient with angina pectoris. (C-2)
- 5-2.71 Based on the pathophysiology and clinical evaluation of the patient with chest pain, list the anticipated clinical problems according to their life-threatening potential. (C-3)
- 5-2.72 Describe the epidemiology, morbidity and mortality of myocardial infarction. (C-1)

- 5-2.73 List the mechanisms by which an MI may be produced by traumatic and non-traumatic events. (C-2)
- 5-2.74 Identify the primary hemodynamic changes produced in myocardial infarction. (C-1)
- 5-2.75 List and describe the assessment parameters to be evaluated in a patient with a suspected myocardial infarction. (C-1)
- 5-2.76 Identify the anticipated clinical presentation of a patient with a suspected acute myocardial infarction. (C-3)
- 5-2.77 Differentiate the characteristics of the pain/ discomfort occurring in angina pectoris and acute myocardial infarction. (C-2)
- 5-2.78 Identify the ECG changes characteristically seen during evolution of an acute myocardial infarction. (C-2)
- 5-2.79 Identify the most common complications of an acute myocardial infarction. (C-3)
- 5-2.80 List the characteristics of a patient eligible for thrombolytic therapy. (C-2)
- 5-2.81 Describe the "window of opportunity" as it pertains to reperfusion of a myocardial injury or infarction. (C-3)
- 5-2.82 Based on the pathophysiology and clinical evaluation of the patient with a suspected acute myocardial infarction, list the anticipated clinical problems according to their life-threatening potential. (C-3)
- 5-2.83 Specify the measures that may be taken to prevent or minimize complications in the patient suspected of myocardial infarction. (C-3)
- 5-2.84 Describe the most commonly used cardiac drugs in terms of therapeutic effect and dosages, routes of administration, side effects and toxic effects. (C-3)
- 5-2.85 Describe the epidemiology, morbidity and mortality of heart failure. (C-1)
- 5-2.86 Define the principle causes and terminology associated with heart failure. (C-1)
- 5-2.87 Identify the factors that may precipitate or aggravate heart failure. (C-3)
- 5-2.88 Describe the physiological effects of heart failure. (C-2)
- 5-2.89 Define the term "acute pulmonary edema" and describe its relationship to left ventricular failure. (C-3)
- 5-2.90 Define preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure. (C-3)
- 5-2.91 Differentiate between early and late signs and symptoms of left ventricular failure and those of right ventricular failure. (C-3)
- 5-2.92 Explain the clinical significance of paroxysmal nocturnal dyspnea. (C-1)
- 5-2.93 Explain the clinical significance of edema of the extremities and sacrum. (C-1)
- 5-2.94 List the interventions prescribed for the patient in acute congestive heart failure. (C-2)
- 5-2.95 Describe the most commonly used pharmacological agents in the management of congestive heart failure in terms of therapeutic effect, dosages, routes of administration, side effects and toxic effects. (C-1)
- 5-2.96 Define the term "cardiac tamponade". (C-1)
- 5-2.97 List the mechanisms by which cardiac tamponade may be produced by traumatic and non-traumatic events. (C-2)
- 5-2.98 Identify the limiting factor of pericardial anatomy that determines intrapericardiac pressure. (C-1)
- 5-2.99 Identify the clinical criteria specific to cardiac tamponade. (C-2)

- 5-2.100 Describe how to determine if pulsus paradoxus, pulsus alternans or electrical alternans is present. (C-2)
- 5-2.101 Identify the paramedic responsibilities associated with management of a patient with cardiac tamponade. (C-2)
- 5-2.102 Describe the incidence, morbidity and mortality of hypertensive emergencies. (C-1)
- 5-2.103 Define the term "hypertensive emergency". (C-1)
- 5-2.104 Identify the characteristics of the patient population at risk for developing a hypertensive emergency. (C-1)
- 5-2.105 Explain the essential pathophysiological defect of hypertension in terms of Starling's law of the heart. (C-3)
- 5-2.106 Identify the progressive vascular changes associate with sustained hypertension. (C-1)
- 5-2.107 Describe the clinical features of the patient in a hypertensive emergency. (C-3)
- 5-2.108 Rank the clinical problems of patients in hypertensive emergencies according to their sense of urgency. (C-3)
- 5-2.109 From the priority of clinical problems identified, state the management responsibilities for the patient with a hypertensive emergency. (C-2)
- 5-2.110 Identify the drugs of choice for hypertensive emergencies, rationale for use, clinical precautions and disadvantages of selected antihypertensive agents. (C-3)
- 5-2.111 Correlate abnormal findings with clinical interpretation of the patient with a hypertensive emergency. (C-3)
- 5-2.112 Define the term "cardiogenic shock". (C-1)
- 5-2.113 Describe the major systemic effects of reduced tissue perfusion caused by cardiogenic shock. (C-3)
- 5-2.114 Explain the primary mechanisms by which the heart may compensate for a diminished cardiac output and describe their efficiency in cardiogenic shock. (C-3)
- 5-2.115 Differentiate progressive stages of cardiogenic shock. (C-3)
- 5-2.116 Identify the clinical criteria for cardiogenic shock. (C-1)
- 5-2.117 Describe the characteristics of patients most likely to develop cardiogenic shock. (C-3)
- 5-2.118 Describe the most commonly used pharmacological agents in the management of cardiogenic shock in terms of therapeutic effects, dosages, routes of administration, side effects and toxic effects. (C-2)
- 5-2.119 Correlate abnormal findings with clinical assessment of the patient in cardiogenic shock. (C-3)
- 5-2.120 Identify the paramedic responsibilities associated with management of a patient in cardiogenic shock. (C-2)
- 5-2.121 Define the term "cardiac arrest". (C-1)
- 5-2.122 Identify the characteristics of patient population at risk for developing cardiac arrest from cardiac causes. (C-1)
- 5-2.123 Identify non-cardiac causes of cardiac arrest. (C-1)
- 5-2.124 Describe the arrhythmias seen in cardiac arrest. (C-3)
- 5-2.125 Identify the critical actions necessary in caring for the patient with cardiac arrest. (C-3)

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- 5-2.126 Explain how to confirm asystole using the 3-lead ECG. (C-1)
- 5-2.127 Define the terms defibrillation and synchronized cardioversion. (C-1)
- 5-2.128 Specify the methods of supporting the patient with a suspected ineffective implanted defibrillation device. (C-2)
- 5-2.129 Describe the most commonly used pharmacological agents in the managements of cardiac arrest in terms of therapeutic effects. (C-3)
- 5-2.130 Identify resuscitation. (C-1)
- 5-2.131 Identify circumstances and situations where resuscitation efforts would not be initiated. (C-1)
- 5-2.132 Identify and list the inclusion and exclusion criteria for termination of resuscitation efforts. (C-1)
- 5-2.133 Identify communication and documentation protocols with medical direction and law enforcement used for termination of resuscitation efforts. (C-1)
- 5-2.134 Describe the incidence, morbidity and mortality of vascular disorders. (C-1)
- 5-2.135 Describe the pathophysiology of vascular disorders. (C-1)
- 5-2.136 List the traumatic and non-traumatic causes of vascular disorders. (C-1)
- 5-2.137 Define the terms "aneurysm", "claudication" and "phlebitis". (C-1)
- 5-2.138 Identify the peripheral arteries most commonly affected by occlusive disease. (C-1)
- 5-2.139 Identify the major factors involved in the pathophysiology of aortic aneurysm. (C-1)
- 5-2.140 Recognize the usual order of signs and symptoms that develop following peripheral artery occlusion. (C-3)
- 5-2.141 Identify the clinical significance of claudication and presence of arterial bruits in a patient with peripheral vascular disorders. (C-3)
- 5-2.142 Describe the clinical significance of unequal arterial blood pressure readings in the arms. (C-3)
- 5-2.143 Recognize and describe the signs and symptoms of dissecting thoracic or abdominal aneurysm. (C-3)
- 5-2.144 Describe the significant elements of the patient history in a patient with vascular disease. (C-2)
- 5-2.145 Identify the hemodynamic effects of vascular disorders. (C-1)
- 5-2.146 Identify the complications of vascular disorders. (C-1)
- 5-2.147 Identify the Paramedic's responsibilities associated with management of patients with vascular disorders. (C-2)
- 5-2.148 Develop, execute and evaluate a treatment plan based on the field impression for the patient with vascular disorders. (C-3)
- 5-2.149 Differentiate between signs and symptoms of cardiac tamponade, hypertensive emergencies, cardiogenic shock, and cardiac arrest. (C-3)
- 5-2.150 Based on the pathophysiology and clinical evaluation of the patient with chest pain, characterize the clinical problems according to their life-threatening potential. (C-3)
- 5-2.151 Apply knowledge of the epidemiology of cardiovascular disease to develop prevention strategies. (C-3)

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- 5-2.152 Integrate pathophysiological principles into the assessment of a patient with cardiovascular disease. (C-3)
- 5-2.153 Apply knowledge of the epidemiology of cardiovascular disease to develop prevention strategies. (C-3)
- 5-2.154 Integrate pathophysiological principles into the assessment of a patient with cardiovascular disease. (C-3)
- 5-2.155 Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient with cardiovascular disease. (C-3)
- 5-2.156 Integrate pathophysiological principles to the assessment of a patient in need of a pacemaker. (C-1)

- 5-2.157 Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient in need of a pacemaker. (C-3)
- 5-2.158 Develop, execute, and evaluate a treatment plan based on field impression for the patient in need of a pacemaker. (C-3)
- 5-2.159 Based on the pathophysiology and clinical evaluation of the patient with chest pain, characterize the clinical problems according to their life-threatening potential. (C-3)
- 5-2.160 Integrate pathophysiological principles to the assessment of a patient with chest pain. (C-3)
- 5-2.161 Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient with angina pectoris. (C-3)
- 5-2.162 Develop, execute and evaluate a treatment plan based on the field impression for the patient with chest pain. (C-3)

- 5-2.163 Integrate pathophysiological principles to the assessment of a patient with a suspected myocardial infarction. (C-3)
- 5-2.164 Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient with a suspected myocardial infarction. (C-3)
- 5-2.165 Develop, execute and evaluate a treatment plan based on the field impression for the suspected myocardial infarction patient. (C-3)
- 5-2.166 Integrate pathophysiological principles to the assessment of the patient with heart failure. (C-3)
- 5-2.167 Synthesize assessment findings and patient history information to form a field impression of the patient with heart failure. (C-3)
- 5-2.168 Develop, execute, and evaluate a treatment plan based on the field impression for the heart failure patient. (C-3)
- 5-2.169 Integrate pathophysiological principles to the assessment of a patient with cardiac tamponade. (C-3)



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- 5-2.170 Synthesize assessment findings and patient history information to form a field impression of the patient with cardiac tamponade. (C-3)
- 5-2.171 Develop, execute and evaluate a treatment plan based on the field impression for the patient with cardiac tamponade. (C-3)
- 5-2.172 Integrate pathophysiological principles to the assessment of the patient with a hypertensive emergency. (C-3)
- 5-2.173 Synthesize assessment findings and patient history information to form a field impression of the patient with a hypertensive emergency. (C-3)
- 5-2.174 Develop, execute and evaluate a treatment plan based on the field impression for the patient with a hypertensive emergency. (C-3)
- 5-2.175 Integrate pathophysiological principles to the assessment of the patient with cardiogenic shock. (C-3)
- 5-2.176 Synthesize assessment findings and patient history information to form a field impression of the patient with cardiogenic shock. (C-3)
- 5-2.177 Develop, execute, and evaluate a treatment plan based on the field impression for the patient with cardiogenic shock. (C-3)
- 5-2.178 Integrate the pathophysiological principles to the assessment of the patient with cardiac arrest. (C-3)
- 5-2.179 Synthesize assessment findings to formulate a rapid intervention for a patient in cardiac arrest. (C-3)
- 5-2.180 Synthesize assessment findings to formulate the termination of resuscitative efforts for a patient in cardiac arrest. (C-3)
- 5-2.181 Integrate pathophysiological principles to the assessment of a patient with vascular disorders. (C-3)
- 5-2.182 Synthesize assessment findings and patient history to form a field impression for the patient with vascular disorders. (C-3)
- 5-2.183 Integrate pathophysiological principles to the assessment and field management of a patient with chest pain. (C-3)

AFFECTIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

- 5-2.184 Value the sense of urgency for initial assessment and intervention in the patient with cardiac compromise. (A-3)
- 5-2.185 Value and defend the sense of urgency necessary to protect the window of opportunity for reperfusion in the patient with suspected myocardial infarction. (A-3)
- 5-2.186 Defend patient situations where ECG rhythm analysis is indicated. (A-3)
- 5-2.187 Value and defend the application of transcutaneous pacing system. (A-3)
- 5-2.188 Value and defend the urgency in identifying pacemaker malfunction. (A-3)
- 5-2.189 Based on the pathophysiology and clinical evaluation of the patient with acute myocardial infarction, characterize the clinical problems according to their life-threatening potential. (A-3)



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- 5-2.190 Defend the measures that may be taken to prevent or minimize complications in the patient with a suspected myocardial infarction. (A-3)
- 5-2.191 Defend the urgency based on the severity of the patient's clinical problems in a hypertensive emergency. (A-3)
- 5-2.192 From the priority of clinical problems identified, state the management responsibilities for the patient with a hypertensive emergency. (A-3)
- 5-2.193 Value and defend the urgency in rapid determination of and rapid intervention of patients in cardiac arrest. (A-3)
- 5-2.194 Value and defend the possibility of termination of resuscitative efforts in the out-of-hospital setting. (A-3)
- 5-2.195 Based on the pathophysiology and clinical evaluation of the patient with vascular disorders, characterize the clinical problems according to their life-threatening potential. (A-3)
- 5-2.196 Value and defend the sense of urgency in identifying peripheral vascular occlusion. (A-3)
- 5-2.197 Value and defend the sense of urgency in recognizing signs of aortic aneurysm. (A-3)