**VALENCIA COMMUNITY COLLEGE**

**PARAMEDIC PROGRAM**

**EMS 2604 20123/20124 (4 Credit Hours)**

**January-April 2020**

***INSTRUCTOR INFORMATION***:

 Name: Ray Taylor

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Phone Mail: Available 24 hours per day

 Office Hours: Posted during the first week of class. Student conferences by appointment.

***CLASSROOM SESSIONS* (Time and Location)**:

Monday and Wednesday 5:30 p.m. - 9:30 p.m./Building 3-226

 Tuesday and Thursday 9:00 a.m. - 1:00 p.m./Building 3-226

***COURSE DESCRIPTION*:**

EMS 2604 (Paramedic II) is the second course in the sequence necessary for completion of the Paramedic Program. The course is designed to reinforce and expand upon the materials and clinical skills learned at the EMT and Paramedic 1 level, and to integrate prior learning with enhanced advanced life support concepts and skills. Emphasis is placed on patient assessment and recognition of significant findings, prehospital diagnosis and differential diagnosis, treatment strategies, anatomy and physiology, pathophysiology, and the management of respiratory emergencies, cardiac emergencies, endocrine and metabolic emergencies, neurological emergencies, gastrointestinal/genitourinary emergencies, toxicological emergencies, and environmental conditions. Covers Modules 4 and 5 of the DOT National Standard Curriculum for Paramedic Programs.

***PROGRAM GOALS*:**

1. To provide students with the knowledge and skills necessary to become competent entry level paramedics.

2. To provide students with the clinical skills necessary for proficiency as entry-level paramedics.

3. To develop and foster the behaviors, attributes, and attitudes of a professional in the field of out-of-hospital emergency care.

***COREQUISITES*:**

EMS 2604L, EMS 2667, and EMS 2647. All courses must be completed with a "C" (80%) or greater. If a student is unsuccessful in any of the co-requisite components, he/she will be withdrawn from all advanced paramedic courses.

***EDUCATIONAL MATERIALS:***

Paramedic Care Principles and Practice Volume 3, 5th Edition, Bledsoe, Porter and Cherry, 2017.

Basic Arrhythmias, Gail Walraven 8th Edition.

Optional: Taber’s Cyclopedic Medical Dictionary, Thomas, F. A. Davis, Latest Edition.

***SPECIAL CONSIDERATIONS AND REGULATIONS*:**

1. Disabled Students: In compliance with the Federal Americans with Disabilities Act, attempts will be made to accommodate students with disabilities. Any student with a disability should contact the Program Director within the first week of class.

2. Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals), a student who withdraws from class before the established deadline for a particular term will receive a grade of “W.” A student is not permitted to withdraw after the withdrawal deadline. A faculty member MAY withdraw a student up to the beginning of the final exam period for violation of the class attendance policy. A student who is withdrawn by faculty for violation of the class attendance policy will receive a grade of “W.” Any student who withdraws or is withdrawn from a class during a third or subsequent attempt in the same course will be assigned a grade of “F.” For a complete policy and procedure overview on Valencia Policy 4-07 please go to: <http://valenciacc.edu/generalcounsel/policydetail.cfm?RecordID=75>. Withdrawal deadline for Spring Term 2020 is March 20. Tuition refund deadline is January 13, 2020.

3. Readmission to the Paramedic Program: Any student who withdraws from, or fails EMS 2604 and/or any corequisite courses will be required to complete a new application packet, and formally apply for readmission to the Paramedic Program. Students who withdraw from or fail paramedic courses are not granted automatic readmission to the program in subsequent semesters.

 4. Students who have withdrawn from or failed the second semester more than one (1) year prior to application for readmission will be required to repeat Semester I of the program. Students who apply for readmission to the program in the following academic year will be required to successfully complete the Paramedic I final examination with a score of 80% or greater and pass the Paramedic I skills laboratory final competency testing in all skills prior to readmission to the program. Individuals who fail to pass the Semester I final exam on the first attempt and/or skills competency testing within two attempts will be required to repeat the first semester of the program.

***COURSE REQUIREMENTS*:**

 1. Attendance to all lecture sessions is mandatory. Attendance is taken by the instructor at all class sessions at the beginning of class, and, at the instructor’s discretion, may be taken at the end of class.

2. Students arriving more than fifteen (15) minutes after the beginning of a class, or leaving more than fifteen (15) minutes before the end of class will be marked as absent. Arrival at any time after the beginning of class is considered tardiness. Three (3) episodes of tardiness will constitute one (1) absence. No exceptions are made to this rule.

3. Students may not perform clinical rotations during scheduled class sessions. Late arrival to class due to delay at a clinical site is not considered excused tardiness.

4. If a student fails to attend three (3) class sessions, he/she will be placed on academic probation, and will meet with the Program Director to discuss continuation in the program. Any more absences will result in academic withdrawal from the Paramedic Program.

5. It is the student’s responsibility to notify the instructor if an absence or tardiness is unavoidable.

6. The student is responsible for all materials, quizzes, or examinations missed.

7. In addition to scheduled exams and quizzes, unannounced quizzes may be administered at the instructor’s discretion.

8. Module examinations will be taken in the testing center.

a. Students will have 5 Valencia days to complete all module examinations.

b. Students not completing the module examination within 5 days will receive a zero (0%).

9. All reading assignments should be completed prior to lecture.

***GRADING SCALE AND CRITERIA***:

 93 - 100% = A

 85 - 92% = B

 75 - 84% = C

 68 - 74% = D

 1. Final grade is based upon the total points earned from module exams and quizzes.

 2. Points are converted to a letter grade at the end of the semester.

3. Grades are not curved for any test or on final comprehensive averages in any EMS course.

***VALENCIA STUDENT COMPETENCIES*:**

 Valencia faculty have defined four interrelated competencies (Value, Think, Communicate, Act) that prepare students to succeed in the world community. These competencies are outlined in the Course Catalog. In this course, through classroom lecture and discussions, group lab work, and other learning activities, you will further develop mastery of these core competencies.

 The following Valencia Student Competencies will be reinforced throughout the entire course.

 1. **THINK** - Think clearly, critically, and creatively.

 Analyze, synthesize, integrate, and evaluate in many domains of human inquiry

 A. To think, what must you do?

 • Analyze data, ideas, patterns, principles, and perspectives

 • Employ the facts, formulas, and procedures of the disciplines

 • Integrate ideas and values from different disciplines

 • Draw well‑supported conclusions

 • Revise conclusions consistently with new observations, interpretations, or reasons

B. How and where must you think?

 • With curiosity and consistency

 • Individually and in groups

 2. **VALUE** - Make reasoned value judgments and responsible commitments

A. To value, what must you do?

 • Recognize the values as expressed in attitudes, choices, and commitments

 • Distinguish among personal, ethical, aesthetic, cultural, and scientific values

 • Employ values and standards of judgment from different disciplines

 • Evaluate your own and others’ values from individual, cultural, and global perspectives

 • Articulate a considered and self‑determined set of values

 B. How and where must you value?

 • With empathy and fair‑mindedness

 • Individually and in groups

3. **COMMUNICATE**

 A. To communicate, what must you do?

 • Identify your own strengths and need for improvement as communicator

• Employ methods of communication appropriate to your audience and purpose

 • Evaluate the effectiveness of your own and others’ communication

 B. How and where must you communicate?

 • By speaking, listening, reading and writing

 • Verbally, non‑verbally, and visually

 • With honesty and civility

 4. **ACT -** Act purposefully, reflectively, and responsibly

A. To act, what must you do?

• Apply disciplinary knowledge, skills, and values to educational and career goals

 • Implement effective problem‑solving, decision‑making, and goal‑setting strategies

 • Act effectively and appropriately in various personal and professional settings

 • Assess the effectiveness of personal behavior and choices

 • Respond appropriately to changing circumstances

B. How and where must you act?

 • With courage and perseverance

 • Individually and in groups

 • In your personal, professional, and community life***ACADEMIC HONESTY***:

Each student is expected to be in compliance with the college catalog and student handbook. The professor reserves the right to determine appropriate penalties within Valencia Community College’s academic honesty policy.

***STUDENT CODE OF CONDUCT:***

Valencia Community College is dedicated not only to the advancement of knowledge and learning but also has concern for the development of responsible personal and social conduct. By enrolling at Valencia Community College, a student assumes the responsibility for becoming familiar with and abiding by the general rules of conduct. The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in disruption of a class may be directed by the faculty member to leave the class. Violation of any classroom or Valencia’s rules may lead to disciplinary action up to and including expulsion from Valencia. Disciplinary action could include being withdrawn from class, disciplinary warning, probation, suspension, expulsion, or other appropriate and authorized actions. You will find the Student Code of Conduct in the current Valencia Student Handbook.

***STRATEGIES FOR SUCCESS:***

 The paramedic program is an intensive academic and clinical activity for a full year. Balancing class and clinical requirements with work, family, and other commitments is difficult, and requires careful planning, excellent time management, and good study habits. Successful completion of the program requires strong academic performance; mastery of knowledge objectives; proficiency in technical skills; ability to integrate knowledge and skills into practice; and development of behaviors and attitudes consistent with the roles, responsibilities and performance of prehospital healthcare professionals.

In addition, the instructors will schedule regular study groups to review class material and answer questions. These sessions are optional, but may be helpful. In addition, students are encouraged to form their own study groups and meet on a regular basis for review and problem-solving.

Some suggestions for successful preparation and performance include:

 1. Use weekends wisely--read ahead through all chapters for the following week.

 2. Read the corresponding chapters at least twice. Be sure to focus study efforts on the objectives listed at the beginning of the chapter.

 3. After each lecture, review the chapter(s), emphasizing mastery of the objectives.

 4. Use the chapter objectives and class notes to study for quizzes and module examinations.

 5. Have a good night’s sleep and an adequate meal before quizzes and exams.

 6. Use slow times during clinical rotations to ask questions, to study and review, to finish class paperwork, or to practice with equipment and discuss techniques.

 7. Practice skills and procedures routinely--don’t wait until midterm or final skills testing.

 8. Practice and review standard charting formats, procedures and abbreviations. Use your medical dictionary--correct spelling and usage is important.

 9. Make an effort to learn appropriate medical terminology related to clinical practice. Vocabulary lists and flash cards may be helpful.

10. Study medications commonly taken at home. Learn their indications and side effects. Patient’s medications provide the paramedic with substantial information regarding the patient’s medical histories. Again, lists and flash cards may be helpful.

***DISCLAIMER***:

Changes in this syllabus may be made at any time during the semester by announcement to this effect. A revised syllabus may be issued at the discretion of the instructor.

**VALENCIA COMMUNITY COLLEGE**

**PARAMEDIC II**

**COURSE AGENDA**

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| --- | --- | --- | --- |
| Day/Date | Class |  Topic | Reading Assignment |
| M/T - 1/6-7 | 1 | Pulmonology - Assessment andEvaluation, Pathophysiology | Paramedic Care Volume 3Chapter 1  |
| W/R - 1/8-9 | 2 | PulmonologyPathophysiology and Treatment Interventions  | Paramedic Care Volume 3 Chapter 1 |
| M/T - 1/13-14 | 3 | Pulmonary Diagnostics:Pulse Oximetry and Capnography | Paramedic Care Volume 3 Chapter 1 |
| W/R - 1/15-16 | 4 | Endocrinology and Metabolic Emergencies  | Paramedic Care Volume 3Chapter 4  |
| W/R - 1/22-23 | 5 | GastroenterologyUrology and Nephrology | Paramedic Care Volume 3Chapters 6, 7  |
| M/T - 1/27-28 | 6 | **EXAM 1** (Classes 1-5) | In Class |
| W/R – 1/29-30  | 7 | Cardiology Anatomy, Physiology, and Electrophysiology | Paramedic Care Volume 3Chapter 2Walraven Chapter 1 |
| M/T - 2/3-4 | 8 | **QUIZ** (Class 7)CardiologyElectrocardiography: MonitoringWaveforms and Measurements | Paramedic Care Volume 3Chapter 2Walraven Chapter 2 |
| W/R- 2/5-6 | 9 | CardiologyAnalysis of the ElectrocardiogramNormal Sinus Rhythm | Paramedic Care Volume 3Chapter 2Walraven Chapter 3 |
| M/T - 2/10-11 | 10 | **QUIZ** (Classes 8-9)CardiologyAssessment and Treatment of Sinus Dysrhythmias | Paramedic Care Volume 3Chapter 2Walraven Chapter 4 |
| W/R - 2/12-13 | 11 | CardiologyAssessment and Treatment of Atrial Dysrhythmias | Paramedic Care Volume 3Chapter 2Walraven Chapter 5 |
| M/T - 2/17-18 | 12 | **QUIZ** (Classes 10-11)CardiologyAssessment and Treatment of Junctional Dysrhythmias | Paramedic Care Volume 3Chapter 2Walraven Chapter 6 |
| W/R- 2/19-20 | 13 | CardiologyAssessment and Treatment of Atrioventricular Blocks | Paramedic Care Volume 3Chapter 2Walraven Chapter 7 |

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| Day/Date | Class | Topic | Reading Assignment |
| M/T – 2/24-25 | 14 | **QUIZ** (Classes 12-13)CardiologyAssessment and Treatment of Ventricular Dysrhythmias Pacemaker Rhythms  | Paramedic Care Volume 3Chapter 2Walraven Chapter 8 |
| W/R- 2/26-27 | 15 | Pacemaker RhythmsDisturbances of Conduction  | Paramedic Care Volume 3Chapter 2Walraven Appendix E |
| M/T - 3/2-3 | 16 | **QUIZ** (Class 14-15)CardiologyPharmacology and Dosage Calculations | Paramedic Care Volume 3Chapter 2ACLS Resource |
| W/R - 3/4-5 | 17 | **QUIZ** (Class 16)CardiologyDiagnostic Electrocardiography:The 12-Lead Electrocardiogram and the Diagnosis of Ischemia, Injury and Infarction (ACS) | Paramedic Care Volume 3Chapter 212-Lead ECG HandoutsWalraven Appendix D |
| M/T - 3/16-17 | 18 | CardiologyDiagnostic Electrocardiography: Localization and Clinical Patterns of InfarctionMiscellaneous Conditions Imitating Infarction  | Paramedic Care Volume 3Chapter 212-Lead ECG HandoutsWalraven Appendix D |
| W/R - 3/18-19 | 19 | **QUIZ** (Classes 17-18)CardiologyPathophysiology and Treatment Interventions | Paramedic Care Volume 3Chapter 2 |
| M/T - 3/23-24 | 20 | CardiologyPathophysiology and Treatment Interventions  | Paramedic Care Volume 3Chapter 2 |
| W/R – 3/25-26 | 21 | **EXAM 2** (Classes 7-20)  | In Class |
| M/T- 3/30-31 | 22 | Toxicology and Toxicological Emergencies | Paramedic Care Volume 3Chapter 8 |
| W/R – 4/1-2 | 23 | Substance Abuse | Paramedic Care Volume 3Chapter 8 |

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| --- | --- | --- | --- |
| Day/Date | Class | Topic | Reading Assignment |
| M/T - 4/6-7 | 24 | Hematology, Infectious Diseases, Sepsis / HIV-AIDS  | Paramedic Care Volume 3Chapters 9, 10 |
| W/R - 4/8-9 | 25 | Allergies and Anaphylaxis Neurology and Neurological Emergencies | Paramedic Care Volume 3Chapter 3 |
| M/T - 4/13-14 | 26 | StrokesPathophysiology and Treatment Interventions | Paramedic Care Volume 3Chapter 3 |
| W/R - 4/15-16  | 27 | **EXAM 3** (Classes 22-26)  | In Class |
| \*M/T - 4/20-21 | 28 | **EXAM 4** (ACLS Written Exam)Advanced Cardiac Life SupportEvaluation and Certification | Skills Laboratory |

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**PARAMEDIC II**

**LEARNING OBJECTIVES**

**PULMONARY**

 1. Discuss the epidemiology of pulmonary diseases and conditions.

 2. Identify and describe the function of the structures located in the upper and lower airway.

 3. Discuss the physiology of ventilation and respiration.

 4. Identify common pathological events that affect the pulmonary system.

 5. Discuss abnormal assessment findings associated with pulmonary diseases and conditions.

 6. Compare various airway and ventilation techniques used in the management of pulmonary diseases.

 7. Review the pharmacological preparations that paramedics use for management of respiratory diseases and conditions.

 8. Review the pharmacological preparations used in managing patients with respiratory diseases that may be prescribed by physicians.

 9. Review the use of equipment used during the physical examination of patients with complaints associated with respiratory diseases and conditions.

10. Identify the epidemiology, anatomy, physiology, pathophysiology, assessment findings, and management for the following respiratory diseases and conditions:

 a. Adult respiratory distress syndrome

 b. Bronchial asthma

 c. Chronic bronchitis

 d. Emphysema

 e. Pneumonia

 f. Pulmonary edema

 g. Pulmonary thromboembolism

 h. Neoplasms of the lung

 i. Upper respiratory infections

 j. Spontaneous pneumothorax

 k. Hyperventilation syndrome

**CARDIOLOGY**

 1. Describe the incidence, morbidity and mortality of cardiovascular disease.

 2. Discuss prevention strategies that may reduce the morbidity and mortality of cardiovascular disease.

 3. Identify the risk factors most predisposing to coronary artery disease.

 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.

 5. Identify the major structures of the vascular system.

 6. Identify the factors affecting venous return.

 7. Identify and define the components of cardiac output.

 8. Identify phases of the cardiac cycle.

 9. Identify the arterial blood supply to any given area of the myocardium.

10. Compare and contrast the coronary arterial distribution to the major portions of the cardiac conduction system.

11. Identify the structure and course of all divisions and subdivisions of the cardiac conduction system.

12. Identify and describe how the heart's pacemaking control, rate, and rhythm are determined.

13. Explain the physiological basis of conduction delay in the AV node.

14. Define the functional properties of cardiac muscle.

15. Define the events comprising electrical potential.

16. List the most important ions involved in myocardial action potential and their primary function in this process.

17. Describe the events involved in the steps from excitation to contraction of cardiac muscle fibers.

18. Describe the clinical significance of Starling's law.

19. Identify the structures of the autonomic nervous system (ANS).

20. Identify the effect of the ANS on heart rate, rhythm and contractility.

21. Define and give examples of positive and negative inotropism, chronotropism and dromotropism.

22. Discuss the pathophysiology of cardiac disease and injury.

23. Identify and describe the details of inspection, auscultation and palpation specific to the cardiovascular system.

24. Define pulse deficit, pulsus paradoxus and pulsus alternans.

25. Identify the normal characteristics of the point of maximal impulse (PMI).

26. Identify and define the heart sounds.

27. Relate heart sounds to hemodynamic events in the cardiac cycle.

28. Describe the differences between normal and abnormal heart sounds.

29. Identify and describe the components of the focused history as it relates to the patient with cardiovascular compromise.

30. Explain the purpose of ECG monitoring.

31. Describe how ECG wave forms are produced.

32. Correlate the electrophysiological and hemodynamic events occurring throughout the entire cardiac cycle with the various ECG wave forms, segments and intervals.

33. Identify how heart rates, durations, and amplitudes may be determined from ECG recordings.

34. Relate the cardiac surfaces or areas represented by the ECG leads.

35. Given an ECG, identify the arrhythmia.

36. Identify the limitations to the ECG.

37. Differentiate among the primary mechanisms responsible for producing cardiac arrhythmias.

38. Describe a systematic approach to the analysis and interpretation of cardiac arrhythmias.

39. Describe the arrhythmias originating in the sinus node, the AV junction, the atria, and the ventricles.

40. Describe the arrhythmias originating or sustained in the AV junction.

41. Describe the abnormalities originating within the bundle branch system.

42. Describe the process of differentiating wide QRS complex tachycardias.

43. Recognize the pitfalls in the differentiation of wide QRS complex tachycardias.

44. Describe the conditions of pulseless electrical activity.

45. Describe the phenomena of reentry, aberration and accessory pathways.

46. Identify the ECG changes characteristically produced by electrolyte imbalances and specify the clinical implications.

47. Identify patient situations where ECG rhythm analysis is indicated.

48. Recognize the changes on the ECG that may reflect evidence of myocardial ischemia and injury.

49. Recognize the limitations of the ECG in reflecting evidence of myocardial ischemia and injury.

50. Correlate abnormal ECG findings with clinical interpretation.

51. Identify the major therapeutic objectives in the treatment of the patient with any arrhythmia.

52. Identify the major mechanical, pharmacological and electrical therapeutic interventions.

53. Based on field impressions, identify the need for rapid intervention for the patient in cardiovascular compromise.

54. Describe the incidence, morbidity and mortality associated with myocardial conduction defects.

55. Identify the clinical indications for transcutaneous and permanent artificial cardiac pacing.

56. Describe the components and the functions of a transcutaneous pacing system.

57. Explain what each setting and indicator on a transcutaneous pacing system represents and how the settings may be adjusted.

58. Describe the techniques of applying a transcutaneous pacing system.

59. Describe the characteristics of an implanted pacemaking system.

60. Describe artifacts that may cause confusion when evaluating the ECG of a patient with a pacemaker.

61. List the possible complications of pacing.

62. List the causes and implications of pacemaker failure.

63. Identify additional hazards that interfere with artificial pacemaker function.

64. Recognize the complications of artificial pacemakers as evidenced on ECG.

65. Describe the epidemiology, morbidity and mortality, and pathophysiology of angina pectoris.

66. List and describe the assessment parameters to be evaluated in a patient with angina pectoris.

67. Identify what is meant by the OPQRST of chest pain assessment.

68. List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris.

69. Identify the ECG findings in patients with angina pectoris.

70. Identify the paramedic responsibilities associated with management of the patient with angina pectoris.

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.

72. Describe the epidemiology, morbidity and mortality of myocardial infarction.

73. List the mechanisms by which an MI may be produced by traumatic and non-traumatic events.

74. Identify the primary hemodynamic changes produced in myocardial infarction.

75. List and describe the assessment parameters to be evaluated in a patient with a suspected myocardial infarction.

76. Identify the anticipated clinical presentation of a patient with a suspected acute myocardial infarction.

77. Differentiate the characteristics of the pain/ discomfort occurring in angina pectoris and acute myocardial infarction.

78. Identify the ECG changes characteristically seen during evolution of an acute myocardial infarction.

79. Identify the most common complications of an acute myocardial infarction.

 80. List the characteristics of a patient eligible for thrombolytic therapy.

 81. Describe the "window of opportunity" as it pertains to reperfusion of a myocardial injury or infarction.

 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.

 83. Specify the measures that may be taken to prevent or minimize complications in the patient suspected of myocardial infarction.

 84. Describe the most commonly used cardiac drugs in terms of therapeutic effect and dosages, routes of administration, side effects and toxic effects.

 85. Describe the epidemiology, morbidity and mortality of heart failure.

 86. Define the principle causes and terminology associated with heart failure.

 87. Identify the factors that may precipitate or aggravate heart failure.

 88. Describe the physiological effects of heart failure.

 89. Define the term "acute pulmonary edema" and describe its relationship to left ventricular failure.

 90. Define preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure.

 91. Differentiate between early and late signs and symptoms of left ventricular failure and those of right ventricular failure.

 92. Explain the clinical significance of paroxysmal nocturnal dyspnea.

 93. Explain the clinical significance of edema of the extremities and sacrum.

 94. List the interventions prescribed for the patient in acute congestive heart failure.

 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.

 96. Define the term "cardiac tamponade".

 97. List the mechanisms by which cardiac tamponade may be produced by traumatic and non-traumatic events.

 98. Identify the limiting factor of pericardial anatomy that determines intrapericardiac pressure.

 99. Identify the clinical criteria specific to cardiac tamponade.

100. Describe how to determine if pulsus paradoxus, pulsus alternans or electrical alternans is present.

101. Identify the paramedic responsibilities associated with management of a patient with cardiac tamponade.

102. Describe the incidence, morbidity and mortality of hypertensive emergencies.

103. Define the term "hypertensive emergency".

104. Identify the characteristics of the patient population at risk for developing a hypertensive emergency.

105. Explain the essential pathophysiological defect of hypertension in terms of Starling's law of the heart.

106. Identify the progressive vascular changes associate with sustained hypertension.

107. Describe the clinical features of the patient in a hypertensive emergency.

108. Rank the clinical problems of patients in hypertensive emergencies according to their sense of urgency.

109. From the priority of clinical problems identified, state the management responsibilities for the patient with a hypertensive emergency.

110. Identify the drugs of choice for hypertensive emergencies, rationale for use, clinical precautions and disadvantages of selected antihypertensive agents.

111. Correlate abnormal findings with clinical interpretation of the patient with a hypertensive emergency.

112. Define the term "cardiogenic shock".

113. Describe the major systemic effects of reduced tissue perfusion caused by cardiogenic shock.

114. Explain the primary mechanisms by which the heart may compensate for a diminished cardiac output and describe their efficiency in cardiogenic shock.

115. Differentiate progressive stages of cardiogenic shock.

116. Identify the clinical criteria for cardiogenic shock.

117. Describe the characteristics of patients most likely to develop cardiogenic shock.

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.

119. Correlate abnormal findings with clinical assessment of the patient in cardiogenic shock.

120. Identify the paramedic responsibilities associated with management of a patient in cardiogenic shock.

121. Define the term "cardiac arrest".

122. Identify the characteristics of patient population at risk for developing cardiac arrest from cardiac causes.

123. Identify non-cardiac causes of cardiac arrest.

124. Describe the arrhythmias seen in cardiac arrest.

125. Identify the critical actions necessary in caring for the patient with cardiac arrest.

126. Explain how to confirm asystole using the 3-lead ECG.

127. Define the terms defibrillation and synchronized cardioversion.

128. Specify the methods of supporting the patient with a suspected ineffective implanted defibrillation device.

129. Describe the most commonly used pharmacological agents in the managements of cardiac arrest in terms of therapeutic effects.

130. Identify resuscitation.

131. Identify circumstances and situations where resuscitation efforts would not be initiated.

132. Identify and list the inclusion and exclusion criteria for termination of resuscitation efforts.

133. Identify communication and documentation protocols with medical direction and law enforcement used for termination of resuscitation efforts.

134. Describe the incidence, morbidity and mortality of vascular disorders.

135. Describe the pathophysiology of vascular disorders.

136. List the traumatic and non-traumatic causes of vascular disorders.

137. Define the terms "aneurysm", "claudication" and "phlebitis".

138. Identify the peripheral arteries most commonly affected by occlusive disease.

139. Identify the major factors involved in the pathophysiology of aortic aneurysm.

140. Recognize the usual order of signs and symptoms that develop following peripheral artery occlusion.

141. Identify the clinical significance of claudication and presence of arterial bruits in a patient with peripheral vascular disorders.

142. Describe the clinical significance of unequal arterial blood pressure readings in the arms.

143. Recognize and describe the signs and symptoms of dissecting thoracic or abdominal aneurysm.

144. Describe the significant elements of the patient history in a patient with vascular disease.

145. Identify the hemodynamic effects of vascular disorders.

146. Identify the complications of vascular disorders.

147. Identify the Paramedic's responsibilities associated with management of patients with vascular disorders.

 148. Develop, execute and evaluate a treatment plan based on the field impression for the patient with vascular disorders.

149. Differentiate between signs and symptoms of cardiac tamponade, hypertensive emergencies, cardiogenic shock, and cardiac arrest.

150. Based on the pathophysiology and clinical evaluation of the patient with chest pain, characterize the clinical problems according to their life-threatening potential.

151. Apply knowledge of the epidemiology of cardiovascular disease to develop prevention strategies.

152. Integrate pathophysiological principles into the assessment of a patient with cardiovascular disease.

153. Apply knowledge of the epidemiology of cardiovascular disease to develop prevention strategies.

154. Integrate pathophysiological principles into the assessment of a patient with cardiovascular disease.

155. Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient with cardiovascular disease.

156. Integrate pathophysiological principles to the assessment of a patient in need of a pacemaker.

157. Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient in need of a pacemaker.

158. Develop, execute, and evaluate a treatment plan based on field impression for the patient in need of a pacemaker.

159. Based on the pathophysiology and clinical evaluation of the patient with chest pain, characterize the clinical problems according to their life-threatening potential.

160. Integrate pathophysiological principles to the assessment of a patient with chest pain.

161. Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient with angina pectoris.

162. Develop, execute and evaluate a treatment plan based on the field impression for the patient with chest pain.

163. Integrate pathophysiological principles to the assessment of a patient with a suspected myocardial infarction.

164. Synthesize patient history, assessment findings and ECG analysis to form a field impression for the patient with a suspected myocardial infarction.

165. Develop, execute and evaluate a treatment plan based on the field impression for the suspected myocardial infarction patient.

166. Integrate pathophysiological principles to the assessment of the patient with heart failure.

167. Synthesize assessment findings and patient history information to form a field impression of the patient with heart failure.

168. Develop, execute, and evaluate a treatment plan based on the field impression for the heart failure patient.

169. Integrate pathophysiological principles to the assessment of a patient with cardiac tamponade.

170. Synthesize assessment findings and patient history information to form a field impression of the patient with cardiac tamponade.

171. Develop, execute and evaluate a treatment plan based on the field impression for the patient with cardiac tamponade.

172. Integrate pathophysiological principles to the assessment of the patient with a hypertensive emergency.

173. Synthesize assessment findings and patient history information to form a field impression of the patient with a hypertensive emergency.

174. Develop, execute and evaluate a treatment plan based on the field impression for the patient with a hypertensive emergency.

175. Integrate pathophysiological principles to the assessment of the patient with cardiogenic shock.

 176. Synthesize assessment findings and patient history information to form a field impression of the patient with cardiogenic shock.

177. Develop, execute, and evaluate a treatment plan based on the field impression for the patient with cardiogenic shock.

178. Integrate the pathophysiological principles to the assessment of the patient with cardiac arrest.

179. Synthesize assessment findings to formulate a rapid intervention for a patient in cardiac arrest.

180. Synthesize assessment findings to formulate the termination of resuscitative efforts for a patient in cardiac arrest.

181. Integrate pathophysiological principles to the assessment of a patient with vascular disorders.

182. Synthesize assessment findings and patient history to form a field impression for the patient with vascular disorders.

183. Integrate pathophysiological principles to the assessment and field management of a patient with chest pain.

**NEUROLOGY**

 1. Describe the incidence, morbidity and mortality of neurological emergencies.

 2. Identify the risk factors most predisposing to the nervous system.

 3. Discuss the anatomy and physiology of the organs and structures related to nervous system.

 4. Discuss the pathophysiology of non-traumatic neurologic emergencies.

 5. Discuss the assessment findings associated with non-traumatic neurologic emergencies.

 6. Identify the need for rapid intervention and the transport of the patient with non-traumatic emergencies.

 7. Discuss the management of non-traumatic neurological emergencies.

 8. Discuss the pathophysiology of coma and altered mental status.

 9. Discuss the assessment findings associated with coma and altered mental status.

10. Discuss the management/ treatment plan of coma and altered mental status.

11. Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for seizures.

12. Discuss the pathophysiology of seizures.

13. Discuss the assessment findings associated with seizures.

14. Define seizure.

15. Describe and differentiate the major types of seizures.

16. List the most common causes of seizures.

17. Describe the phases of a generalized seizure.

18. Discuss the pathophysiology of syncope.

19. Discuss the assessment findings associated with syncope.

20. Discuss the management/ treatment plan of syncope.

21. Discuss the pathophysiology of headache.

22. Discuss the assessment findings associated with headache.

23. Discuss the management/ treatment plan of headache.

24. Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for neoplasms.

25. Discuss the pathophysiology of neoplasms.

26. Describe the types of neoplasms.

27. Discuss the assessment findings associated with neoplasms.

28. Discuss the management/ treatment plan of neoplasms.

29. Define neoplasms.

30. Recognize the signs and symptoms related to neoplasms.

31. Correlate abnormal assessment findings with clinical significance in the patient with neoplasms.

32. Differentiate among the various treatment and pharmacological interventions used in the management of neoplasms.

33. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with neoplasms.

34. Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for abscess.

35. Discuss the pathophysiology of abscess.

36. Discuss the assessment findings associated with abscess.

37. Discuss the management/ treatment plan of abscess.

38. Define abscess.

39. Recognize the signs and symptoms related to abscess.

40. Correlate abnormal assessment findings with clinical significance in the patient with abscess.

41. Differentiate among the various treatment and pharmacological interventions used in the management of abscess.

42. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with abscess.

43. Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for stroke and intracranial hemorrhage.

44. Discuss the pathophysiology of stroke and intracranial hemorrhage.

45. Describe the types of stroke and intracranial hemorrhage.

46. Discuss the assessment findings associated with stroke and intracranial hemorrhage.

47. Discuss the management/ treatment plan of stroke and intracranial hemorrhage.

48. Define stroke and intracranial hemorrhage.

49. Recognize the signs and symptoms related to stroke and intracranial hemorrhage.

50. Correlate abnormal assessment findings with clinical significance in the patient with stroke and intracranial hemorrhage.

51. Differentiate among the various treatment and pharmacological interventions used in the management of stroke and intracranial hemorrhage.

52. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with stroke and intracranial hemorrhage.

53. Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for transient ischemic attack.

54. Discuss the pathophysiology of transient ischemic attack.

55. Discuss the assessment findings associated with transient ischemic attack.

56. Discuss the management/ treatment plan of transient ischemic attack.

57. Define transient ischemic attack.

58. Recognize the signs and symptoms related to transient ischemic attack.

59. Correlate abnormal assessment findings with clinical significance in the patient with transient ischemic attack.

60. Differentiate among the various treatment and pharmacological interventions used in the management of transient ischemic attack.

61. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with transient ischemic attack.

62. Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for degenerative neurological diseases.

63. Discuss the pathophysiology of degenerative neurological diseases.

64. Discuss the assessment findings associated with degenerative neurological diseases.

65. Discuss the management/ treatment plan of degenerative neurological diseases.

66. Define the following:

 a. Muscular dystrophy

 b. Multiple sclerosis

 c. Dystonia

 d. Parkinson’s disease

 e. Trigeminal neuralgia

 f. Bells palsy

 g. Amyotrophic lateral sclerosis

 h. Peripheral neuropathy

 I. Myoclonus

 j. Spina bifida

 k. Poliomyelitis

67. Recognize the signs and symptoms related to degenerative neurological diseases.

68. Correlate abnormal assessment findings with clinical significance in the patient with degenerative neurological diseases.

69. Differentiate among the various treatment and pharmacological interventions used in the management of degenerative neurological diseases.

70. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with degenerative neurological diseases.

71. Integrate the pathophysiological principles of the patient with a neurological emergency.

72. Differentiate between neurological emergencies based on assessment findings.

73. Correlate abnormal assessment findings with the clinical significance in the patient with neurological complaints.

74. Develop a patient management plan based on field impression in the patient with neurological emergencies.

**ENDOCRINOLOGY**

 1. Describe the incidence, morbidity and mortality of endocrinologic emergencies.

 2. Identify the risk factors most predisposing to endocrinologic disease.

 3. Discuss the anatomy and physiology of organs and structures related to endocrinologic diseases.

 4. Review the pathophysiology of endocrinologic emergencies.

 5. Discuss the general assessment findings associated with endocrinologic emergencies.

 6. Identify the need for rapid intervention of the patient with endocrinologic emergencies.

 7. Discuss the management of endocrinologic emergencies.

 8. Describe osmotic diuresis and its relationship to diabetes.

 9. Describe the pathophysiology of adult onset diabetes mellitus.

10. Describe the pathophysiology of juvenile onset diabetes mellitus.

11. Describe the effects of decreased levels of insulin on the body.

12. Correlate abnormal findings in assessment with clinical significance in the patient with a diabetic emergency.

13. Discuss the management of diabetic emergencies.

14. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a diabetic emergency.

15. Differentiate between the pathophysiology of normal glucose metabolism and diabetic glucose metabolism.

16. Describe the mechanism of ketone body formation and its relationship to ketoacidosis.

17. Discuss the physiology of the excretion of potassium and ketone bodies by the kidneys.

18. Describe the relationship of insulin to serum glucose levels.

19. Describe the effects of decreased levels of insulin on the body.

20. Describe the effects of increased serum glucose levels on the body.

21. Discuss the pathophysiology of hypoglycemia.

22. Discuss the utilization of glycogen by the human body as it relates to the pathophysiology of hypoglycemia.

23. Describe the actions of epinephrine as it relates to the pathophysiology of hypoglycemia.

24. Recognize the signs and symptoms of the patient with hypoglycemia.

25. Describe the compensatory mechanisms utilized by the body to promote homeostasis relative to hypoglycemia.

26. Describe the management of a responsive hypoglycemic patient.

27. Correlate abnormal findings in assessment with clinical significance in the patient with hypoglycemia.

28. Discuss the management of the hypoglycemic patient.

29. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with hypoglycemia.

30. Discuss the pathophysiology of hyperglycemia.

31. Recognize the signs and symptoms of the patient with hyperglycemia.

32. Describe the management of hyperglycemia.

33. Correlate abnormal findings in assessment with clinical significance in the patient with hyperglycemia.

34. Discuss the management of the patient with hyperglycemia.

35. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with hyperglycemia.

36. Discuss the pathophysiology of nonketotic hyperosmolar coma.

37. Recognize the signs and symptoms of the patient with nonketotic hyperosmolar coma.

38. Describe the management of nonketotic hyperosmolar coma.

39. Correlate abnormal findings in assessment with clinical significance in the patient with nonketotic hyperosmolar coma.

40. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with nonketotic hyperosmolar coma.

41. Discuss the management of the patient with hyperglycemia.

42. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with hyperglycemia.

43. Discuss the pathophysiology of diabetic ketoacidosis.

44. Recognize the signs and symptoms of the patient with diabetic ketoacidosis.

45. Describe the management of diabetic ketoacidosis.

46. Correlate abnormal findings in assessment with clinical significance in the patient with diabetic ketoacidosis.

47. Discuss the management of the patient with diabetic ketoacidosis.

48. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with diabetic ketoacidosis.

49. Discuss the pathophysiology of thyrotoxicosis.

50. Recognize signs and symptoms of the patient with thyrotoxicosis.

51. Describe the management of thyrotoxicosis.

52. Correlate abnormal findings in assessment with clinical significance in the patient with thyrotoxicosis.

53. Discuss the management of the patient with thyrotoxicosis.

54. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with thyrotoxicosis.

55. Discuss the pathophysiology of myxedema.

56. Recognize signs and symptoms of the patient with myxedema.

57. Describe the management of myxedema.

58. Correlate abnormal findings in assessment with clinical significance in the patient with myxedema.

59. Discuss the management of the patient with myxedema.

60. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with myxedema.

61. Discuss the pathophysiology of Cushing's syndrome.

62. Recognize signs and symptoms of the patient with Cushing's syndrome.

63. Describe the management of Cushing's syndrome.

64. Correlate abnormal findings in assessment with clinical significance in the patient with Cushing's syndrome.

65. Discuss the management of the patient with Cushing’s syndrome.

66. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with Cushing's syndrome.

67. Discuss the pathophysiology of adrenal Insufficiency.

68. Recognize signs and symptoms of the patient with adrenal insufficiency.

69. Describe the management of adrenal insufficiency.

70. Correlate abnormal findings in assessment with clinical significance in the patient with adrenal insufficiency.

71. Discuss the management of the patient with adrenal insufficiency.

72. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with adrenal insufficiency.

73. Integrate the pathophysiological principles to the assessment of a patient with a endocrinological emergency.

74. Differentiate between endocrine emergencies based on assessment and history.

75. Correlate abnormal findings in the assessment with clinical significance in the patient with endocrinologic emergencies.

76. Develop a patient management plan based on field impression in the patient with an endocrinologic emergency.

**ALLERGIES AND ANAPHYLAXIS**

 1. Define allergic reaction.

 2. Define anaphylaxis.

 3. Describe the incidence, morbidity and mortality of anaphylaxis.

 4. Identify the risk factors most predisposing to anaphylaxis.

 5. Discuss the anatomy and physiology of the organs and structures related to anaphylaxis.

 6. Describe the prevention of anaphylaxis and appropriate patient education.

 7. Discuss the pathophysiology of allergy and anaphylaxis.

 8. Describe the common methods of entry of substances into the body.

 9. Define natural and acquired immunity.

10. Define antigens and antibodies.

11. List common antigens most frequently associated with anaphylaxis.

12. Discuss the formation of antibodies in the body.

13. Describe physical manifestations in anaphylaxis.

14. Differentiate manifestations of an allergic reaction from anaphylaxis.

15. Recognize the signs and symptoms related to anaphylaxis.

16. Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis.

17. Integrate the pathophysiological principles of the patient with anaphylaxis.

18. Correlate abnormal findings in assessment with the clinical significance in the patient with anaphylaxis.

19. Develop a treatment plan based on field impression in the patient with allergic reaction and anaphylaxis.

**GASTROENTEROLOGY**

 1. Describe the incidence, morbidity and mortality of gastrointestinal emergencies.

 2. Identify the risk factors most predisposing to gastrointestinal emergencies.

 3. Discuss the anatomy and physiology of the organs and structures related to gastrointestinal diseases.

 4. Discuss the pathophysiology of inflammation and its relationship to acute abdominal pain.

 5. Define somatic pain as it relates to gastroenterology.

 6. Define visceral pain as it relates to gastroenterology.

 7. Define referred pain as it relates to gastroenterology.

 8. Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.

 9. Discuss the signs and symptoms of local inflammation relative to acute abdominal pain.

10. Discuss the signs and symptoms of peritoneal inflammation relative to acute abdominal pain.

11. List the signs and symptoms of general inflammation relative to acute abdominal pain.

12. Based on assessment findings, differentiate between local, peritoneal and general inflammation as they relate to acute abdominal pain.

13. Describe the questioning technique and specific questions the paramedic should ask when gathering a focused history in a patient with abdominal pain.

14. Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.

15. Define upper gastrointestinal bleeding.

16. Discuss the pathophysiology of upper gastrointestinal bleeding.

17. Recognize the signs and symptoms related to upper gastrointestinal bleeding.

18. Describe the management for upper gastrointestinal bleeding.

19. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with upper GI bleeding.

20. Define lower gastrointestinal bleeding.

21. Discuss the pathophysiology of lower gastrointestinal bleeding.

22. Recognize the signs and symptoms related to lower gastrointestinal bleeding.

23. Describe the management for lower gastrointestinal bleeding.

24. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with lower GI bleeding.

25. Define acute gastroenteritis.

26. Discuss the pathophysiology of acute gastroenteritis.

27. Recognize the signs and symptoms related to acute gastroenteritis.

28. Describe the management for acute gastroenteritis.

29. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with acute gastroenteritis.

30. Define colitis.

31. Discuss the pathophysiology of colitis.

32. Recognize the signs and symptoms related to colitis.

33. Describe the management for colitis.

34. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with colitis.

35. Define gastroenteritis.

36. Discuss the pathophysiology of gastroenteritis.

37. Recognize the signs and symptoms related to gastroenteritis.

38. Describe the management for gastroenteritis.

39. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with gastroenteritis.

40. Define diverticulitis.

41. Discuss the pathophysiology of diverticulitis.

42. Recognize the signs and symptoms related to diverticulitis.

43. Describe the management for diverticulitis.

44. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with diverticulitis.

45. Define appendicitis.

46. Discuss the pathophysiology of appendicitis.

47. Recognize the signs and symptoms related to appendicitis.

48. Describe the management for appendicitis.

49. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with appendicitis.

50. Define peptic ulcer disease.

51. Discuss the pathophysiology of peptic ulcer disease.

52. Recognize the signs and symptoms related to peptic ulcer disease.

53. Describe the management for peptic ulcer disease.

54. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with peptic ulcer disease.

55. Define bowel obstruction.

56. Discuss the pathophysiology of bowel obstruction.

57. Recognize the signs and symptoms related to bowel obstruction.

58. Describe the management for bowel obstruction.

59. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with bowel obstruction.

60. Define Crohns disease.

61. Discuss the pathophysiology of Crohns disease.

62. Recognize the signs and symptoms related to Crohns disease.

63. Describe the management for Crohns disease.

64. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with Crohns disease.

65. Define pancreatitis.

66. Discuss the pathophysiology of pancreatitis.

67. Recognize the signs and symptoms related to pancreatitis.

68. Describe the management for pancreatitis.

69. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with pancreatitis.

70. Define esophageal varices.

71. Discuss the pathophysiology of esophageal varices.

72. Recognize the signs and symptoms related to esophageal varices.

73. Describe the management for esophageal varices.

74. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with esophageal varices.

75. Define hemorrhoids.

76. Discuss the pathophysiology of hemorrhoids.

77. Recognize the signs and symptoms related to hemorrhoids.

78. Describe the management for hemorrhoids.

79. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with hemorrhoids.

80. Define cholecystitis.

81. Discuss the pathophysiology of cholecystitis.

82. Recognize the signs and symptoms related to cholecystitis.

83. Describe the management for cholecystitis.

84. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with cholecystitis.

85. Define acute hepatitis.

86. Discuss the pathophysiology of acute hepatitis.

87. Recognize the signs and symptoms related to acute hepatitis.

88. Describe the management for acute hepatitis.

89. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with acute hepatitis.

90. Integrate pathophysiological principles of the patient with a gastrointestinal emergency.

91. Differentiate between gastrointestinal emergencies based on assessment findings.

92. Correlate abnormal findings in the assessment with the clinical significance in the patient with abdominal pain.

93. Develop a patient management plan based on field impression in the patient with abdominal pain.

**RENAL/UROLOGY**

 1. Describe the incidence, morbidity, mortality, and risk factors predisposing to urological emergencies.

 2. Discuss the anatomy and physiology of the organs and structures related to urogenital diseases.

 3. Define referred pain and visceral pain as it relates to urology.

 4. Describe the questioning technique and specific questions the paramedic should utilize when gathering a focused history in a patient with abdominal pain.

 5. Describe the technique for performing a comprehensive physical examination of a patient complaining of abdominal pain.

 6. Define acute renal failure.

 7. Discuss the pathophysiology of acute renal failure.

 8. Recognize the signs and symptoms related to acute renal failure.

 9. Describe the management for acute renal failure.

10. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with acute renal failure.

11. Define chronic renal failure.

12. Discuss the pathophysiology of chronic renal failure.

13. Recognize the signs and symptoms related to chronic renal failure.

14. Describe the management for chronic renal failure.

15. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with chronic renal failure.

16. Define renal dialysis.

17. Discuss the common complication of renal dialysis.

18. Define renal calculi.

19. Discuss the pathophysiology of renal calculi.

20. Recognize the signs and symptoms related to renal calculi.

21. Describe the management for renal calculi.

22. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with renal calculi.

23. Define urinary tract infection.

24. Discuss the pathophysiology of urinary tract infection.

25. Recognize the signs and symptoms related to urinary tract infection.

26. Describe the management for a urinary tract infection.

27. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with a urinary tract infection.

28. Apply the epidemiology to develop prevention strategies for urological emergencies.

29. Integrate pathophysiological principles to the assessment of a patient with abdominal pain.

30. Synthesize assessment findings and patient history information to accurately differentiate between pain of a urogenital emergency and that of other origins.

31. Develop, execute, and evaluate a treatment plan based on the field impression made in the assessment.

**TOXICOLOGY**

 1. Describe the incidence, morbidity and mortality of toxic emergencies.

 2. Identify the risk factors most predisposing to toxic emergencies.

 3. Discuss the anatomy and physiology of the organs and structures related to toxic emergencies.

 4. Describe the routes of entry of toxic substances into the body.

 5. Discuss the role of the Poison Control Center in the United States.

 6. List the toxic substances that are specific to your region.

 7. Discuss the pathophysiology of the entry of toxic substances into the body.

 8. Discuss the assessment findings associated with various toxidromes.

 9. Identify the need for rapid intervention and transport of the patient with a toxic substance emergency.

10. Discuss the management of toxic substances.

11. Define poisoning by ingestion.

12. List the most common poisonings by ingestion.

13. Describe the pathophysiology of poisoning by ingestion.

14. Recognize the signs and symptoms related to the most common poisonings by ingestion.

15. Correlate the abnormal findings in assessment with the clinical significance in the patient with the most common poisonings by ingestion.

16. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by ingestion.

17. Discuss the factors affecting the decision to induce vomiting in a patient with ingested poison.

18. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by ingestion.

19. Define poisoning by inhalation.

20. List the most common poisonings by inhalation.

21. Describe the pathophysiology of poisoning by inhalation.

22. Recognize the signs and symptoms related to the most common poisonings by inhalation.

23. Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by inhalation.

24. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by inhalation.

25. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by inhalation.

26. Define poisoning by injection.

27. List the most common poisonings by injection.

28. Describe the pathophysiology of poisoning by injection.

29. Recognize the signs and symptoms related to the most common poisonings by injection.

30. Correlate the abnormal findings in assessment with the clinical significance in the patient with the most common poisonings by injection.

31. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by injection.

32. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by injection.

33. Define poisoning by surface absorption.

34. List the most common poisonings by surface absorption.

35. Describe the pathophysiology of poisoning by surface absorption.

36. Recognize the signs and symptoms related to the most common poisonings by surface absorption.

37. Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by surface absorption.

38. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by surface absorption.

39. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by surface absorption.

40. Define poisoning by overdose.

41. List the most common poisonings by overdose.

42. Describe the pathophysiology of poisoning by overdose.

43. Recognize the signs and symptoms related to the most common poisonings by overdose.

44. Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by overdose.

45. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by overdose.

46. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by overdose.

47. Define drug abuse.

48. Discuss the incidence of drug abuse in the United States.

49. Define the following terms:

 a. Substance or drug abuse

 b. Substance or drug dependence

 c. Tolerance

 d. Withdrawal

 e. Addiction

50. List the most commonly abused drugs (both by chemical name and street names).

51. Describe the pathophysiology of commonly used drugs.

52. Recognize the signs and symptoms related to the most commonly abused drugs.

53. Correlate the abnormal findings in assessment with the clinical significance in patients using the most commonly abused drugs.

54. Differentiate among the various treatments and pharmacological interventions in the management of the most commonly abused drugs.

55. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients using the most commonly abused drugs.

56. List the clinical uses, street names, pharmacology, assessment finding and management for patient who have taken the following drugs or been exposed to the following substances:

 a. Cocaine

 b. Marijuana and cannabis compounds

 c. Amphetamines and amphetamine-like drugs

 d. Barbiturates

 e. Sedative-hypnotics

 f. Cyanide

 g. Narcotics/ opiates

 h. Cardiac medications

 i. Caustics

 j. Common household substances

 k. Drugs abused for sexual purposes/ sexual gratification

 l. Carbon monoxide

 m. Alcohols

 n. Hydrocarbons

 o. Psychiatric medications

 p. Newer anti-depressants and serotonin syndromes

 q. Lithium

 r. MAO inhibitors

 s. Non-prescription pain medications

 1) Nonsteroidal anti-inflammatory agents

 2) Salicylate

 3) Acetaminophen

 t. Theophylline

 u. Metals

 v. Plants and mushrooms

57. Discuss common causative agents, pharmacology, assessment findings and management for a patient with food poisoning.

58. Discuss common offending organisms, pharmacology, assessment findings and management for a patient with a bite or sting.

59. Integrate pathophysiological principles of the patient with a toxic substance exposure.

60. Differentiate between toxic substance emergencies based on assessment findings.

61. Correlate abnormal findings in the assessment with the clinical significance in the patient exposed to a toxic substance.

62. Develop a patient management plan based on field impression in the patient exposed to a toxic substance.

**COMPETENCIES OF A VALENCIA PARAMEDIC GRADUATE**

The competencies listed below will be addressed throughout the course. Specific topics are included which relate explicitly to each area with examples of each.

 1. Think critically

Each topic presented requires students to use the acquired knowledge by analyzing and correlating the information to evaluate a given clinical situation. Specific topics include correlation of physical examination of a patient in cardiac or respiratory failure. They must use the information to make a judgement regarding further procedures for life support.

 2. Read, listen, write and speak effectively

Students will demonstrate by class participation, exams, and written and oral case studies. They must read the case workup and write or verbally respond to each set of symptoms.

 3. Understand and use quantitative information

Students will demonstrate by explaining and interpreting blood pressure and pulse, and acid and base balance.

 4. Have the knowledge and skills necessary for effective citizenship

Students must effectively understand the rules and regulations regarding their profession. They will interact with the State regulatory agencies throughout their training and internship. They will be expected to acquire the necessary skills to deal with people in stressful situations and to follow the practices and guidelines established by the legal agencies of the communities.

 5. Recognize the value of physical and mental health

The body systems are studied in health and disease. Students will understand both processes and learn the benefits of maintaining health physically and mentally. The information on specific diseases will show methods of prevention. All students will know and practice the universal body fluid precautions and be well-educated in all aspects of the transmission of disease.

6. Demonstrate the ability to communicate and use interpersonal skills effectively

The student will be able to:

 1. Develop basic listening skills.

 2. Develop basic observational skills and related documentation strategies in written and oral form.

 3. Identify characteristics of successful and unsuccessful communication including barriers.

 4. Respond to verbal and non-verbal cues.

 5. Compose written communication using correct spelling, grammar, and format.

 6. Use appropriate medical terminology and abbreviations.

 7. Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.

 8. Recognize the importance of patient/client education regarding health care.

 9. Adapt communication skills to varied levels of understanding and cultural orientation.

 10. Demonstrate telephone usage including taking messages.

 11. Demonstrate ability to give and follow directions.

 12. Distinguish between factual reports and personal opinion.

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