

**MIAMI DADE COLLEGE
MEDICAL CENTER CAMPUS
SCHOOL OF HEALTH TECHNOLOGIES**

Department of Emergency Medical Services

**COURSE OUTLINE
PARAMEDIC LECTURE I
EMS 2601 – EMERGENCY MEDICAL TECHNICIAN –
PARAMEDIC**

MODULE 1: PREPARATORY

MODULE 2: AIRWAY

MODULE 3: PATIENT ASSESSMENT

MODULE 4: TRAUMA

EMS 2601: PARAMEDIC LECTURE I

COURSE DESCRIPTION:

EMS 2601 is the first course in the sequence necessary for completion of the Paramedic Certificate Program. The course is designed to reinforce concepts and clinical skills learned at the EMT level and to integrate this knowledge beginning with advanced life support concepts and skills. Emphasis is placed on EMS systems, illness and injury prevention, medical-legal issues, patient assessment, airway management and ventilation, pathophysiology, pharmacology, shock, decision-making, and the management of trauma related injuries. This course includes Modules 1- 4 of the 1998 DOT National Standard Curriculum for Paramedic Programs. Pre-requisite: BSC 2085, 2085L, State of Florida Emergency Medical Technician Certification, Co-requisite: EMS 2601L, EMS 2664

Miami Dade College Learning Outcomes

Miami Dade College has adopted the General Education Outcomes listed below. Upon completion of a program of study at the Medical Center Campus, graduates from Miami Dade College should emulate these outcomes.

1. Communicate effectively using listening, speaking, reading and writing skills.
2. Use quantitative analytical skills to evaluate and process numerical data.
3. Solve problems using critical and creative thinking and scientific reasoning.
4. Formulate strategies to locate, evaluate, and apply information.
5. Demonstrate knowledge of diverse cultures, including global and historical perspectives.
6. Create strategies that can be used to fulfill personal, civic, and social responsibilities.
7. Demonstrate knowledge of ethical thinking and its application to issues in society.
8. Use computer and emerging technologies effectively.
9. Demonstrate an appreciation for aesthetics and creative activities.
10. Describe how natural systems function and recognize the impact of humans on the environment.

This course provides intentional learning experiences to address outcomes
1 - 4, 6, 7, & 10

COURSE OFFERING:

Shift Class:

Fall Semester:	Day: "B" Shifts	TIME: 5:00pm – 9:00 pm	ROOM: TBA
Spr Semester:	Day: "C" Shifts	TIME: 5:00pm – 9:00 pm	ROOM: TBA
Sum Semester:	Day: "A" Shifts	TIME: 5:00pm – 9:00 pm	ROOM: TBA

Evening Class:

Mondays & Wednesdays or Tuesdays & Thursdays (Depending of Clinical Rotations)

TIME: 5:00pm – 9:00pm

ROOM: TBA

PREREQUISITE COURSES: EMS 1119, EMS 1119L, EMS 1431, BSC 2085, BSC 2085L

CO-REQUISITE COURSES: EMS 2601L, EMS 2664

REQUIRED TEXTS:

Nancy Caroline's Emergency Care in the Streets cd included 6th ed; Jones and Bartlett

Nancy Caroline's Emergency Care in the Street 6th ed workbook; Jones and Bartlett

COURSE COORDINATOR: Orlando Fernandez

INSTRUCTOR:

OFFICE: 2214

OFFICE PHONE: 305-237-4321

COURSE EVALUATION:

Your final course grade will be based on the following criteria:

50% - Quizzes
25% - Midterm Exam
25% - Final Exam

ATTENDANCE/CLASS PARTICIPATION

Attendance will be taken at the beginning of every class. It may also be taken at the end of class. Due to the large amount of information disseminated during lecture, it is strongly suggested and recommended that students attend class on a regular basis so they do not fall behind. Students are also encouraged to participate in class discussions and ask questions to clear up any uncertainties. Please have the courtesy to make every attempt to contact your instructor if you are unable to attend a class.

QUIZZES

There will be a number of quizzes during this semester. Any quiz that is missed will count as a zero (0). There will be no make-ups unless previously approved by the instructor or emergency or extenuating circumstances occur.

MID-TERM AND FINAL EXAMINATION

You will have two (2) comprehensive examinations for the lecture component—a mid-term and a final. The mid-term exam will cover all of the didactic material from the first class to the last class prior to the mid-term. The final exam will cover all of the didactic material from the first class after mid-term to the last class before the final review. Consult the course syllabus to determine exactly what material will be on each exam. Expect the exams to vary in length. They will, for the most part, be multiple choice-type examinations. However, there may be essays or fill-in-the-blank questions. Be prepared!!! **Any examination that is missed will count as a zero (0), unless there are “major extenuating circumstances” which warrant a make-up exam.**

COURSE GRADING SCALE:

A = 100-94	B = 93-87
C = 86-80	F = 79-below

ACCESS SERVICES

Students with documented disabilities should contact the campus ACCESS office in advance for information on appropriate policies and procedures for obtaining assistance. No retroactive accommodations can be provided. The ACCESS office is located in room # 1345-1 at 305 237-4048. Additional information is available at <http://www.mdc.edu/medical/student-services/access>.

SUGGESTIONS FOR SUCCESSFULLY COMPLETING THIS COURSE

- Your instructors are here to help you succeed. Feel free to stop by the office or call. **Keep the line of communication open.**
- Class begins promptly on time. You should arrive at class about ten minutes before it begins. This will give you time to settle in and talk before class begins. Please do not arrive late. It is distracting to everyone.
- If you will be unavoidably late or absent, please call the course coordinator (as a courtesy) as soon as you know.
- There will be a good deal of practice/hands-on time during this class. Please ask questions, discuss and participate. Your time is valuable. It will not do you any good to come to class and not participate.
- Look over the course outline and course schedule before each class. This will allow you to focus your study time in the most valuable area.
- Read the assigned pages **BEFORE** class. This will allow you to participate in class and ask any questions about information that is unclear.
- **READ** and **STUDY** the articles that you receive as handouts in class. This information will be on tests and quizzes.
- If you feel you are not doing as well as you wish to, please speak with your instructors and course coordinator. Your course coordinator can make arrangements to schedule a tutor to assist you.
- Treat everyone, as you would like him or her to treat you. This includes students, instructors, staff and administrators. Actually it should include everyone you meet. Common courtesy goes a long way...in class as well as in life.
- Realize that this outline of objectives should serve as a guide to the major topics the class will cover. It is by no means an exhaustive list of every point you need to know.

EMS 2601 PARAMEDIC LECTURE 1

TABLE OF CONTENT

<u>DATE</u>	<u>MODULE</u>	<u>CONTENT</u>
_____	1.1	EMS Systems/Roles and Responsibilities
_____	1.2	The Well-Being of the Paramedic
_____	1.3	Illness and Injury Prevention
_____	1.4	Medical/Legal Issues
_____	1.5	Ethics
_____	1.6	General Principles of Pathophysiology
_____	1.7	Pharmacology
_____	1.8	Venous Access and Medication Administration
_____	1.9	Therapeutic Communications
_____	1.10	Life Span Development
_____	2.1	Airway Management and Ventilation
_____	3.1	History Taking
_____	3.2	Techniques of Physical Examination
_____	3.3	Patient Assessment
_____	3.4	Clinical Decision Making
_____	3.5	Communications
_____	3.6	Documentation
_____	4.1	Trauma Systems and Mechanism of Injury
_____	4.2	Hemorrhage and Shock
_____	4.3	Soft Tissue Trauma
_____	4.4	Burns
_____	4.5	Head and Facial Trauma
_____	4.6	Spinal Trauma
_____	4.7	Thoracic Trauma
_____	4.8	Abdominal Trauma
_____	4.9	Musculoskeletal Trauma

MODULE 1 - PREPARATORY

SECTION 1.1: INTRODUCTION TO ADVANCE PREHOSPITAL CARE

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will understand his or her roles and responsibilities within an EMS system, and how these roles and responsibilities differ from other levels of providers.

SPECIFIC OBJECTIVES

- 1-1.1 Describe the relationship between the paramedic and other members of the allied health professions.
- 1-1.2 Identify the attributes and characteristics of the paramedic.
- 1-1.3 Explain the elements of paramedic education and practice that support its stature as a profession.
- 1-1.4 Define and give examples of the expanded scope of practice for the paramedic.
- 1-1.5 Describe key historical events that influenced the national development of Emergency Medical Services (EMS) systems.
- 1-1.6 Define the various terms associated with the Emergency Medical Services (EMS) systems.
- 1-1.7 Identify national groups important to the development, education, and implementation of EMS.
- 1-1.8 Discuss the role of national associations, the National Registry of EMTs, and the roles of various EMS standard-setting agencies.
- 1-1.9 Identify the standards (components) of an EMS system as defined by the National Highway Traffic Safety Administration.
- 1-1.10 Differentiate among EMS provider levels: First Responder, Emergency Medical Technician-Basic, Emergency Medical Technician-Intermediate, and Emergency Medical Technician-Paramedic.
- 1-1.11 Describe what is meant by "citizen involvement in the EMS system."
- 1-1.12 Describe the role of the EMS physician in providing medical direction.
- 1-1.13 Discuss prehospital and out-of-hospital care as an extension of the physician.
- 1-1.14 Describe the benefits of both on-line and off-line medical direction.
- 1-1.15 Describe the process for the development of local policies and protocols.
- 1-1.16 Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction.
- 1-1.17 Describe the components of continuous quality improvement and analyze its contribution to system improvement, continuing medical education, and research.
- 1-1.18 Describe the importance, basic principles, process of evaluating and interpreting, and benefits of research.
- 1-1.19 Describe the attributes of a paramedic as a health-care professional.
- 1-1.20 Describe the benefits of paramedic continuing education and the importance of maintaining one's paramedic license/certification.
- 1-1.21 List the primary and additional responsibilities of paramedics.
- 1-1.22 Define the role of the paramedic relative to the safety of the crew, the patient, and bystanders.

- 1-1.23 Describe the role of the paramedic in health education activities related to illness and injury prevention.
- 1-1.24 Describe examples of professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
- 1-1.25 Identify the benefits of paramedics teaching in their community.
- 1-1.26 Analyze how the paramedic can benefit the health-care system by supporting primary care for patients in the out-of-hospital setting.
- 1-1.27 Describe how professionalism applies to the paramedic while on and off duty.

SECTION 1.2: THE WELL-BEING OF THE PARAMEDIC

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will understand and value the importance of personal wellness in EMS and serve as a healthy role model for peers.

SPECIFIC OBJECTIVES

- 1-2.1 Discuss the concept of wellness and its benefits.
- 1-2.2 Define the components of wellness.
- 1-2.3 Describe the role of the paramedic in promoting wellness.
- 1-2.4 Discuss how cardiovascular endurance, weight control, muscle strength, and flexibility contribute to physical fitness.
- 1-2.5 Describe the impact of shift work on circadian rhythms.
- 1-2.6 Discuss the contributions that periodic risk assessments and warning sign recognition make to cancer and cardiovascular disease prevention.
- 1-2.7 Differentiate proper from improper body mechanics for lifting and moving patients in emergency and non-emergency situations.
- 1-2.8 Describe the problems that a paramedic might encounter in a hostile situation and the techniques used to manage the situation.
- 1-2.9 Describe the considerations that should be given to using escorts, dealing with adverse environmental conditions, using lights and siren, proceeding through intersections, and parking at an emergency scene.
- 1-2.10 Discuss the concept of "due regard for the safety of all others" while operating an emergency vehicle.
- 1-2.11 Describe the equipment available in a variety of adverse situations for self-protection.
- 1-2.12 Describe the benefits and methods of smoking cessation.
- 1-2.13 Describe the three phases of the stress response.
- 1-2.14 List factors that trigger the stress response.
- 1-2.15 Differentiate between normal/healthy and detrimental physiological and psychological reactions to anxiety and stress.
- 1-2.16 Identify causes of stress in EMS.
- 1-2.17 Describe behavior that is a manifestation of stress in patients and those close to them, and describe how that behavior relates to paramedic stress.
- 1-2.18 Identify and describe the defense mechanisms and management techniques commonly used to deal with stress.

- 1-2.19 Describe the components of critical incident stress management (CISM) and provide example situations where CISM would be beneficial to paramedics.
- 1-2.20 Describe the stages of the grieving process (Kübler-Ross).
- 1-2.21 Describe the unique challenges for paramedics in dealing with themselves, adults, children, and other special populations related to their understanding or experience of death and dying.
- 1-2.22 Describe the body substance isolation steps to take for personal protection from airborne and blood borne pathogens.
- 1-2.23 Given a scenario where equipment and supplies have been exposed to body substances, plan for the proper cleaning, disinfection, and disposal of the items.
- 1-2.24 Given photos of various motor-vehicle collisions, assess scene safety and propose ways to make the scene safer.
- 1-2.25 Given a scenario involving a stressful situation, formulate a strategy to help adapt to the stress.

SECTION 1- 3: ILLNESS AND INJURY PREVENTION

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate the implementation of primary injury prevention activities as an effective way to reduce death, disabilities and health care costs.

SPECIFIC OBJECTIVES

- 1-3.1 Describe the incidence, morbidity and mortality, and the human, environmental, and socioeconomic impact of unintentional and alleged unintentional injuries.
- 1-3.2 Identify health hazards and potential crime areas within the community.
- 1-3.3 Identify local municipal and community resources available for physical, socioeconomic crises.
- 1-3.4 List the general and specific environmental parameters that should be inspected to assess a patient's need for preventive information and direction.
- 1-3.5 Identify the role of EMS in local municipal and community prevention programs.
- 1-3.6 Identify the injury and illness prevention programs that promote safety for all age populations.
- 1-3.7 Identify patient situations where the paramedic can intervene in a preventive manner.
- 1-3.8 Document primary and secondary injury prevention data.

SECTION 1- 4: MEDICAL/LEGAL ASPECTS OF ADVANCED PREHOSPITAL CARE

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will understand the legal issues that impact decisions made in the out-of-hospital environment.

SPECIFIC OBJECTIVES

- 1-4.1 Differentiate between legal, ethical, and moral responsibilities of the paramedic.
- 1-4.2 Describe the basic structure of the legal system and differentiate between civil and criminal law.
- 1-4.3 Differentiate between licensure and certification as they apply to the paramedic.
- 1-4.4 List the specific reportable problems or conditions encountered while providing care and identify to whom the reports are to be made.
- 1-4.5 Define various terms associated with Medical/legal aspects.
- 1-4.6 Discuss the legal implications of medical direction, including off-line medical direction and on-line medical direction, and its relationship to the paramedic's standard of care.
- 1-4.7 Describe the four elements that must be present in order to prove negligence.
- 1-4.8 Explain liability as it applies to emergency medical services, including the physicians providing medical direction and the paramedic's supervision of other care providers.
- 1-4.9 Discuss immunity, including Good Samaritan statutes and governmental immunity, as it applies to the paramedic.
- 1-4.10 Explain the importance and necessity of patient confidentiality and the standards for maintaining patient confidentiality that apply to the paramedic.
- 1-4.11 Differentiate among the types of consent: expressed, informed, implied, and involuntary.
- 1-4.12 Given various scenarios with a patient in need of care, describe the process used to obtain informed or implied consent.
- 1-4.13 Given several refusal-of-care scenarios, demonstrate appropriate patient interaction and documentation techniques.
- 1-4.14 Identify the legal issues involved in the decision not to transport a patient, or to reduce the level of care being provided.
- 1-4.15 Describe how hospitals are selected to receive patients based on patient need and hospital capability and the role of the paramedic in such selection.
- 1-4.16 Differentiate between assault and battery and describe how to avoid committing each.
- 1-4.17 Describe the conditions under which the use of force, including restraint, is acceptable.
- 1-4.18 Explain the purpose of advance directives and how they impact your patient care.
- 1-4.19 Discuss the paramedic's responsibilities relative to resuscitation efforts for patients who are potential organ donors.
- 1-4.20 Describe how a paramedic may preserve evidence at a crime or accident scene.
- 1-4.21 Describe the importance of providing accurate documentation (oral and written) in substantiating an emergency medical services response.
- 1-4.22 Describe the characteristics of a patient care report required to make it an effective legal document.
- 1-4.23 Review several patient care reports and evaluate the content from a legal and liability perspective.
- 1-4.24 Given several scenarios in which a patient is injured while a paramedic is providing care, determine whether the four components of negligence are present.

- 1-4.25 Given several scenarios, describe patient care behaviors that would protect the paramedic from claims of negligence.

SECTION 1.5: ETHICS IN ADVANCED PREHOSPITAL CARE

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will understand the legal issues that impact decisions made in the out-of-hospital environment.

SPECIFIC OBJECTIVES

- 1-5.1 Define ethics and morals.
- 1-5.2 Distinguish between ethical and moral decisions in emergency medical service.
- 1-5.3 Identify the premise that should underlie the paramedic's ethical decisions in out-of-hospital care.
- 1-5.4 Analyze the relationship between the law and ethics in EMS.
- 1-5.5 Compare and contrast the criteria used in allocating scarce EMS resources.
- 1-5.6 Identify issues surrounding advance directives, in making a prehospital resuscitation decision.
- 1-5.7 Describe the criteria necessary to honor an advance directive in your state.
- 1-5.8 Given several narrative circumstances, make decisions in keeping with the ethical principles associated with EMS.

SECTION 1.6: GENERAL PRINCIPLES OF PATHOPHYSIOLOGY

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to apply the general concepts of pathophysiology for the assessment and management of emergency patients.

SPECIFIC OBJECTIVES:

- 1-6.1 List types of tissue.
- 1-6.2 Discuss cellular adaptation, injury, and death.
- 1-6.3 Describe the cellular environment and factors that precipitate disease in the human body.
- 1-6.4 Analyze disease risk.
- 1-6.5 Describe environmental risk factors and combined effects and interaction among risk factors.
- 1-6.6 Discuss familial diseases and associated risk factors.
- 1-6.7 Discuss hypoperfusion
- 1-6.8 Define cardiogenic, hypovolemic, neurogenic, anaphylactic, and septic shock.
- 1-6.9 Describe multiple organ dysfunction syndrome.
- 1-6.10 Define the characteristics of the immune response.
- 1-6.11 Discuss induction of the immune system.
- 1-6.12 Discuss fetal, neonatal, and geriatric immune function.
- 1-6.13 Describe the inflammation response and its systemic manifestations.
- 1-6.14 Discuss the role of mast cells, the plasma protein system, and cellular components as part of the inflammation response.

- 1-6.15 Describe the resolution and repair from inflammation.
- 1-6.16 Discuss the effects of aging on the mechanisms of self-defense.
- 1-6.17 Discuss hypersensitivity.
- 1-6.18 Describe deficiencies in immunity and inflammation.
- 1-6.19 Describe homeostasis as a dynamic steady state.
- 1-6.20 Describe neuroendocrine regulation.
- 1-6.21 Discuss the interrelationships between stress, coping, and illness.

SECTION 1.7: PHARMACOLOGY

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacological management plan.

SPECIFIC OBJECTIVES:

- 1-7.1 Describe important historical trends in pharmacology.
- 1-7.2 Differentiate among the chemical, generic (nonproprietary), official (USP), and trade (proprietary) names of a drug.
- 1-7.3 List the four main sources of drug products.
- 1-7.4 Describe how drugs are classified.
- 1-7.5 List the authoritative sources for drug information.
- 1-7.6 List legislative acts controlling drug use and abuse in the United States.
- 1-7.7 Differentiate among Schedule I, II, III, IV, and V substances and list examples of substances in each schedule.
- 1-7.8 Discuss standardization of drugs.
- 1-7.9 Discuss investigational drugs, including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
- 1-7.10 Discuss special considerations in drug treatment with regard to pregnant, pediatric, and geriatric patients.
- 1-7.11 Discuss the paramedic's responsibilities and scope of management pertinent to the administration of medications.
- 1-7.12 Review the specific anatomy and physiology pertinent to pharmacology.
- 1-7.13 List and describe general properties of drugs.
- 1-7.14 List and describe liquid and solid drug forms.
- 1-7.15 List and differentiate routes of drug administration.
- 1-7.16 Differentiate between enteral and parenteral routes of drug administration.
- 1-7.17 Describe mechanisms of drug action.
- 1-7.18 List and differentiate the phases of drug activity, including the pharmaceutical, pharmacokinetic, and pharmacodynamic phases.
- 1-7.19 Describe the processes called pharmacokinetics, pharmacodynamics, including theories of drug action, drug-response relationship, factors altering drug responses, predictable drug responses, iatrogenic drug responses, and unpredictable adverse drug responses.
- 1-7.20 Differentiate among drug interactions.
- 1-7.21 Discuss considerations for storing and securing medications.
- 1-7.22 List the components of a drug profile by classification.
- 1-7.23 Review the specific anatomy and physiology pertinent to pharmacology with additional attention to autonomic pharmacology.

- 1-7.24 Review autonomic pharmacology.
- 1-7.25 List and describe common prehospital medications, including indications, contraindications, side effects, routes of administration, and dosages.
- 1-7.26 Given several patient scenarios, identify medications likely to be prescribed and those that are likely a part of the prehospital treatment regimen.
- 1-7.27 Given various patient medications, assess the pathophysiology of a patient's condition by identifying classifications of drugs.

SECTION 1-8: VENOUS ACCESS AND MEDICATION ADMINISTRATION

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to safely and precisely access the venous circulation and administer medications.

SPECIFIC OBJECTIVES:

- 1-8.1 Review the specific anatomy and physiology pertinent to medication administration.
- 1-8.2 Describe the indications, equipment needed, technique used, precautions, and general principles for inhalation routes, parenteral routes, percutaneous routes, and enteral routes of medication administration, including gastric tube administration and rectal administration.
- 1-8.3 Describe the indications, contraindications, side effects, dosages, and routes of administration for medications commonly administered by paramedics.
- 1-8.4 Discuss legal aspects affecting medication administration.
- 1-8.5 Discuss the "six rights" of drug administration and correlate them with the principles of medication administration.
- 1-8.6 Differentiate among the percutaneous routes of medication administration.
- 1-8.7 Discuss medical asepsis and the differences between clean and sterile techniques.
- 1-8.8 Describe uses of antiseptics and disinfectants.
- 1-8.9 Describe the use of body substance isolation (BSI) procedures when administering a medication.
- 1-8.10 Describe disposal of contaminated items and sharps.
- 1-8.11 Synthesize a pharmacological management plan including medication administration.
- 1-8.12 Review the specific anatomy and physiology pertinent to medication administration.
- 1-8.13 Describe the indications, equipment needed, technique used, precautions, and general principles for peripheral venous or external jugular cannulation, intraosseous needle placement and infusion, and obtaining a blood sample.
- 1-8.14 Review mathematical equivalents.
- 1-8.15 Differentiate temperature readings between the centigrade and Fahrenheit scales.
- 1-8.16 Discuss formulas as a basis for performing drug calculations.
- 1-8.17 Describe how to perform mathematical conversions from the household system to the metric system.

SECTION 1-9: THERAPEUTIC COMMUNICATION

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate the principles of therapeutic communication to effectively communicate with any patient while providing care.

SPECIFIC OBJECTIVES

- 1-9.1 Define communication.
- 1-9.2 Identify internal and external factors that affect a patient/bystander interview.
- 1-9.3 Identify strategies for developing rapport with the patient.
- 1-9.4 Provide examples of open-ended and closed, or direct, questions.
- 1-9.5 Discuss common errors made when interviewing patients.
- 1-9.6 Identify the nonverbal skills used in patient interviewing.
- 1-9.7 Summarize methods used to assess mental status based on interview techniques.
- 1-9.8 Discuss strategies for interviewing a patient who is not motivated to talk.
- 1-9.9 Differentiate strategies used when interviewing a patient who is hostile compared to one who is cooperative.
- 1-9.10 Summarize the developmental considerations of various age groups that influence patient interviewing.
- 1-9.11 Define the unique interviewing techniques for patients with special needs.
- 1-9.12 Discuss interviewing considerations used in cross-cultural communications.
- 1-9.13 Given several preprogrammed simulated patients, provide a patient interview using therapeutic communication.

SECTION 1-10: LIFE SPAN DEVELOPMENT

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate the physiological, psychological, and sociological changes throughout human development with assessment and communication strategies for patients of all ages.

SPECIFIC OBJECTIVES:

- 1-10.1 Compare and contrast the physiological and psychosocial characteristics of the life-span development stages for Infant, Toddler, Preschooler, School-aged, Adolescent, Early adult, Middle-aged adult, and Late-aged adult.

MODULE 2: AIRWAY

SECTION 2.1: AIRWAY MANAGEMENT AND VENTILATION

GENERAL OBJECTIVE

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.

SPECIFIC OBJECTIVES:

- 2-1.1 Explain the primary objective of airway maintenance.
- 2-1.2 Identify commonly neglected prehospital skills related to the airway.
- 2-1.3 Describe the anatomy and function of the upper and lower airway structures in detail, including landmarks for direct laryngoscopy.
- 2-1.4 Explain the differences between adult and pediatric airway anatomy.
- 2-1.5 Discuss the following functions of the respiratory system:
- 2-1.6 Describe oxygen transport in the blood and factors that affect it.
- 2-1.7 Describe carbon dioxide transport in the blood and factors that affect it.
- 2-1.8 Describe the voluntary and involuntary regulation of respiration.
- 2-1.9 List the concentration of gases which comprise atmospheric air.
- 2-1.10 Describe the various measures of respiratory function, and give the average normal values for each, including the normal respiratory rates for the adult, child, and infant.
- 2-1.11 Describe assessment of the airway and the respiratory system.
- 2-1.12 Describe the modified forms of respiration and list the factors that affect respiratory rate and depth.
- 2-1.13 Discuss the methods for measuring oxygen and carbon dioxide in the blood and their prehospital use.
- 2-1.14 Define and explain the implications of partial airway obstruction with good and poor air exchange and complete airway obstruction.
- 2-1.15 Describe the common causes of upper airway obstruction.
- 2-1.16 Describe complete airway obstruction maneuvers.
- 2-1.17 Describe causes of respiratory distress.
- 2-1.18 Explain the risk of infection to EMS providers associated with airway management and ventilation.
- 2-1.19 Describe manual airway maneuvers.
- 2-1.20 Discuss the indications, contraindications, advantages, disadvantages, complications, special considerations, equipment, and techniques of various procedures related to airway management.
- 2-1.21 Compare the ventilation techniques used for an adult patient to those used for pediatric patients, and describe special considerations in airway management and ventilation for the pediatric patient.
- 2-1.22 Identify types of oxygen cylinders and pressure regulators, and explain safety considerations of oxygen storage and delivery, including steps for delivering oxygen from a cylinder and regulator.
- 2-1.23 Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for the various supplemental oxygen delivery devices:

- 2-1.24 Describe the use, advantages, and disadvantages of an oxygen humidifier.
- 2-1.25 Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for intubation procedures.
- 2-1.26 Describe the use of cricoid pressure during intubation.
- 2-1.27 Discuss the precautions that should be taken when intubating the trauma patient.
- 2-1.28 Discuss agents used for sedation and rapid sequence intubation.
- 2-1.29 Discuss methods to confirm correct placement of the endotracheal tube.
- 2-1.30 Define the following: gag reflex, atelectasis, FiO₂, hypoxia, hypoxemia, pulsus paradoxus, gastric distention, Sellick's maneuver, and laryngectomy.

MODULE 3: PATIENT ASSESSMENT

SECTION 3.1: HISTORY TAKING

At the completion of this unit, the paramedic student will be able to use the appropriate techniques to obtain a medical history from a patient.

SPECIFIC OBJECTIVES

- 3-1.1 Describe the techniques of history taking.
- 3-1.2 Discuss the importance of using open- and closed-ended questions.
- 3-1.3 Describe the use of, and differentiate between, facilitation, reflection, clarification, empathetic responses, confrontation, and interpretation.
- 3-1.4 Describe the structure, purpose, and how to obtain a comprehensive health history.
- 3-1.5 List the components of a comprehensive history of an adult patient.

SECTION 3.2: TECHNIQUES OF PHYSICAL EXAMINATION

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to explain the pathophysiological significance of physical exam findings.

SPECIFIC OBJECTIVES

- 3-2.1 Define and describe the techniques of inspection, palpation, percussion, and auscultation.
- 3-2.2 Describe the evaluation of mental status.
- 3-2.3 Evaluate the importance of a general survey.
- 3-2.4 Describe the examination of the various body regions, differentiate between normal and abnormal findings, and define the significance of abnormal findings.
- 3-2.5 Describe the assessment of visual acuity.
- 3-2.6 Explain the rationale for the use of an ophthalmoscope and otoscope.
- 3-2.7 Describe the survey of respiration.
- 3-2.8 Describe percussion of the chest.
- 3-2.9 Differentiate the percussion notes and their characteristics.

- 3-2.10 Describe special examination techniques related to the assessment of the chest.
- 3-2.11 Describe the auscultation of the chest, heart, and abdomen.
- 3-2.12 Distinguish between normal and abnormal auscultation findings of the chest, heart, and abdomen and explain their significance.
- 3-2.13 Describe special techniques of the cardiovascular examination.
- 3-2.14 Describe the general guidelines of recording examination information.
- 3-2.15 Discuss the examination considerations for an infant or child.

SECTION 3.3: PATIENT ASSESSMENT

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate the principles of history taking and techniques of physical exam to perform a patient assessment.

SPECIFIC OBJECTIVES:

- 3-3.1 Recognize hazards/potential hazards associated with the medical and trauma scene.
- 3-3.2 Identify unsafe scenes and describe methods for making them safe.
- 3-3.3 Discuss common mechanisms of injury/nature of illness.
- 3-3.4 Predict patterns of injury based on mechanism of injury.
- 3-3.5 Discuss the reason for identifying the total number of patients at the scene.
- 3-3.6 Organize the management of a scene following size-up.
- 3-3.7 Explain the reasons for identifying the need for additional help or assistance during the scene size-up.
- 3-3.8 Summarize the reasons for forming a general impression of the patient.
- 3-3.9 Discuss methods of assessing mental status/levels of consciousness in the adult, infant, and child patient.
- 3-3.10 Discuss methods of assessing and securing the airway in the adult, child, and infant patient.
- 3-3.11 State reasons for cervical spine management for the trauma patient.
- 3-3.12 Analyze a scene to determine if spinal precautions are required.
- 3-3.13 Describe methods for assessing respiration in the adult, child, and infant patient.
- 3-3.14 Describe the methods used to locate and assess a pulse in an adult, child, and infant patient.
- 3-3.15 Discuss the need for assessing the patient for external bleeding.
- 3-3.16 Describe normal and abnormal findings when assessing skin color, temperature, and condition.
- 3-3.17 Explain the reason and process for prioritizing a patient for care and transport.
- 3-3.18 Use the findings of the initial assessment to determine the patient's perfusion status.
- 3-3.19 Describe orthostatic vital signs and evaluate their usefulness in assessing a patient in shock.
- 3-3.20 Describe the medical patient physical examination.
- 3-3.21 Differentiate between the assessment for an unresponsive, altered mental status, and alert medical patients.
- 3-3.22 Discuss the reasons for reconsidering the mechanism of injury.
- 3-3.23 Recite examples and explain why patients should receive a rapid trauma assessment.

- 3-3.24 Describe the trauma patient physical examination.
- 3-3.25 Describe the elements of the rapid trauma assessment and discuss their evaluation.
- 3-3.26 Identify cases when the rapid assessment is suspended to provide patient care.
- 3-3.27 Discuss the reason for performing a focused history and physical exam.
- 3-3.28 Describe when and why a detailed physical examination is necessary.
- 3-3.29 Discuss the components of the detailed physical examination.
- 3-3.30 Explain what additional care is provided while performing the detailed physical exam.
- 3-3.31 Distinguish between the detailed physical exam that is performed on a trauma patient and that of the medical patient.
- 3-3.32 Differentiate between patients requiring a detailed physical exam and those who do not.
- 3-3.33 Discuss the rationale for repeating the initial assessment as part of the ongoing assessment.
- 3-3.34 Describe the components of the ongoing assessment.
- 3-3.35 Describe trending of assessment components.
- 3-3.36 Discuss medical identification devices/systems.
- 3-3.37 Given several preprogrammed and moulaged medical and trauma patients, provide the appropriate scene survey, initial assessment, focused assessment, detailed assessment, and ongoing assessments.

SECTION 3.4: CLINICAL DECISION MAKING

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to apply a process of clinical decision making to use the assessment findings to help form a field impression.

SPECIFIC OBJECTIVES

- 3-4.1 Compare the factors influencing medical care in the out-of-hospital environment to other medical settings.
- 3-4.2 Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
- 3-4.3 Evaluate the benefits and shortfalls of protocols, standing orders, and patient care algorithms.
- 3-4.4 Define the components, stages, and sequences of the critical thinking process for paramedics.
- 3-4.5 Apply the fundamental elements of critical thinking for paramedics.
- 3-4.6 Describe the effects of the "fight or flight" response and its positive and negative effects on a paramedic's decision making.
- 3-4.7 Summarize the "six Rs" of putting it all together: **Read** the patient, **Read** the scene, **React**, **Reevaluate**, **Revise** the management plan, **Review** performance.
- 3-4.8 Given several preprogrammed and moulaged trauma and medical patients, demonstrate clinical decision making.

SECTION 3.5: COMMUNICATION

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to follow an accepted format for dissemination of patient information in verbal form, either in person or over the radio.

SPECIFIC OBJECTIVES

- 3-5.1 Identify the role and importance of verbal, written, and electronic communications in the provision of EMS.
- 3-5.2 Describe the phases of communications necessary to complete a typical EMS response.
- 3-5.3 List factors that impede and enhance effective verbal and written communications.
- 3-5.4 Explain the value of data collection during an EMS response.
- 3-5.5 Recognize the legal status of verbal, written and electronic communications related to an EMS response.
- 3-5.6 Identify current technology used to collect and exchange patient and/or scene information electronically.
- 3-5.7 Identify the various components of the EMS communications system and describe their function and use.
- 3-5.8 Identify and differentiate among the various communications systems.
- 3-5.9 Describe the functions and responsibilities of the Federal Communications Commission.
- 3-5.10 Describe the role of emergency medical dispatch and the importance of prearrival instructions in a typical EMS response.
- 3-5.11 List appropriate caller information gathered by the emergency medical dispatcher.
- 3-5.12 Describe the structure and importance of verbal patient information communication to the hospital and medical direction.
- 3-5.13 Diagram a basic communications system.
- 3-5.14 Given several narrative patient scenarios, organize a verbal radio report for electronic transmission to medical direction.

SECTION 3.6: DOCUMENTATION

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to effectively document the essential elements of patient assessment, care and transport.

SPECIFIC OBJECTIVES

- 3-6.1 Identify the general principles regarding the importance of EMS documentation
- 3-6.2 Identify and properly use medical terminology, medical abbreviations, and acronyms.
- 3-6.3 Explain the role of documentation in agency reimbursement.
- 3-6.4 Identify and eliminate extraneous or nonprofessional information.
- 3-6.5 Describe the differences between subjective and objective elements of documentation.
- 3-6.6 Evaluate a finished document for errors and omissions and proper use and spelling of abbreviations and acronyms.
- 3-6.7 Evaluate the confidential nature of an EMS report.
- 3-6.8 Describe the potential consequences of illegible, incomplete, or inaccurate documentation.

- 3-6.9 Describe the special documentation considerations concerning patient refusal of care and/or transport.
- 3-6.10 Demonstrate how to properly record direct patient or bystander comments.
- 3-6.11 Describe the special considerations concerning mass casualty incident documentation.
- 3-6.12 Demonstrate proper document revision and correction.
- 3-6.13 Given a prehospital care report form and a narrative patient care scenario, record all pertinent administrative information using a consistent format, identify and record the pertinent, reportable clinical data for each patient, correct errors and omissions, using proper procedures, and note and record "pertinent negative" clinical findings.

MODULE 4: TRAUMA EMERGENCIES

SECTION 4.1: TRAUMA SYSTEMS AND MECHANISM OF INJURY

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate the principles or kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury.

SPECIFIC OBJECTIVES:

- 4-1.1 Describe the prevalence and significance of trauma.
- 4-1.2 List the components of a comprehensive trauma system.
- 4-1.3 Identify the characteristics of community, area, and regional trauma centers.
- 4-1.4 Identify the trauma triage criteria and apply them to narrative descriptions of trauma patients.
- 4-1.5 Describe how trauma emergencies differ from medical emergencies in the scene size-up, assessment, prehospital emergency care, and transport.
- 4-1.6 Explain the "Golden Hour" concept, and describe how it applies to prehospital emergency medical service.
- 4-1.7 Explain the value of air medical service in trauma patient care and transportation.
- 4-1.8 Identify, and explain by example, the laws of inertia and conservation of energy.
- 4-1.9 Define kinetic energy and force as they relate to trauma.
- 4-1.10 Compare and contrast the types of vehicle impacts and their expected injuries.
- 4-1.11 Discuss the benefits of auto restraint and motorcycle helmet use.
- 4-1.12 Describe the mechanisms of injury associated with falls, crush injuries, and sports injuries.
- 4-1.13 Identify the common blast injuries and any special considerations regarding their assessment and proper care.
- 4-1.14 Identify and explain any special assessment and care considerations for patients with blunt trauma.
- 4-1.15 Given several scenarios involving simulated blunt trauma patients, provide the appropriate scene size-up, initial assessment, focused assessment, detailed assessment, and then provide appropriate patient care and transportation.
- 4-1.16 Explain the energy exchange process between a penetrating object or projectile and the object it strikes.

- 4-1.17 Determine the effects that profile, yaw, tumble, expansion, and fragmentation have on projectile energy transfer.
- 4-1.18 Describe elements of the ballistic injury process including direct injury, cavitation, temporary cavity, permanent cavity, and zone of injury.
- 4-1.19 Identify the relative effects a penetrating object or projectile has when striking various body regions and tissues.
- 4-1.20 Anticipate the injury types and the extent of damage associated with high-velocity/high-energy projectiles, such as rifle bullets; with medium-energy, medium-velocity projectiles such as handgun and shotgun bullets, slugs, or pellets; and with low-energy, low-velocity penetrating objects, such as knives and arrows.
- 4-1.21 Identify important elements of the scene size-up associated with shootings or stabbings.
- 4-1.22 Identify and explain any special assessment and care considerations for patients with penetrating trauma.
- 4-1.23 Presented with several preprogrammed situations involving simulated penetrating trauma patients, provide the appropriate scene size-up, initial assessment, focused history and physical exam, detailed physical exam, and ongoing assessment, and then provide appropriate patient care and transportation.

SECTION 4.2: HEMORRHAGE AND SHOCK

GENERAL OBJECTIVE:

At the completion of this unit, the paramedic student will be able to integrate the principles or kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury.

SPECIFIC OBJECTIVES:

- 4-2.1 Describe the epidemiology, including the morbidity/mortality and prevention strategies, for shock and hemorrhage.
- 4-2.2 Discuss the anatomy, physiology, and pathophysiology of the cardiovascular system as they apply to hemorrhage and shock.
- 4-2.3 Define shock based on aerobic and anaerobic metabolism.
- 4-2.4 Describe the body's physiological response to changes in blood volume, blood pressure, and perfusion.
- 4-2.5 Describe the effects of decreased perfusion at the capillary level.
- 4-2.6 Discuss the cellular ischemic, capillary stagnation, and capillary washout phases related to hemorrhagic shock.
- 4-2.7 Discuss the various types and degrees of shock and hemorrhage
- 4-2.8 Predict shock and hemorrhage based on mechanism of injury.
- 4-2.9 Identify the need for intervention and transport of the patient with hemorrhage or shock.
- 4-2.10 Discuss the assessment findings and management of internal and external hemorrhage and shock.
- 4-2.11 Differentiate between the administration rate and volume of IV fluid in patients with controlled versus uncontrolled hemorrhage.
- 4-2.12 Relate pulse pressure and orthostatic vital sign changes to perfusion status

- 4-2.13 Define and differentiate between compensated and decompensated hemorrhagic shock.
- 4-2.14 Discuss the pathophysiological changes, assessment findings, and management associated with compensated and decompensated shock.
- 4-2.15 Identify the need for intervention and transport of patients with compensated and decompensated shock.
- 4-2.16 Differentiate among normotensive, hypotensive, or profoundly hypotensive patients.
- 4-2.17 Describe differences in administration of intravenous fluid in the normotensive, hypotensive, or profoundly hypotensive patients.
- 4-2.18 Discuss the physiologic changes associated with application and inflation of the pneumatic anti-shock garment (PASG).
- 4-2.19 Discuss the indications and contraindications for the application and inflation of the PASG.
- 4-2.20 Given several pre-programmed and moulaged hemorrhage and shock patients, provide the appropriate scene size-up, initial assessment, rapid trauma assessment or focused history and physical examination, detailed physical examination, appropriate care and transport, and ongoing assessment
- 4-2.21 Identify the morbidity and mortality associated with blunt and penetrating trauma.
- 4-2.22 Explain the concept, value, and elements of injury prevention programs.
- 4-2.23 Describe assessment of seriously and non-seriously injured trauma patients.
- 4-2.24 Identify the aspects of assessment performed during the scene size-up, initial assessment, rapid trauma assessment, focused assessment and history, detailed physical exam, and ongoing assessment for the trauma patient.
- 4-2.25 Identify the importance of rapid recognition and treatment of shock in trauma patients.
- 4-2.26 Identify and explain the value of the components of shock trauma resuscitation.
- 4-2.27 Describe the special needs and assessment considerations when treating pediatric and geriatric trauma patients.
- 4-2.28 Explain the importance of good communications with other personnel within the emergency medical services system.
- 4-2.29 Identify the benefits of helicopter use, and list the criteria for establishing a landing zone.
- 4-2.30 Describe the preparation of a patient for air medical transport.
- 4-2.31 Identify the value of trauma care research and the how it has impacted prehospital skills.

SECTION 4.3: SOFT TISSUE TRAUMA

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with soft tissue trauma.

SPECIFIC OBJECTIVES

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

- 4-3.1 Describe the incidence, morbidity, and mortality of soft-tissue injuries.
- 4-3.2 Describe the anatomy and physiology of the integumentary system, including:
- 4-3.3 Identify the skin tension lines of the body.
- 4-3.4 Predict soft-tissue injuries based on mechanism of injury.
- 4-3.5 Discuss blunt and penetrating trauma.

- 4-3.6 Discuss the pathophysiology of soft-tissue injuries.
- 4-3.7 Differentiate among the various types of soft-tissue injuries:
- 4-3.8 Discuss the assessment and management of open and closed soft-tissue injuries.
- 4-3.9 Discuss the incidence, morbidity, and mortality of crush injuries.
- 4-3.10 Define Crush injury, Crush syndrome, and Compartment syndrome
- 4-3.11 Discuss the mechanisms of injury, assessment findings, and management of crush injuries.
- 4-3.12 Discuss the effects of reperfusion and rhabdomyolysis on the body.
- 4-3.13 Discuss the pathophysiology, assessment, and care of hemorrhage associated with soft-tissue injuries.
- 4-3.14 Describe and identify the indications for and application of the various dressings and bandages:
- 4-3.15 Predict the possible complications of an improperly applied dressing or bandage.
- 4-3.16 Discuss the process of wound healing.
- 4-3.17 Discuss the assessment and management of wound healing.
- 4-3.18 Discuss the pathophysiology, assessment, and management of wound infection.
- 4-3.19 Formulate treatment priorities for patients with soft-tissue injuries.
- 4-3.20 Given several scenarios involving moulaged soft-tissue injury patients, provide the appropriate assessment and field management.

SECTION 4.4: BURNS

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the management plan for the patient with a burn injury.

SPECIFIC OBJECTIVES

- 4-4.1 Describe the anatomy and physiology of the skin and remaining human anatomy as they pertain to thermal burn injuries.
- 4-4.2 Describe the epidemiology, including incidence, mortality/ morbidity, and risk factors for thermal burn injuries as well as strategies to prevent such injuries.
- 4-4.3 Describe the local and systemic complications of a thermal burn injury.
- 4-4.4 Identify and describe the depth classifications of burn injuries, including superficial burns, partial-thickness burns, and full-thickness burns.
- 4-4.5 Describe and apply the "rule of nines," and the "rule of palms" methods for determining body surface area percentage of a burn injury.
- 4-4.6 Identify and describe the severity of a burn including a minor burn, a moderate burn, and a critical burn.
- 4-4.7 Describe the effects age and pre-existing conditions have on burn severity and a patient's prognosis.
- 4-4.8 Discuss complications of burn injuries caused by trauma, blast injuries, airway compromise, respiratory compromise, and child abuse.
- 4-4.9 Describe thermal burn management including considerations for airway and ventilation, circulation, pharmacological and non-pharmacological measures, transport decisions, and psychological support/communication strategies.

- 4-4.10 Describe special considerations for a pediatric patient with a burn injury and describe the criteria for determining pediatric burn severity.
- 4-4.11 Describe the specific epidemiologies, mechanisms of injury, pathophysiologies, and severity assessments for inhalation, chemical, and electrical burn injuries and for radiation exposure.
- 4-4.12 Discuss special considerations that impact the assessment, management, and prognosis of patients with inhalation, chemical, and electrical burn injuries and with exposure to radiation.
- 4-4.13 Differentiate between supraglottic and infraglottic inhalation burn injuries.
- 4-4.14 Describe the special considerations for a chemical burn injury to the eye.
- 4-4.15 Given several scenarios involving thermal, inhalation, electrical, and chemical burn injury and radiation exposure patients, provide the appropriate assessment and field management.

SECTION 4.5: HEAD AND FACIAL TRAUMA

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the trauma patient with a suspected head injury.

SPECIFIC OBJECTIVES

- 4-5.1 Describe the incidence, morbidity, and mortality of head, facial and neck injuries.
- 4-5.2 Explain head and facial anatomy and physiology as they relate to head and facial injuries.
- 4-5.3 Predict head, facial, and other related injuries based on mechanism of injury.
- 4-5.4 Differentiate between various types of facial injuries.
- 4-5.5 Differentiate between facial injuries based on the assessment and history.
- 4-5.6 Explain the pathophysiology, assessment, and management for patients with eye, ear, nose, throat, and mouth injuries.
- 4-5.7 Explain anatomy and relate physiology of the CNS to head injuries.
- 4-5.8 Distinguish between facial, head, and brain injury.
- 4-5.9 Explain the pathophysiology of head/ brain injuries.
- 4-5.10 Explain the concept of increasing intracranial pressure (ICP).
- 4-5.11 Explain the effect of increased and decreased carbon dioxide on ICP.
- 4-5.12 Define and explain the process involved with each of the levels of increasing ICP.
- 4-5.13 Relate assessment findings associated with head/brain injuries to the pathophysiologic process.
- 4-5.14 Classify head injuries (mild, moderate, severe) according to assessment findings.
- 4-5.15 Identify the need for rapid intervention and transport of the patient with a head/brain injury.
- 4-5.16 Describe and explain the general management of the head/brain injury patient, including pharmacological and non-pharmacological treatment.
- 4-5.17 Analyze the relationship between carbon dioxide concentration in the blood and management of the airway in the head/brain injured patient.
- 4-5.18 Explain the pathophysiology, assessment, and management of a patient with various head, facial and neck trauma.
- 4-5.19 Develop a management plan for the removal of a helmet for a head-injured patient.

- 4-5.20 Differentiate between the types of head/brain injuries based on the assessment and history.
- 4-5.21 Given several preprogrammed and moulaged head and facial injury patients, provide the appropriate scene size-up, initial assessment, focused assessment, detailed assessment, and then provide appropriate patient care and transportation.

SECTION 4.6: SPINAL TRAUMA

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the trauma patient with a suspected spinal injury.

SPECIFIC OBJECTIVES

- 4-6.1 Describe the incidence, morbidity, and mortality of spinal injuries in the trauma patient.
- 4-6.2 Describe the anatomy and physiology of structures related to spinal injuries.
- 4-6.3 Predict spinal injuries based on mechanism of injury.
- 4-6.4 Describe the pathophysiology of spinal injuries.
- 4-6.5 Identify the need for rapid intervention and transport of the patient with spinal injuries.
- 4-6.6 Describe the pathophysiology of traumatic spinal injury.
- 4-6.7 Describe the assessment findings associated with and management for traumatic spinal injuries.
- 4-6.8 Describe the various types of helmets and their purposes.
- 4-6.9 Relate the priorities of care to factors determining the need for helmet removal in various field situations including sports related incidents.
- 4-6.10 Given several preprogrammed and moulaged spinal injury patients, provide the appropriate scene size-up, initial assessment, rapid trauma assessment, detailed assessment, and then provide the appropriate patient care and transport.

SECTION 4.7: THORACIC TRAUMA

GENERAL OBJECTIVE

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

SPECIFIC OBJECTIVES

- 4-7.1 Describe the incidence, morbidity, and mortality of thoracic injuries in the trauma patient.
- 4-7.2 Discuss the anatomy and physiology of the organs and structures related to thoracic injuries.
- 4-7.3 Predict thoracic injuries based on mechanism of injury.
- 4-7.4 Discuss the pathophysiology of, assessment findings with, and the management and need for rapid intervention and transport of the patient with chest wall injuries.
- 4-7.5 Discuss the pathophysiology of, assessment findings with, and management and need for rapid intervention and transport of the patient with injury to the lung.

- 4-7.6 Discuss the pathophysiology of, findings of assessment with, and management and need for rapid intervention and transport of the patient with myocardial injuries.
- 4-7.7 Discuss the pathophysiology of, findings of assessment with, and management and need for rapid intervention and transport of the patient with vascular injuries.
- 4-7.8 Discuss the pathophysiology of, findings of assessment with, and management and need for rapid intervention and transport of patients with diaphragmatic, esophageal, and tracheobronchial injuries.
- 4-7.9 Discuss the pathophysiology of, findings of assessment with, and management and need for rapid intervention and transport of the patient with traumatic asphyxia.
- 4-7.10 Differentiate between thoracic injuries based on the assessment and history.
- 4-7.11 Given several preprogrammed and mouldaged thoracic trauma patients, provide the appropriate scene size-up, initial assessment, focused assessment, detailed assessment and the proper patient care and transport.

SECTION 4.8: ABDOMINAL TRAUMA

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for a patient with a suspected abdominal trauma.

SPECIFIC OBJECTIVES

- 4-8.1 Describe the epidemiology, including morbidity/mortality, for patients with abdominal trauma as well as prevention strategies to avoid the injuries.
- 4-8.2 Apply the epidemiologic principles to develop prevention strategies for abdominal injuries.
- 4-8.3 Describe the anatomy and physiology of organs and structures related to abdominal injuries.
- 4-8.4 Predict abdominal injuries based on blunt and penetrating mechanisms of injury.
- 4-8.5 Describe open and closed abdominal injuries.
- 4-8.6 Identify the need for rapid intervention and transport of the patient with abdominal injuries based on assessment findings.
- 4-8.7 Explain the pathophysiology of solid and hollow organ injuries, abdominal vascular injuries, pelvic fractures, and other abdominal injuries.
- 4-8.8 Describe the assessment findings associated with and the management of solid and hollow organ injuries, abdominal vascular injuries, pelvic fractures, and other abdominal injuries.
- 4-8.9 Differentiate between abdominal injuries based on the assessment and history.
- 4-8.10 Given several pre-programmed and mouldaged patients with simulated abdominal injuries, provide the appropriate assessment, care, and transport.

SECTION 4.9: MUSCULOSKELETAL TRAUMA

GENERAL OBJECTIVE

At the completion of this unit, the paramedic student will understand his or her roles and responsibilities within an EMS system, and how these roles and responsibilities differ from other levels of providers.

SPECIFIC OBJECTIVES

- 4-9.1 Describe the incidence, morbidity, and mortality of musculoskeletal injuries.
- 4-9.2 Discuss the anatomy and physiology of the muscular and skeletal systems.
- 4-9.3 Predict injuries based on the mechanism of injury.
- 4-9.4 Discuss the types of musculoskeletal injuries.
- 4-9.5 Describe the six "Ps" of musculoskeletal injury assessment.
- 4-9.6 List the primary signs and symptoms of extremity trauma.
- 4-9.7 List other signs and symptoms that can indicate less obvious extremity injury.
- 4-9.8 Discuss the need for assessment of pulses, motor function, and sensation before and after splinting.
- 4-9.9 Identify the circumstances requiring rapid intervention and transport when dealing with musculoskeletal injuries.
- 4-9.10 Discuss the general guidelines for splinting.
- 4-9.11 Explain the benefits of the application of cold and heat for musculoskeletal injuries.
- 4-9.12 Describe age-associated changes in the bones.
- 4-9.13 Discuss the pathophysiology, assessment findings, and management of open and closed fractures.
- 4-9.14 Discuss the relationship between the volume of hemorrhage and open or closed fractures.
- 4-9.15 Discuss the indications and contraindications for use of the pneumatic anti-shock garment (PASG) in the management of fractures.
- 4-9.16 Describe the special considerations involved in femur fracture management.
- 4-9.17 Discuss the pathophysiology, assessment findings, and management of dislocations.
- 4-9.18 Discuss the out-of-hospital management of dislocations/fractures, including splinting and realignment.
- 4-9.19 Explain the importance of manipulating a knee dislocation/fracture with an absent distal pulse. 20. Describe the procedure for reduction of a shoulder, finger, or ankle dislocation/fracture.
- 4-9.20 Discuss the pathophysiology, assessment findings, and management of sprains, strains, and tendon injuries.
- 4-9.21 Differentiate between musculoskeletal injuries based on the assessment findings and history.
- 4-9.22 Given several preprogrammed and moulaged musculoskeletal injury patients, provide the appropriate scene size-up, initial assessment, rapid trauma assessment or focused exam and history, and then provide the appropriate patient care and transport.