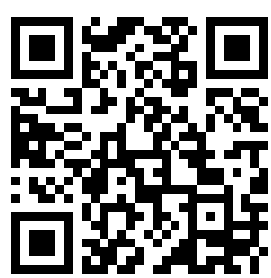

Dunlap & Associates, Inc.
Basic training program for
emergency medical technician
ambulance.

Basic Training Program for
Emergency Medical Technician-Ambulance

INSTRUCTOR'S LESSON PLANS

February 1970

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY SAFETY BUREAU

Prepared by Dunlap & Associates, Inc., Darien, Conn. 06820
for the National Highway Safety Bureau under contract FH-11-6967 entitled
Emergency Medical Service--Entrance Level Training

Dunlap and Associates, Inc., Stamford, Conn.

Basic Training Program for Emergency Medical Technician-Ambulance

INSTRUCTOR'S LESSON PLANS

—

February 1970

—

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $2.50

U.S. DEPARTMENT OF TRANSPORTATION / NATIONAL HIGHWAY SAFETY BUREAU

FOREWORD

A number of government and medical organizations in the United States have recognized the need for training ambulance personnel in emergency medical care. Under the provisions of the Highway Safety Act of 1966, the National Highway Safety Bureau published "Highway Safety Program Standard No. 11--Emergency Medical Services." Based primarily on guidelines and recommendations of the National Academy of Sciences' Committee on Emergency Medical Services, "Standard No. 11" recommends that all ambulances be equipped with certain life saving equipment and manned by at least two persons trained in specified areas of emergency care. The "Standard" clearly identifies the responsibility of ambulance services to provide more than transportation alone. Specifically, these services should furnish skilled emergency medical care to victims of all injuries and medical emergencies. Further, the "Standard" identifies the need to establish an emergency care career pattern which provides attractive compensation, prestige, and recognition commensurate with the services provided by ambulance personnel.

To assist the States in implementing the "Standard," the National Highway Safety Bureau considers it essential that the States be provided guidelines on programs of instruction for ambulance personnel. The development of a basic training course is a necessary first step in an extended program to increase the competence and professionalism of all ambulance personnel. The objective of this course is to develop or upgrade the skill levels of all individuals involved in providing emergency medical care services. The course encompasses the knowledge and skills required to perform all emergency care procedures short of those rendered by physicians or by paramedical personnel under the direct supervision of a physician.

The training program described herein was prepared for the National Highway Safety Bureau, U.S. Department of Transportation. Additional documents produced as part of this project include the "Course Guide" and "Course Coordinator Orientation Program," and a final report containing program "Concepts and Recommendations." All documents were prepared by Mr. Joseph T. Fucigna, Senior Vice President of Dunlap and Associates, Inc., and Dr. Richard D. Pepler and Miss Arlene Cleven of the Corporation's Behavioral Sciences Division. Serving as consultants to Dunlap and Associates, Inc., were:

- Dr. Walter A. Hoyt, Jr., M. D., Chairman of the Committee on Injuries of the American Academy of Orthopaedic Surgeons.
- Dr. Joseph D. Farrington, M. D., Chairman, Subcommittee on Transportation of the Injured, Committee on Trauma, American College of Surgeons.
- Mr. David H. Slayback, Executive Director, International Rescue and First Aid Association.

In addition, many other organizations and individuals contributed to the development and preparation of these documents. Safety manpower specialist, Manpower Development Division, Miss Janet Sprickman, National Highway Safety Bureau, provided valuable assistance as contract manager and as a general resource person throughout this project. The contributions of Mr. Fred Lewis, Division of Emergency Medical Programs, National Highway Safety Bureau, were vital to the success of our work.

- The American Academy of Orthopaedic Surgeons provided prepublication chapters of the Academy's new text on emergency medical care to Dunlap and Associates, Inc., for use in preparing the detailed lesson plans.
- The Norwalk Hospital Emergency Department and the Parent New Haven Ambulance Service, owned and operated by Mr. Raymond Parent, permitted the project staff to ride their ambulances as observers and discuss ambulance service tasks with their crews.
- Col. Charles C. Pixley, M. D., Commanding Officer, and the staff of the U. S. Army Medical Training Center, Fort Sam Houston, San Antonio, Texas, cooperated by providing insights and knowledge in the training of paramedical personnel.
- The Norwalk Hospital, Norwalk, Connecticut, provided the facilities, equipment, and staff necessary to pilot test the course.

The assistance of these individuals and organizations is greatly appreciated and hereby acknowledged.

We are particularly grateful to and wish to thank Dr. Edward A. Rem, Chief of the Norwalk Hospital Emergency Department who served as course coordinator as well as an instructor during the pilot test. Other instructor

ncluded Drs. Gabriel Saviano, Harry Bradley, Louis Simon, W. H. N. ohnson, Jr., John Sacco, Arthur Brovender, William Kessler, and Edward J. Flynn, all of the Norwalk Hospital; Mr. David J. Panaia, Chairman of the Board of Governors, National Ambulance and Medical ervices Association; and Mr. Philip C. Whitney, International Rescue nd First Aid Association. The participation of all instructors and tudents in the pilot program is gratefully appreciated.

TABLE OF CONTENTS

TABLE OF CONTENTS - cont'd

TABLE OF CONTENTS - cont'd

Basic Training Program for

EMERGENCY MEDICAL TECHNICIAN--AMBULANCE

This document has been prepared to aid the instructor in conducting a basic training course for Emergency Medical Technicians (EMT's) performing as attendants and drivers on ambulances. It contains detailed lesson plans for the course, guidelines for developing test materials and for conducting lessons in which student knowledges and skills are evaluated, guidelines for effective teaching, supplementary references for the instructor, and samples of forms to be handed out to the students.

Objectives and Scope of Course

The training course described herein represents the first phase of training in the Emergency Medical Technican career structure. The course covers all techniques of emergency medical care presently considered within the responsibilities of the Emergency Medical Technician as well as all operational aspects of the job which he will be expected to perform. Specific content of the course is based on the National Highway Safety Bureau Program Standard No. 11 and guidelines and recommendations for training ambulance personnel prepared by the Committee on Emergency Medical Services of the National Academy of Sciences.

The course emphasizes the development of student skill in recognition of symptoms of illnesses and injuries and proper procedures of emergency care. As such, reliance is placed heavily on demonstration and practice as a teaching method. Each lesson allows practice of specific skills covered in the lesson as appropriate and interleaved practice, test and evaluation sessions are designed to assure attainment of proficiency levels in all skills.

Specific objectives of the course follow:

- To teach students the overall roles and responsibilities of the Emergency Medical Technician in performing both the emergency care and operational aspects of his job.

- To develop student skill in diagnosis and all emergency treatment procedures short of those rendered by physicians or by paramedical personnel under the direct supervision of a physician.

- To develop student skill in the use of and care for all equipment required to accomplish his job.

The total course consists of 25 lessons involving 71 hours of classroo training plus 10 hours of in-hospital observation and training for a total o 81 hours. The first lesson is devoted to an overview of the Emergency Medical Technician's job, a description of the training course, and an ove view of anatomy and physiology. It is followed by lessons on life threatening emergencies, injuries, common medical emergencies, childbirth a problems of child patients, lifting and moving patients, environmental emergencies, extrication from automobiles, and operational aspects of t EMT's job. Two lessons provide for an integration of operational and medical knowledge by a discussion of student responsibilities during vari phases of responding to an ambulance call and by a review of field situati that could be encountered by the EMT.

As stated previously, each lesson provides for practice of the skills taught in that lesson. In addition, the course includes four interleaved lessons which provide the students with additional practice on skills and provide the instructor with an opportunity to evaluate both student knowledges and skills. The course also includes a final written test of knowledges and a final practical evaluation of skills.

In developing the course, it was determined that certain critical ski should be practiced as much as possible in various lessons throughout th course. Thus, for example, the critical skill of cardiopulmonary resuscitation is practiced or evaluated in six different lessons of the course. To ensure proficiency in the various skills, ten hours of in-hospital training and observation are recommended in emergency, surgical, intensive care, obstetrical and psychiatric areas of a hospital. Furtherm during the period of formal training, the student should take advantage o every opportunity to participate in ambulance calls to observe the variou skills being applied.

Required Texts and Supplementary References

The Lesson Plans are based primarily on the text entitled, Emergency Care and Transportation of the Sick and Injured, prepared by the Committee on Injuries of the American Academy of Orthopaedic Surgeons. Since it is recommended as the primary reference for the course, each student and instructor should be provided with a copy. It is available through the American Academy of Orthopaedic Surgeons, 430 North Michigan Avenue, Chicago, Illinois 60611.

In addition, each student and instructor should be provided with a copy of the pamphlet, "First Aid for Laryngectomees," available from the American Cancer Society. An excellent reference for students and instructors in the area of anatomy and physiology is, "The Wonderful Human Machine," available from the American Medical Association.

Appendix C of this document contains a list of documents in the area of emergency medical care for use as supplementary references. Of these references, specific supplementary readings have been recommended for instructors of certain lessons. These include the following:

- Committee on Cardiopulmonary Resuscitation, American Heart Association. "Cardiopulmonary Resuscitation, A manual for instructors." American Heart Association: New York, 1967. 71 p.
- Committee on Cardiopulmonary Resuscitation, American Heart Association. "Training of ambulance personnel in cardiopulmonary resuscitation." American Heart Association: New York, 1965. 14 p.
- Committee on Cardiopulmonary Resuscitation, American Heart Association. "Emergency measures in cardiopulmonary resuscitation, Discussion Guide." American Heart Association: New York, 1965. 17 p.
- American National Red Cross. "First Aid." 4th Ed. Doubleday & Co.: Garden City, New York, 1957. 249 p.
- Cole, Warren H. and Charles B. Puestow. "First Aid, Diagnosis and Management." Sixth Ed. Appleton-Century-Crofts: New York, 1965. 455 p.
- Farrington, J. D. "Extrication of victims--surgical principles." J. Trauma. 8: No. 4, 493-512, 1968.

Using the Lesson Plan

Each lesson plan consists of three parts. The first two parts briefly outline the objectives and requirements for the lesson. The last part gives detailed procedures for conducting each lesson. Each part of the lesson plan is described below.

Objectives of Lesson. Specified here are the objectives of the lesson in terms of knowledges to be developed and the skills to be taught.

Visual Aids. In the lesson plans, asterisks (*) are used to indicate t points in the lecture where slides or charts are recommended. Except fo films and slides known to be available, a skeleton and certain other aids (such as flip charts), no specific slides are recommended since there is n known source of supply at present which can completely satisfy the unique requirements of this course. Furthermore, since teaching aids serve to complement rather than replace the spoken word, each instructor may wi to tailor the teaching aids to suit his own needs and style and may have access to slides or films which he regards as superior to those available now or in the future.

Recommended films and slide sets known to be available are as follo

- Pulse of Life (available on loan through local American Heart Association)
- Emergency Childbirth (Medical Self-Help Training Course Less 11, U.S. Public Health Service; available though local Office of Civil Defense)
- American Heart Association Slide Set (EM 376) - Emergency Measures in Cardiopulmonary Resuscitation (available on loan through local American Heart Association)
- American Heart Association Slide Set (EM 386) - Training of Ambulance Personnel in Cardiopulmonary Resuscitation (available through local American Heart Association)

In the near future, the American Academy of Orthopaedic Surgeons will have available a slide series to supplement each chapter of the basic text used for this course - Emergency Care and Transportation of the Sic and Injured.

Appendix C of this document includes a reference on films available f medicine and allied sciences.

Requirements. Specified here are requirements for number of instructors, instructor references, and materials, equipment, charts, slides, and films recommended as teaching aids. The number of instructors specified is the maximum number needed for both the lecture/demonstrations and practice periods of the lesson. It is assumed that the lead instructor who gives the lecture and demonstration period of the lesson will also participate as an instructor in the practice period of the lesson. If there are more students per instructor than that specified, additional time will be required for practice.

Materials and equipment requirements are specified on a lesson or student basis as appropriate. The instructor should assure that all equipment specified for the lesson is available, operable and ready for use before the start of each lesson. All equipment recommended for demonstration and practice periods should be utilized in the lessons. They have been specifically chosen to introduce realism into the learning situation and to provide techniques for direct evaluation of student performance. If there are more students for a given piece of equipment than that specified, additional time will be required for practice in order that students may attain skill proficiency.

Outline of Instruction. This part of the lesson plan gives detailed procedures for conducting the lesson. These typically adhere to the following pattern:

- Administrative matters--taking attendance, making announcements
- Review of previous lesson
- Lecture on new material
- Demonstration of new skills
- Class practice of new skills
- Summary of lesson--a brief verbal summary of the main points covered in the lesson

In general, materials presented in each lecture follow their presentation in the course text: "Emergency Care and Transportation of the Sick and Injured." The level of detail in each lesson plan is therefore brief. It includes only the major topic coverage and special points to be emphasized. The instructor is advised to be thoroughly familiar with all materials covered in the text so that details of specific areas are not omitted. Where information is taken from a source other than the course text, that reference

source is indicated in parentheses beside the topic area covered. A column is provided to the right of the lesson outline for the instructor to note additional points he wishes to cover. The instructor is advised that the course emphasizes the practical skills of emergency care and transportation of the sick and injured. He is therefore urged to keep his coverage of a topic area relevant to emergency care and not to definitive care.

Estimates of both elapsed time and projected time for each topic area within a lesson are included. Time estimates are given for two purposes:

- To aid the instructor in maintaining his lesson on schedule.

- To provide a means by which the instructor can determine the emphasis to be given to a specific area. For example, the course emphasizes practical skills of emergency care as opposed to details of anatomy and physiology. Therefore, the instructor will find that time estimates for anatomy and physiology are generally short.

The instructor is advised that time estimates devoted to lecture periods of each lesson are not extensive. He is therefore cautioned against extensive discussion of his personal experiences. As appropriate, supervised practice is included in each lesson to assure that students become proficient in all skills. In general, practice periods tend to be placed near the end of each lesson; the instructor may therefore extend time for these practice periods as necessary to assure attainment of specific skills.

The course emphasizes student participation in both lecture/demonstration and practice periods. The instructor will note that he frequently is advised to ask a member of the class to respond to a question covered in the assigned reading. Techniques of asking questions as well as other guidelines for effective teaching are given in Appendix B; each instructor should read this appendix before conducting his lesson.

Instructor Qualifications and Responsibilities

The lead instructor for each lesson will be responsible for the lecture/demonstration period of that lesson. He will be assisted as necessary by instructor aides in the practice period of the lesson. Since both the lead

instructor and the instructor aides will be responsible for developing student skills and for evaluating students for attainment of specific skills, they must both possess the following qualifications:

- Be experienced in the field of emergency care or specialists in the given topic area.

- Be skilled in the use and maintenance of all equipment required for the topic area, including that required for teaching the topic area, e.g., manikins, projection equipment.

- Be knowledgeable about legal constraints under which emergency medical technicians operate in the area of emergency care, ambulance operations, vehicles and equipment, violent cases, procedures for handling the deceased, etc.

- Be skilled instructors.

Each instructor should be thoroughly briefed by the course coordinator on his role and responsibilities before conducting his lesson.

Aiding Student Learning

The instructor should recognize that his class may include students of varying ability and knowledge. Some students may have no prior experience or training in the emergency care field; while others may have taken courses or have been active in the field for several years. Regardless of the extent of the students' previous training or experience, the instructor should not assume that the student is knowledgeable in any given subject area. Skills may have been improperly taught or knowledges inadequately learned. A primary purpose of the course is to make certain that emergency medical technicians learn standardized emergency care procedures. Each student, therefore, must demonstrate attainment of knowledge and skill in each area taught in the course.

However, because of differences in background as well as differences in student ability to learn, the instructor will find variation in the times required for students to attain proficiency in all aspects of emergency care. In practice sessions, experienced students who have demonstrated skill proficiency may be used to aid the inexperienced or slow learners. In addition, special counseling sessions should be provided for slow learners.

Maintaining Records

The instructor should maintain records for each lesson that indicate each student's attendance, an estimate of his skill proficiency, and comments regarding his performance, attitude and personal habits. Thus, the lead instructor or instructor aide must personally observe each student in the practice periods to assure that the student demonstrates proficiency in the skills being taught in the lesson. If a student is having difficulty in developing skill proficiency and appears to need additional practice, that fact should be noted on the record sheet for that lesson. The record sheet should be turned over to the course coordinator at the completion of the lesson.

It is the responsibility of the instructor and the course coordinator to assure that students attain proficiency in each topic area before they proceed to the next area. If, after counseling and special practice, students fail to demonstrate the ability to learn specific knowledges and skills, the course coordinator should not hesitate to fail the student. The level of knowledges and skills attained by a student in the classroom will be reflected in his performance on the job as an Emergency Medical Technician. This is ultimately a reflection on the individual who trained him.

Developing Test Materials

Students will be tested on both their skills and knowledge Student knowledge is evaluated by means of a written test. Written tests are given in three of the practice, test and evaluation lessons as well as in the final test. Student skills are evaluated by means of demonstration; techniques for evaluating skills are included in each lesson devoted to testing. It is the responsibility of the instructor who conducts a lesson to develop written test items for testing knowledge and checklists for evaluating skills covered in that lesson; these should be turned over to the course coordinator at the completion of the lesson. The course coordinator will be responsible for consolidating the questions, preparing a balanced test and administering and grading each examination. Guidance for developing test items and checklists is given in Appendix A; each instructor should read this appendix before developing his test materials.

In-Hospital Training

As recommended in the NAS/NRC guidelines for training of ambulance personnel, in-hospital training consists of observation, demonstration and participation to the extent permitted by the professional staff. Instruction is designed: 1) to demonstrate the importance and benefits of optimal emergency care, efficient transport and adequate reporting; 2) to emphasize the

penalties of inadequate care or improper procedures; 3) to familiarize the student with the equipment used, staffing, operating policies and procedures of the department; 4) to have ambulance personnel observe procedures in and develop skills in resuscitation, handling the unconscious, management of the mentally disturbed and unruly, and techniques of delivery and care of both the infant and mother; 5) to keep ambulance personnel abreast of new developments in equipment and emergency care; and 6) to have ambulance personnel engage in disaster drills.

Responsibility for conduct of this program should be assigned to the staff of the emergency department. Training areas include the emergency department, operating and recovery rooms, the intensive-care unit, the obstetrical department and the psychiatric department. Two consecutive hours of training are required at any one period in order to receive credit toward completion of a course in the assigned department for a total of 10 hours.

Student Requirements for Course Completion

Students will be evaluated on the following criteria:

- Skills
- Knowledges
- Personal attitude
- Personal appearance
- Attendance

Skills. In the area of skills, students either pass or fail. Students must demonstrate proficiency in all skills, not only on the final test, but also in each testing session of selected topic areas. Special makeup sessions may be provided by the instructor as appropriate.

Knowledges. In this area, students must receive a passing grade as determined by the course coordinator, not only on the final test, but also on selected tests of topic areas. Special makeup sessions may be provided by the instructor as appropriate.

Personal attitude. Each student must demonstrate conscientiousness and interest in the course. Students who fail to do so should be counseled while the course is in progress so that they may be given the opportunity to develop and exhibit the proper attitude expected of an Emergency Medical Technician.

Personal appearance. Each student should be neat, clean and well groomed at each session. Students who fail to exhibit good personal hygie habits should receive special counseling while the course is in progress i order that they may be given an opportunity to correct their personal habit

Attendance. Students should be required to attend all lessons. At th discretion of the instructor, a lesson may be missed if the student can successfully demonstrate attainment of all skills and knowledges covered in that lesson. One-hundred percent attendance is required at all practic test and evaluation sessions, as well as the final test. At the discretion o the instructor, special makeup sessions may be provided for slow learne or for students who miss tests for valid reasons.

In-Hospital training. Preferably during the period of formal trainin but in any event prior to certification of course completion, 10 hours of i hospital observation and training are required in emergency, surgical, intensive care, obstetrical and psychiatric areas of a hospital. Two consecutive hours are required at any one period. During the period of this course, the student should take advantage of any opportunity to participat in ambulance calls.

LESSON PLANS

Time: 3 hrs

LESSON 1

THE EMERGENCY MEDICAL TECHNICIAN (EMT) -- HIS ROLE, RESPONSIBILITIES AND EQUIPMENT

Objectives

Inform the student of:

- Course objectives
- Scope
- Procedures
- Requirements for satisfactory completion

Provide an overview of the roles and responsibilities of the EMT:

- Prompt and efficient care of the patient
- Control of the accident scene
- Light extrication and preparation of the patient for transport
- Safe and efficient transport
- Orderly transfer of the patient and patient information to the hospital emergency department
- Communications
- Reporting and record keeping
- Vehicle and equipment care

Explain legal aspects relating to emergency care

Familiarize the student with the ambulance and its equipment

Provide an overview of anatomy and physiology

Requirements

Number of Instructors

- One instructor

Instructor References

- AAOS* Chapters 1-12, 59
- AMA - The Wonderful Human Machine
- Federal laws, state statutes and local ordinances pertaining to ambulances, ambulance services and emergency care personnel

Note: In general, instructor should speak from experience and bring to bear, to the extent possible, unique requirements of the area as they affect the role and responsibilities of the EMT.

Materials, Equipment

- Registration card (one for each student)
- American Academy of Orthopaedic Surgeons' Text on Emergency Care and Transportation of the Sick and Injured (one for each student)
- First Aid for Laryngectomees (one for each student)
- Prepared list of lesson titles and reading assignments (one for each student) (See Appendix D)
- Prepared list of the functions of the EMT (One for each student) (See Appendix D)
- Chalkboard with chalk and eraser or prepared flip chart of functions and responsibilities of the EMT
- Fully equipped ambulance
- Inflatable splints (arm and leg)
- Hinged half-ring lower extremity splint
- Padded board splints (short and long)
- Short and long backboards with 2-inch webbing straps
- Oxygen tanks and transparent masks for adults, infants, children
- Bag-mask resuscitator with adult, child and infant size masks
- Suction apparatus with catheter
- Two-way (S-shaped) resuscitation airways for adults and children
- Oropharyngeal airways
- Three tongue blades taped together and padded
- Universal dressings
- Sterile gauze pads
- Adhesive tape (one-, two- and three-inch)
- Six-inch roller type bandage
- Triangular bandages
- Manometer and stethoscope

Charts and Slides

- Visual aids as indicated by an asterisk if available
- Slide projector and screen as appropriate

*American Academy of Orthopaedic Surgeons - Emergency Care and Transportation of the Sick and Injured

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	INTRODUCTORY REMARKS 1. Introduce self 2. Welcome students 3. Give recognition to the facts that: a. Many students may have had some training and experience b. Students may represent different emergency care services, e.g., private firms, hospitals, volunteer groups, police and fire services 4. Describe briefly the purpose of course, i.e.: a. Develop or upgrade skills of all individuals concerned with emergency care b. Standardize emergency medical care procedures c. First step in career development patterns 5. Describe briefly the scope of the course, i.e.: a. Basic training in all aspects of emergency medical care which EMT is permitted to administer today b. Anticipate advanced, specialized and refresher training as part of career development pattern 6. Impress on students the responsibilities associated with the EMT profession and, therefore, the importance of attaining 100% proficiency in all areas through punctuality, attendance, completion of assignments, class participation and full cooperation with instructor	
(0:05) 0:10	ADMINISTRATIVE MATTERS 1. Hand out the following: a. Registration cards	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	b. AAOS Text: Emergency Care and Transportation of the Sick and Injured c. First Aid for Laryngectomees d. List of lesson titles and reading assignments e. List of functions of the EMT 2. Identify time and place of each session including in-hospital training sessions and arrangements as appropriate for students to participate in ambulance calls 3. Ask students to complete and turn in registration cards	
(0:15) 0:20	SCOPE OF COURSE 1. Refer class to sheet containing lesson titles and reading assignments 2. Briefly review the scope of the course identifying the major skills and knowledges to be covered in each lesson and during in-hospital training 3. Indicate that emphasis will be placed on acquiring proficiency in the recognition of vital signs and symptoms, treating life threatening emergencies and treating other injuries and medical emergencies 4. Differentiate between signs and symptoms and list those of primary concern to the EMT 5. Briefly describe general procedure to be followed in each lesson, i.e.: a. Attendance taking; stress the importance of being on time b. Review of key points from previous lesson c. Lecture on new material; stress the importance of completing assigned readings since certain details may not always be covered in the lecture; however, questions may be asked d. Demonstration of new skills by instructor	

Time Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	e. Class practice of new skills f. Summary of lesson 6. Encourage class to participate by asking and answering questions and illustrating points with relevant experiences 7. Discuss implications of differences between what is presented in course and what student may have learned or experienced: a. Medical aspects of emergency care taught in course should be followed; some exceptions because of local preferences b. Local operational procedures, laws and ordinances should be followed; course material is illustrative and generally applicable c. Operating and maintenance procedures for vehicles and equipment should be based on what is provided and prescribed by local purveyor; course material is illustrative and generally applicable 8. Discuss briefly requirements for satisfactory completion of course: a. Attendance--student is expected to attend all classes and in-hospital training sessions b. Practice, Test and Evaluation Sessions--written test and demonstration of skills until satisfactory proficiency is achieved c. End of Course Examination--written and practical tests d. Attitude--degree of conscientiousness, interest and general attitude will be noted e. Personal Appearance--personal hygiene and grooming will be noted 9. Emphasize again importance of being 100% proficient in all areas; only two grades--Pass or Fail	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	10. Solicit questions regarding the preceding 11. Explain that the remainder of the lesson will be devoted to a discussion of: a. The functions and responsibilities of the EMT b. Medicolegal aspects of the EMT's job c. Personal characteristics expected of an EMT d. The ambulance and its equipment e Overview of anatomy and physiology	
(0:35) 0:30	OVERVIEW OF ROLE AND RESPONSIBILITIES OF THE EMERGENCY MEDICAL TECHNICIAN (EMT) 1. Refer class to list of the functions of the EMT 2. Summarize general functions or responsibilities of the EMT; list on chalkboard or have prepared flip chart of functions. Briefly discuss major responsibilities included in each function explaining that each will be covered in more detail in subsequent lessons a. Prompt and efficient care of the patient before transport b. Control of the accident scene c. Extrication (light) and preparation of patient for transport d. Safe and efficient transport and continuing care of the patient on the way to hospital e. Orderly transfer of patient and patient information to hospital emergency department f. Communications g. Reporting and record keeping h. Vehicle and equipment care Emphasize <u>primary responsibility is to patient</u> regardless of other functions which may have to be performed or distractions usually found at the scene of an accident	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Summarize preceding by describing the activities of the EMT during the various phases of a typical ambulance call. Include activities during: pre-dispatch, dispatch, enroute out, at scene, en-route back, arrival at hospital	
(1:05) 0:10	TEN-MINUTE BREAK	
(1:15)	MEDICOLEGAL PROBLEMS	
	1. Describe federal laws, state statutes and local ordinances pertaining to (information must be developed in accordance with laws, statutes and ordinances of area in which course is presented): a. Operation of ambulance services, vehicles and communication equipment b. Personnel standards, e.g., training certification, liability insurance, compliance with traffic laws, limits of training and ability, protection under "Good Samaritan" law and abandonment c. Patient care situations, e.g., mentally disturbed or unruly, accompaniment of females, use of restraining devices, requirements for police escort, management of alcoholics, reporting of animal bites and disposition of animal carcass, management of attempted suicide, dying declaration, disposition of dead, and reporting of accident involving felony	
(1:30)	PERSONAL ATTITUDES AND CONDUCT OF THE EMT	
0:05	1. Describe desired characteristics of the EMT in terms of: a. Professional manner, i.e., controls emotion, courteous, uses proper tone of voice, confident, chooses appropriate types of conversation, does not smoke while administering care, etc.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	b. Appearance, i.e., well groomed, clean, wears proper uniform and insignia, etc. c. General conduct, i.e., shows interest in job, reflects concern for patient, is a good team worker, prevents embarrassment to patients, gives patient reassurance, shows responsibility for safety of all involved, uses patient's resourcefulness in helping himself, is cooperative with others involved in providing aid, etc. 2. Indicate again that during the course students will be evaluated relative to the preceding characteristics	
(1:35) 0:15	THE AMBULANCE VEHICLE, ITS EQUIPMENT AND SUPPLIES 1. Display in classroom all portable ambulance equipment and supplies used in the course. Identify each item and briefly describe its function and when and how it is used 2. Invite students to view after class a fully equipped ambulance which would be on display outside of the building in which the class is held. An instructor should be available to answer questions	
(1:50) 0:60	OVERVIEW OF ANATOMY AND PHYSIOLOGY 1. Explain that in this lesson only a brief overview of anatomy and physiology will be given to provide the student with the general structure of the human body and the functions of its parts. Details of the various body systems will be covered in subsequent lessons covering the given systems, e.g., the respiratory system is discussed again in Lesson 2, "Airway Obstruction and Pulmonary Arrest" 2. Provide a brief overview of:	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Skeletal system b. Muscular system c. Nervous system d. Respiratory system e. Circulatory system f. Abdomen g. Digestive system h. Genito-urinary system i. Eye j. Skin k. Topographic anatomy	
(2:50) 0:10	SUMMARY OF LESSON	
	1. Briefly summarize the lesson emphasizing the following points: a. The eight functions of the EMT b. Time and location of each class c. The importance of being prepared d. The importance of achieving 100% proficiency in all areas	
(3:00)		

Time: 3 hrs

LESSON 2

AIRWAY OBSTRUCTION AND PULMONARY ARREST

Objectives

Develop a basic understanding of:

- Mechanics of respiration
- Importance of oxygen to body functioning
- Signs of airway obstruction
- Manual techniques of airway care
- Manual techniques of pulmonary resuscitation
- Anatomy of laryngectomy and tracheostomy patients
- Resuscitation of laryngectomy and tracheostomy patients

Teach the following skills:

- Manual techniques of airway care
- Mouth-to-mouth (nose) technique of pulmonary resuscitation
- Chest-pressure arm lift (Sylvester) method of pulmonary resuscitation
- Back-pressure arm lift (Holger-Neilson) method of pulmonary resuscitation

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 5, 14, 15
- American Red Cross, pp. 246-248
- First Aid for Laryngectomees
- Supplementary reference: Cole and Puestow, Chapter 14

Materials, Equipment

- Resuscitation manikin (one for each 10 students)
- Alcohol with sponges for cleaning manikin's face or plastic wrap for protecting manikin's face
- Blankets or mats (one for each 2 students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--)	ADMINISTRATIVE MATTERS	
0:05	1. Take attendance 2. Make announcements Etc.	
(0:05) 0	REVIEW OF PREVIOUS LESSON None	
(0:05) 0:05	LESSON OBJECTIVES	
	1. Briefly explain to the class the objectives of the lesson	
	2. Explain that this lesson will cover manual techniques of airway care and pulmonary resuscitation and that equipment aids will be covered in the next lesson	
	3. Briefly explain that this lesson and the next three lessons cover life threatening emergencies including: a. Airway obstruction b. Pulmonary arrest c. Cardiac arrest d. Bleeding e. Shock Emphasize that the skills learned in these lessons are vitally important to the patient and, performed correctly, may mean the difference between life and death	
(0:10) 0:10	BASIC MECHANICS OF RESPIRATION	
	1. Discuss the importance of oxygen to body functioning and the general process by which O_2 is distributed and CO_2 removed	
	2. Briefly explain the anatomy of the respiratory system and the purpose and functions of the following body parts:	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Pharynx b. Esophagus c. Trachea--epiglottis, larynx and windpipe d. Bronchi e. Lungs	
	3. Briefly discuss with the class: a. Basic mechanics of breathing b. Control center for breathing	
	4. Emphasize that loss of oxygen to the brain for only 4 minutes may cause permanent brain damage and that speedy resuscitative efforts are therefore imperative	
(0:20) 0:10	AIRWAY CARE 1. Ask a member of the class to describe how he would know whether or not an unconscious patient was breathing. Critique his comments making sure that in addition to chest (abdomen) movement, he should be able to <u>feel</u> and <u>hear</u> exhaled air at nose and mouth	
	2. Describe the signs of inadequate or abnormal breathing	
	3. Explain recognition and meaning of cyanosis	
	4. Explain obstruction of the airway by the tongue and maximum extension of the head to maintain an open airway	*
	5. Demonstrate on a manikin the four basic maneuvers for positioning the head and jaw properly so as to provide an open airway: a. Tilt head backward b. Chin lift maneuver	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Jaw lift maneuver d. Turning to face-down position 6. Discuss with class manual procedures for clearing the airway of: a. Blood, vomit, phlegm b. Foreign body obstructions--adults and children 7. Describe briefly airway care in the case of chest injuries, e.g., flail chest, sucking chest wound, pneumothorax	
(0:30) 0:15	MOUTH-TO-MOUTH (NOSE) TECHNIQUE OF PULMONARY RESUSCITATION 1. Discuss advantages of mouth-to-mouth (nose) technique of pulmonary resuscitation: a. Requires no extra equipment b. Requires only one person c. Can be applied immediately in any situation (automobile, water) d. Gives best ventilation of the lungs e. Frees rescuer's hand to assure airway, decompress distended stomach, etc. f. Less fatiguing to rescuer g. Easier to gauge adequacy of resuscitation 2. Explain and demonstrate mouth-to-mouth technique on a manikin emphasizing: a. Importance of starting resuscitative efforts without delay b. Necessity of a clear airway c. Proper resuscitation rates d. Common causes of failure 1) Inadequate head tilt 2) Inadequate force of breathing 3) Lack of a tight seal e. Necessity to pinch nose closed	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	f. Necessity to break contact with patient's mouth to allow him to exhale g. Importance of watching for chest movement and listening or feeling for exhaled air 3. Demonstrate technique for forcing air out of the stomach if stomach becomes distended 4. Explain variations for mouth-to-nose breathing, pointing out that the patient's mouth must be open for exhalation 5. Explain variations for infants and small children 6. Ask a member of the class to suggest how long resuscitation attempts once started should be continued. Emphasize that resuscitation attempts should be discontinued only when the patient breathes spontaneously or when the rescuer is directed to stop by a physician 7. Discuss sanitary aspects of direct mouth-to-mouth resuscitation explaining that a clean handkerchief or gauze square placed over the patient's mouth will not be a serious impediment to easy inflation of the lungs	
(0:45) 0:50	PRACTICE Note 1: The time frame assumes that there will be one instructor and one manikin for every 10 students. If there are more than 10 students per manikin and instructor, additional time will be required for practice. Note 2: In the practice session, only one student at a time can work on the manikin. While not working directly on the manikin, other students should be required to observe and attend to the critique of the individual working on the manikin.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1. Divide class into groups of 10	
	2. Have each class member practice both mouth-to-mouth and mouth-to-nose pulmonary resuscitation on a manikin	
(1:35) 0:10	TEN-MINUTE BREAK	
(1:45) 0:10	THE LARYNGECTOMEE (First Aid for Laryngectomees)	
	1. Reassemble class	
	2. Explain that, although rare, the EMT may encounter a laryngectomee in the performance of his duties and therefore should be thoroughly familiar with the techniques of emergency care for this patient	
	3. Describe physiology of the head and neck before and after a laryngectomee	*
	4. Explain the difference between a laryngectomy and a tracheostomy	*
	5. Explain technique of airway care for the laryngectomee emphasizing:	*
	a. Proper positioning of the head to maintain shape of the stoma	
	b. Dangers of the prone position for the laryngectomee (e.g., danger of sucking dirt particles into the stoma, danger of pressing stoma into cot bedding and thus creating a breathing problem)	
	c. Importance of not removing the tube from a patient who has had a temporary tracheostomy	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	6. Explain mouth-to-stoma technique of resuscitating the laryngectomee	*
	7. Describe medical emblems commonly worn by laryngectomees and other individuals with special medical conditions	*
	8. Emphasize the importance of checking patients for medical emblems and for "checking the neck for a laryngect"	
(1:55) 0:20	MANUAL PRESSURE METHODS OF PULMONARY RESUSCITATION (American Red Cross, pp. 246-248; First Aid for Laryngectomees)	
	General	
	1. Comment that two manual pressure techniques of pulmonary resuscitation will be taught:	
	a. Back-pressure arm lift (Holger-Neilson) method	
	b. Chest-pressure arm lift (Sylvester) method	
	2. Emphasize the following points	
	a. Direct oronasal techniques of pulmonary resuscitation are superior to all other methods of resuscitation	
	b. Manual pressure methods are inferior to oronasal methods since they move an inadequate volume of air	
	c. Manual pressure methods are being taught here only so that the rescuer will have an alternate method should it be impossible to use the oronasal technique	
	d. Manual pressure methods should be used only when severe facial injuries prevent use of oronasal methods (or for the laryngectomee, severe neck injuries)	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	e. The chest-pressure arm lift technique is the only manual pressure method that can be used with cardiopulmonary resuscitation (taught in Lesson 4)	
	Back-pressure arm lift method	
	1. Describe and demonstrate on a member of the class, emphasizing the importance of proper positioning of the head to maintain an open airway	
	2. Ask class to suggest medical conditions/injuries that would preclude use of the technique and discuss examples given (e.g., severe back injuries, arm injuries)	
	3. Explain variations for infants, small children and laryngectomees	
	4. Explain techniques for changing rescuers if one rescuer becomes fatigued	
	Chest-pressure arm lift method	
	1. Describe and demonstrate method on a member of the class, emphasizing the importance of maximum extension of the head to maintain an open airway	
	2. Ask class to suggest medical conditions/injuries that would preclude use of the technique and discuss examples given (e.g., severe chest injuries, arm injuries)	
	3. Explain variations for infants, small children and laryngectomees	
	4. Explain techniques for changing rescuers if one rescuer becomes fatigued	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(2:15) 0:40	**PRACTICE** Note: The time frame assumes that there will be one instructor for every 10 students. If there are more than 10 students per instructor, additional time will be required for practice. 1. Divide class into groups of 10 2. Have class members gain additional practice on the manikin in oronasal techniques of resuscitation. In addition, have class members work in pairs and practice each manual pressure method technique. Correct performance as necessary	
(2:55) 0:05	**SUMMARY OF LESSON** 1. Reassemble class 2. Briefly summarize the lesson emphasizing the following points: a. Proper positioning of head for maintaining an open airway b. Major causes of failure in oronasal technique of pulmonary resuscitation c. Superiority of oronasal method and injuries that would preclude its use d. Importance of checking patients for laryngectomees	
(3:00)		

Time: 3 hrs

LESSON 3

MECHANICAL AIDS TO BREATHING AND PULMONARY RESUSCITATION

Objectives

Develop a working knowledge of operation and use of:

- Mechanical aids to breathing
- Mechanical aids to pulmonary resuscitation

Teach the following skills:

- Use of two-way (S-shaped) airways
- Use of bag-mask resuscitator
- Use of oropharyngeal airways
- Use of suction unit
- Use of oxygen equipment

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 14 and 15
- Manuals for equipment: bag-mash resuscitator, oxygen equipment, suction apparatus
- First Aid for Laryngectomees
- Supplementary reference: Cole and Puestow, Chapter 14

Materials, Equipment

- Resuscitation manikin (one for each 10 students)
- Alcohol with sponges for cleaning manikin's face or plastic wrap for protecting manikin's face
- Two-way (S-shaped) airways: infant/small child size, large child/adult size (one for each 10 students)
- Oropharyngeal airways: adult size, child size, infant size (one for each 10 students)
- Bag-mask resuscitator: mash sizes for adult, child, infant (one for each 10 students)
- Suction apparatus with catheter (one for each 10 students)
- Oxygen tanks and transparent masks for adults, children infants (one for each 10 students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Ask individuals in the class to describe or to demonstrate on a manikin as appropriate the following points. Have class critique responses and discuss as necessary: a. Signs of inadequate breathing b. Signs of pulmonary arrest c. Technique of maximum extension of head to maintain open airway d. Mouth-to-mouth technique of pulmonary resuscitation e. Variations in mouth-to-mouth technique for infants, small children and laryngectomees f. Injuries requiring manual pressure methods of resuscitation	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson 2. Mention that there might be slight variations in equipment produced by different manufacturers. However, procedures for operation and use taught here will be basically the same for all equipments	
(0:20) 0:05	MECHANICAL AIDS TO AIRWAY CARE <u>Oropharyngeal airways</u> 1. Display and describe purpose and use of the various sizes of oropharyngeal airways	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Describe proper technique for inserting an airway emphasizing that the tongue and chin should be pulled forward	
	3. Explain proper positioning of the inserted airway	*
	4. Ask a member of the class to discuss limitations on use of the airway and dangers in its use. Discuss his comments, emphasizing the following points: a. They should only be used if the rescuer is unable to maintain an open airway by proper positioning of the head and body b. They should not be used on conscious patients c. They may cause retching and vomiting in an unconscious patient	
(0:25) 0:05	Suction unit (manual for suction apparatus) 1. Display and describe purpose and operation of suction unit	
	2. Ask class to describe characteristics of a good suction unit and discuss answers given (e.g., equipment should have strong enough suction, tubing of adequate length and diameter, plastic or metal suction tip, portability)	
	3. Demonstrate operation of the suction unit on a manikin	
	4. Explain technique for suctioning the laryngectomee	*
(0:30) 0:20	Oxygen equipment (manual for oxygen equipment) 1. Show class typical oxygen equipment describing in detail its construction and use:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Proper removal of protective cap b. Technique of "cracking" the tank c. Opening the tanks with reducing valve connected d. Adjusting the flow meter e. Connecting administrating apparatus to the flow meter f. "Shutting down" the apparatus 2. Describe safe practices in the use of oxygen equipment, e.g.: a. Never use oils or grease near oxygen equipment b. No smoking allowed near oxygen equipment since oxygen supports combustion c. Tanks should be held securely in the apparatus 3. Discuss the various sizes of masks and their uses 4. Demonstrate administration of oxygen to a manikin 5. Ask a member of the class to give examples of when oxygen should be used. Discuss examples given, emphasizing that patients with breathing problems will usually benefit from additional oxygen, but that inhalation is not a substitute for resuscitation 6. Ask a member of the class to describe what he would do if a conscious patient in need of oxygen resists the mask (e.g., full concentration of oxygen near the patient's nose will assist breathing if the victim fears the mask)	
(0:50) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	MECHANICAL AIDS TO PULMONARY RESUSCITATION	
(1:00) 0:05	General	
	1. Discuss with the class the superiority of direct oronasal methods of resuscitation and limitations of mechanical aids to breathing (e.g., they must be immediately available, they must be in operating condition, rescuer must not waste time obtaining them)	
	2. Emphasize that mechanical aids to pulmonary resuscitation have been developed to avoid direct contact between the patient and the rescuer, and that use of mechanical equipment does not improve on the direct oronasal method	
(1:05) 0:05	Two-way (S-shaped) airway	
	1. Describe purpose and use of various sizes of two-way airways	
	2. Describe proper technique for inserting the airway, emphasizing that the tongue and chin should be pulled forward	
	3. Explain proper positioning of the inserted airway and technique of resuscitating by the airway	*
	4. Emphasize that airways should not be used on conscious patients, and may cause vomiting in unconscious patients	
(1:10) 0:20	Bag-mask resuscitator (manual for bag-mask resuscitator)	
	1. Show class a typical bag-mask resuscitator describing in detail its construction, use and varying mask sizes	
	2. Demonstrate attachment of oxygen to the bag-mask unit	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Discuss and demonstrate on a manikin procedures for obtaining a tight seal with the mask 4. Demonstrate technique of pulmonary resuscitation on a member of the class using the bag-mask resuscitator. Emphasize the following points: a. Importance of an open airway b. Importance of a tight seal c. Importance of watching the patient for signs of vomiting and what to do should these signs be evident 5. Explain variation in technique for small children, infants and laryngectomees 6. Briefly discuss with the class other types of mechanical resuscitators, their limitations and requirements for effective resuscitation. Emphasize reason why manually operating bag-mask units are preferred and why pressure cycled automatic ventilators should not be used	
(1:30) 1:25	PRACTICE Note: If there are more than 10 students per instructor or per item of equipment, additional time will be required for practice 1. Divide class into groups of 10 2. Have each student practice (on a manikin or other student, as appropriate) until he has demonstrated proficiency in: a. Use of suction units b. Setting up, administering and shutting down oxygen apparatus c. Resuscitation by the bag-mask unit	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(2:55) 0:05	SUMMARY OF LESSON 1. Reassemble class 2. Briefly summarize the lesson emphasizing the following points: a. Superiority of direct oronasal methods of resuscitation over mechanical aids b. Limitations of airways (should not be attempted on conscious patients) c. Importance of proper operation and use of oxygen equipment	
(3:00)		

Time: 3 hrs

LESSON 4

CARDIAC ARREST

Objectives

Develop a basic understanding of;

- Mechanics of circulation
- Importance of oxygen to body functioning
- Signs of cardiac arrest
- Techniques of cardiopulmonary resuscitation
- Dangers to the patient if cardiopulmonary resuscitation is delayed or performed incorrectly

Teach the following skills:

- Cardiopulmonary resuscitation by a lone rescuer
- Cardiopulmonary resuscitation by a team of rescuers

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 6 and 16
- American Heart Association Cardiopulmonary Resuscitation Manual for Instructors
- Training of Ambulance Personnel in Cardiopulmonary Resuscitation, Discussion Guide. American Heart Association
- Emergency Measures in Cardiopulmonary Resuscitation, Discussion Guide. American Heart Association
- Supplementary reference: Cole and Puestow, Chapter 14

Materials, Equipment

- Cardiopulmonary resuscitation manikin (one for each 10 students)
- Alcohol with sponges for cleaning manikin's face or plastic wrap for protecting manikin's face
- Bag-mask resuscitator (one for each 10 students)
- Oxygen equipment
- Stretcher
- Chalkboard with chalk and eraser

Charts, Slides

- American Heart Association Slide Set (EM 376) Emergency Measures in Cardiopulmonary Resuscitation
- American Heart Association Slide Set (EM 386) Training of Ambulance Personnel in Cardiopulmonary Resuscitation
- Other visual aids as indicated by an asterisk (*) if available
- Slide projector and screen

Films

- Pulse of Life
- Sound projector and screen

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Ask a member of the class to demonstrate operation of oxygen equipment and administration of oxygen to a member of the class. Critique his performance 2. Ask a member of the class to demonstrate resuscitation of a member of the class using the bag-mask resuscitator. Critique his performance	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson 2. Emphasize that it is especially critical that the technique of cardiopulmonary resuscitation taught in this lesson be learned correctly since incorrect use of the technique can result in severe damage to the patient 3. Indicate that competence in cardiopulmonary resuscitation can be attained only through repetition. Therefore, the student will be given several opportunities throughout the course to practice this technique	
(0:20) 0:10	BASIC MECHANICS OF CIRCULATION 1. Briefly explain the functions of the following circulatory system elements in distributing oxygenated blood to and removing waste products from all body parts:	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. The heart b. Arteries c. Veins d. Capillaries	
	2. Emphasize the importance of oxygen to body functioning	
	3. Discuss normal pulse rates--adults, infants, children	
	4. Explain the physical structure of the chest cavity including rib structure and location of internal organs proximal to the heart emphasizing that, if performed incorrectly, cardiopulmonary resuscitation can result in: a. Fractures of the rib or sternum b. Laceration of the liver, spleen or heart c. Damage to lung tissue	*
	5. Emphasize that loss of oxygen to the brain for 4 minutes may cause permanent brain damage and that speedy resuscitative efforts, performed correctly, are therefore imperative	
(0:30) 0:05	SIGNS OF CARDIAC ARREST 1. Ask a member of the class how he would know if a patient has cardiac arrest. Critique his comments emphasizing that all signs should be present before a rescuer attempts cardio-pulmonary resuscitation: a. Patient is not breathing b. Patient has no carotid (or femoral) pulse c. Pupils of <u>both</u> eyes are dilated and will not react to light	
	2. Demonstrate location of the carotid pulse and have each class member find his own pulse	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Explain appearance of dilated pupils during cardiac arrest re-emphasizing that the pupils will not react to light	*
(0:35) 0:50	TECHNIQUE OF CARDIOPULMONARY RESUSCITATION	
	1. Show film "Pulse of Life" and critique the film	
	2. Demonstrate on a manikin the proper location of pressure area on the sternum. Re-emphasize dangers to internal body parts from improper placement of the hands on the sternum	
	3. Using a manikin demonstrate the technique of cardiopulmonary resuscitation by one rescuer	
	4. Explain variations in technique for two rescuers working as a team	
	5. Explain variations in technique for infants and small children	
	6. Ask a member of the class to summarize the ABC's of cardiopulmonary resuscitation	
	7. Ask a member of the class to tell how he would know if his attempts at cardiopulmonary resuscitation were effective (emphasize that when working as a team the ventilating rescuer should feel a pulse with each compression) a. Pulse felt in carotid artery b. Constricted pupils c. Improved skin color d. Possibly spontaneous gasping respirations e. Possibly spontaneous movement of patient's arms or legs f. Heart may resume normal beating	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	8. Ask a member of the class to give examples of instances when cardiopulmonary resuscitation should not be attempted and discuss examples	
	9. Ask a member of the class how long cardiopulmonary resuscitation once started should continue. Critique his comments emphasizing that resuscitative efforts should be stopped only when patient's heart resumes normal beating or when directed to do so by a physician	
	10. Demonstrate technique of continuing resuscitation while loading and transporting a patient on a stretcher	*
(1:25) 0:10	TEN-MINUTE BREAK	
(1:35) 1:20	PRACTICE	
	Note 1: If there are more than 10 students for each instructor or manikin, additional time will be required for practice.	
	Note 2: Students who are not working directly on the manikins should either practice taking carotid pulses or observe the students working on the manikins.	
	1. Divide class into groups of 10	
	2. Have each class member practice the following:	
	a. Location of carotid pulse on himself and another class member	
	b. Cardiopulmonary resuscitation of a manikin using direct oronasal technique of ventilation. Student performs technique alone and as a member of a team	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Cardiopulmonary resuscitation of a manikin using the bag-mask method of ventilation. Student performs as a member of a team	
(2:55)	SUMMARY OF LESSON	
0:05	1. Reassemble class	
	2. Briefly summarize the lesson emphasizing the following points:	
	a. Importance of speedy efforts in cardio-pulmonary resuscitation	
	b. Proper procedures by a lone rescuer and by a team of rescuers	
(3:00)	c. Dangers of improper use of the technique	

Time: 3 hrs

LESSON 5

BLEEDING, SHOCK AND PRACTICE ON AIRWAY CARE, PULMONARY RESUSCITATION, AND CARDIOPULMONARY RESUSCITATION

Objectives

Develop a basic understanding of:

- Mechanics of circulation
- Technique of determining blood pressure
- Signs of external bleeding: artery, vein, capillary
- Signs of internal bleeding
- Signs of shock
- Use of pressure dressings to control bleeding
- Use of pressure points to control bleeding
- Use of inflatable splints to control bleeding
- Dangers and use of tourniquets in controlling bleeding
- Importance of preventing shock and techniques of caring for the patient in shock
- Intravenous therapy

Teach the following skills:

- Location of carotid, temporal, femoral, brachial and radial arteries
- Control of bleeding by a pressure dressing
- Application of inflatable splints to arm and leg
- Determination of blood pressure

Provide additional practice on:

- Airway care
- Pulmonary resuscitation
- Cardiopulmonary resuscitation

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AACS, Chapters 6, 13, 17 and 18
- Supplementary reference: Cole and Puestow, Chapters 7 and 8

Materials, Equipment

- Cardiopulmonary resuscitation manikin (one for each 10 students)
- Alcohol with sponges for cleaning manikin's face or plastic wrap for protecting manikin's face
- Oxygen equipment (one for each 10 students)
- Suction equipment (one for each 10 students)
- Bag-mask resuscitator (one for each 10 students)
- Universal dressings or gauze pads
- Blankets or mats (one for each 2 students)
- Chalkboard with chalk and eraser
- Manometer and stethoscope (one set for each 10 students)
- Inflatable splints (arm and leg) (one set for each 10 students)

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:05	REVIEW OF PREVIOUS LESSON 1. Review the signs of cardiac arrest 2. Review the dangers of improper use of cardiopulmonary resuscitation and the importance of checking signs to assure that cardiopulmonary resuscitation is not attempted unless necessary	
(0:10) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson 2. Explain that this is the last lesson of life threatening emergencies and that students will be evaluated on their knowledges and skills at the next lesson. The practice session for this lesson will therefore not be formalized nor devoted only to this lesson; it will provide an opportunity for all students to practice skills learned thus far in the course in order that they may be prepared for the test and evaluation session	
(0:15) 0:20	BASIC MECHANICS OF CIRCULATION 1. Briefly review the functions of the following elements of the circulatory system: a. Heart b. Arteries c. Veins d. Capillaries	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Explain the meaning of the pulse, the normal pulse rate, and the location of: a. Carotid artery b. Brachial artery c. Femoral artery d. Temporal artery e. Radial artery	*
	3. Describe the composition, characteristics and vital functions of blood	
	4. Explain normal amounts of blood in adults and children and amount of blood loss that is serious for each	
	5. Emphasize the seriousness of blood loss and the importance of prompt and efficient procedures in the control of bleeding	
	6. Define blood pressure and demonstrate technique for determining blood pressure	
(0:35) 0:15	EXTERNAL BLEEDING	
	1. Discuss types of bleeding, their significance and signs: a. Artery b. Vein c. Capillary	*
	2. Using a universal dressing or gauze pads, demonstrate technique of controlling external bleeding by direct pressure over the wound	
	3. Locate the femoral and brachial artery pressure points and explain their use in controlling bleeding of the extremities. Emphasize that direct pressure over the wound is normally a better way to control bleeding	*
	4. Have each member of the class find his own femoral and brachial arteries as well as those of his neighbor	
	5. Describe and demonstrate use of inflatable splints to control bleeding of the arm and leg	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	6. Describe how to apply a tourniquet emphasizing the following points: a. When to use a tourniquet (e.g., only in severe emergency where bleeding cannot be controlled in any other way) b. Dangers of indiscriminate use c. Importance of using a wide bandage d. Importance of marking patient 7. Ask a member of the class to give causes of nose-bleeds and the technique of care in the case of: a. Skull fractures b. Other causes 8. Emphasize that bleeding from the nose or ear may mean there is a skull fracture and that, if a skull fracture is suspected, bleeding should not be stopped	
(0:50) 0:10	INTERNAL BLEEDING 1. Ask a member of the class to give the signs and symptoms of internal bleeding. Critique his comments 2. Discuss examples of internal bleeding in the body cavity and extremities, indicating potential blood loss for fractures of the femor, pelvis, arm 3. Discuss the dangers of internal bleeding emphasizing that anyone with internal bleeding is a high priority victim 4. Describe techniques of care for the patient bleeding internally in: a. The chest b. The abdomen c. An extremity	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	5. Discuss the importance of administering oxygen to a person suffering from blood loss	
(1:00) 0:10	TEN-MINUTE BREAK	
(1:10) 0:25	SHOCK	
	1. Define shock and discuss its physiological basis: a. Changes in vascular tone b. Changes in volume and composition of blood c. General circulatory failure	
	2. Describe and discuss causes and types of shock: a. Hemorrhagic (blood loss) shock b. Respiratory (inadequate breathing) shock c. Neurogenic shock d. Psychogenic shock e. Cardiac shock f. Septic (severe infection) shock g. Anaphylactic shock	
	3. Describe and discuss the signs of persons in shock: a. Pulse weak and rapid b. Skin cold and clammy c. Sweating d. Face pale or cyanotic e. Breathing shallow, labored, rapid, possibly irregular or gasping f. Eyes dull or lusterless with dilated pupils g. Restlessness and anxiety h. Thirst i. Nausea or vomiting j. Low blood pressure	
	4. Describe signs of anaphylactic shock: a. Skin b. Respiratory system c. Circulation	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	5. Emphasize that shock is one of the stages of the process of dying and therefore it is especially important that the onset of shock be prevented in all patients 6. Ask a member of the class to explain how he would prevent shock. Critique his comments emphasizing that basically preventing shock means caring for the entire patient, e.g.: a. Restore breathing and heartbeat as necessary b. Control bleeding c. Administer oxygen d. Elevate lower extremities e. Splint fractures f. Avoid rough handling g. Prevent loss of body heat h. Keep lying down (except for some heart and lung conditions) 7. Describe care for anaphylactic shock: a. Immediate transport to hospital b. Prevent shock c. Administer oxygen if cyanotic d. Give pulmonary or CPR as required 8. Explain the use of IV's for treating shock and the technique of venipuncture. (Training of EMT's in this procedure is appropriate in advanced courses)	
(1:35) 1:20	PRACTICE Note: If there are more than 10 students per instructor, manikin or item of equipment, additional time will be required for practice. 1. Divide class into groups of 10 2. Have each class member practice the following skills:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Application of inflatable splints to arm and leg b. Determination of blood pressure c. Use of suction equipment d. Use of oxygen equipment e. Mouth-to-mouth (nose) technique of pulmonary resuscitation f. Use of bag-mask resuscitator g. Cardiopulmonary resuscitation alone and as a member of a team h. Manual pressure techniques of pulmonary resuscitation	
(2:55) 0:05	SUMMARY OF LESSON 1. Reassemble class 2. Briefly summarize the lesson emphasizing the following points: a. Importance of and techniques of controlling severe bleeding b. Signs of and techniques of care for the patient suffering from internal bleeding c. Seriousness of shock and importance of caring for the whole patient in order to prevent shock	
(3:00)		

Time: 3 hrs

LESSON 6

PRACTICE, TEST AND EVALUATION-- AIRWAY CARE, PULMONARY ARREST, CARDIAC ARREST, BLEEDING AND SHOCK

Objectives

Test basic knowledges and skills associated with:

- Airway care
- Pulmonary arrest
- Cardiac arrest
- Bleeding
- Shock
- Roles, responsibilities and personal characteristics of EMT
- Medico-legal problems

Provide practice on and evaluate the following skills:

- Use of suction equipment
- Use of oxygen equipment
- Pulmonary resuscitation using the bag-mask resuscitator
- Cardiopulmonary resuscitation by a single rescuer
- Cardiopulmonary resuscitation by a team of rescuers
- Determination of blood pressure

Requirements

Number of Instructors

- One for each 10 students

Instructor References

- AAOS, Chapters 1, 5, 6, 13, 14, 15, 16, 17, 18 and 59
- American Heart Association Cardiopulmonary Resuscitation Manual for Instructors
- American Red Cross, pp. 246-248
- First Aid for Laryngectomees
- Supplementary reference: Cole and Puestow, Chapters 7, 8 and 14

Materials, Equipment

- Written test covering topic area (one for each student)--see Appendix A for guidance in test design
- Checklists for evaluating student skills (one for each student)--see Appendix A for guidance in design of checklists
- Cardiopulmonary resuscitation manikin (one for each 5 students)
- Alcohol with sponges for cleaning manikin's face or plastic wrap for protecting manikin's face
- Oxygen tanks and masks (one for each 10 students)
- Bag-mask resuscitator (one for each 10 students)
- Suction apparatus with catheter (one for each 10 students)
- Blankets or mats (one for each 2 students)
- Manometer and stethoscope (one set for each 10 students)

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0	REVIEW OF PREVIOUS LESSON None--entire lesson is review, practice and evaluation	
(0:05) 0:05	LESSON OBJECTIVES 1. Briefly explain the objectives of the lesson	
(0:10) 0:30	TEST OF KNOWLEDGES 1. Distribute test and explain procedures for taking test, time allocated, etc. 2. Test should cover the subject matter taught in Lesson 1 through 5, e.g.: a. Airway care b. Pulmonary arrest c. Cardiac arrest d. Bleeding e. Shock f. Roles, responsibilities and personal characteristics of an EMT g. Medico-legal problems	
(0:40) 2:20	PRACTICE AND EVALUATION OF SKILLS Note 1: Time frames for practice and evaluation assume no more than 10 students per instructor, 5 students per manikin and 10 students per other items of equipment. If the number of students per instructor, manikin and equipment exceed those specified, additional time will be required for practice and evaluation. Note 2: An additional manikin has been suggested for this lesson to provide an opportunity for students to practice on one manikin while students are being evaluated on the other.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1. Distribute checklists for evaluating skills and explain procedures to be followed in practice and evaluation of skills, e.g.: a. Each student will be given the opportunity to practice each skill as needed until he demonstrates proficiency in the skill b. Instructor will sign the checklist for each skill as evidence of satisfactory demonstration of that skill by the student 2. Divide class into groups of 10 3. Permit practice on and evaluate the following skills: a. Bag-mask technique of artificial respiration: Working in pairs, each class member should demonstrate proper technique of bag-mask ventilation including observing for vital signs, proper positioning of head, clearing oral cavity of debris, obtaining a tight seal with the mask, and ventilating his partner at the proper rate for a minimum of 2 minutes b. Suction equipment: Each class member should demonstrate operation and use of suction equipment c. Oxygen equipment: Working in pairs, each class member should set up oxygen equipment, administer oxygen to another student and close down oxygen equipment d. Cardiopulmonary resuscitation: 1) Each student should practice cardiopulmonary resuscitation alone until he can successfully resuscitate a manikin for a minimum of 2 minutes. His performance should demonstrate that he is	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1) cont'd knowledgeable in technique including airway care, location of hands on sternum, rates of ventilation and compression and volume of ventilation and compression 2) Each student should practice cardiopulmonary resuscitation as a member of a team until he can successfully resuscitate a manikin for a minimum of 2 minutes. Each student should perform in both roles--as a ventilator and as a sternum compressor. His performance should demonstrate that he is knowledgeable in technique including airway care, location of hands on sternum, rates of ventilation and compression, and volume of ventilation and compression e. Blood pressure: Working in pairs, each class member should determine blood pressure	
(3:00) 0 (3:00)	SUMMARY OF LESSON None	

Time: 3 hrs

LESSON 7

WOUNDS

Objectives

Develop the following knowledges:

- Signs and significance of various wound types
- Causes and danger of infection in open wounds
- Basic care of wounds
- Techniques of dressing and bandaging wounds

Develop skill in dressing and bandaging the following body parts:

- Extremities
- Forehead and scalp
- Neck
- Shoulder
- Hip

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 19 and 49
- Cole and Puestow, Chapters 5 and 6

Materials, Equipment

- Roller bandage (one for each two students)
- Universal dressing or gauze pads (one for each two students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:20	REVIEW OF PREVIOUS LESSON 1. Review answers to the written test given in Lesson 6 pointing out correct answers and discussing common errors made 2. Discuss with the class their overall performance in the practice and evaluation session pointing out common errors made by the students, if any, in: a. Use of suction equipment b. Operation and use of oxygen equipment c. Mouth-to-mouth (nose) technique of artificial respiration d. Manual pressure techniques of artificial respiration e. Use of bag-mask resuscitator f. Technique of cardiopulmonary resuscitation g. Determining blood pressure	
(0:25) 0:05	LESSON OBJECTIVES 1. Briefly explain the objectives of the lesson 2. Explain that in this lesson and the next four the student will learn techniques of care for victims suffering from injuries to various body parts including techniques of dressing and bandaging wounds and immobilizing fractures	
(0:30) 0:10	GENERAL TYPE AND CARE OF INJURIES 1. Identify general types of injuries to be encountered by the EMT:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Soft tissue injuries, i.e., open and closed wounds of skin, muscles, eye b. Fractures of the skull, neck, spine, extremities, pelvis, ribs, etc. c. Dislocations of the shoulder, elbow, knee, etc. d. Injuries to the internal organs, i.e., lungs, intestines, spleen, etc. 2. Describe general principles of emergency care for injuries, indicating there are some exceptions and the sequence may vary: a. Maintain open airway; resuscitating as required b. Arrest bleeding c. Prevent shock d. Immobilize fractured or dislocated parts before moving patient e. Do not remove penetrating objects f. Do not push back protruding organs or bones g. Preserve avulsed parts h. Dress and bandage wounds i. Consider possible damage to brain, neck, or spine in any accident situation j. Suspect a spinal fracture in any unconscious patient involved in an accident 3. Indicate that the specifics of the preceding general rules and exceptions will be discussed in this and the following four lessons	
(0:40) 0:10	CLASSIFICATION OF WOUNDS 1. Ask a member of the class to name and describe the types of closed wounds: a. Bruises or contusions b. Contusions with a hematoma	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Describe distinguishing features of all types of open wounds: a. Abrasions b. Lacerations c. Avulsions d. Punctures	*
(0:50) 0:20	BASIC CARE OF WOUNDS 1. Ask a member of the class to describe how he would care for closed wounds 2. Discuss with the class the basic care of open wounds including: a. Controlling bleeding (use of direct pressure, pressure points, tourniquet, if necessary) b. Preventing infection (use of sterile dressings) c. Immobilizing part in event of severe bleeding 3. Ask a member of the class to explain how he would care for a patient with a protruding knife in his chest. Critique his comments emphasizing that the knife should not be removed 4. Ask a member of the class to explain how he would care for a patient with a piece of glass in his cheek. Critique his comments emphasizing that the object should be removed only if the rescuer is unable to stop severe bleeding into the patient's mouth and the bleeding interferes with the airway 5. Ask a member of the class to indicate how he would care for a patient whose finger had been cut off. Critique his comments emphasizing that all avulsed parts should accompany the patient to the emergency medical facility	
(1:10) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(1:20) 0:40	DRESSING AND BANDAGING 1. Ask a member of the class to describe the difference between a dressing and bandage and their functions: a. Protect wound from further contamination b. Arrest bleeding c. Immobilize injured tissue and parts 2. Emphasize that the purpose of bandages is to hold dressings in place. They should therefore be tight enough to control bleeding and prevent the dressing from moving but not so tight as to interfere with circulation. The objective is quick, efficient, stable and uncomplicated methods of wound coverage. 3. Describe types and uses of dressings and bandages recommended for application by EMT's: a. "Universal dressings" b. Gauze pads c. Adhesive type dressings d. Occlusive dressings, e.g., aluminum foil e. Soft roller self-adherent bandages f. Triangular bandages g. Adhesive tape 4. Point out dangers of using elastic bandages 5. Indicate that dressing and bandaging in this lesson will be confined to the extremities, forehead, neck, shoulders and hip. Dressing and bandaging of other body parts will be discussed in subsequent lessons 6. Demonstrate on a member of the class techniques of bandaging various extremity parts using roller-type bandages to anchor gauze squares or universal dressings: a. Anchoring the bandage b. Circular turns	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Spiral turns d. Figure of eight turns e. Recurrent turns 7. Demonstrate on a member of the class application of roller-type bandages to hold a universal dressing or gauze pad in place on the following body areas: a. Forehead and scalp b. Neck c. Shoulder d. Hip	
(2:00) 0:55	PRACTICE Note: The time frame assumes that there will be one instructor for each 10 students and dressings and bandages for each 2 students. If there are more than 10 students per instructor or fewer bandages and dressings than specified, additional time will be required for practice. 1. Divide class into groups of 10 2. Have class members work in pairs until each has demonstrated proficiency in anchoring universal dressings or gauze pads on: a. Arm or leg b. Elbow or knee c. Hand or foot d. Forehead or scalp e. Neck f. Shoulder or hip	
(2:55) 0:05	SUMMARY OF LESSON 1. Reassemble class 2. Briefly summarize the lesson emphasizing the following points: a. Importance of controlling bleeding b. Causes and dangers of infection in open wounds c. Reasons for not removing foreign bodies from wounds d. Importance of preserving avulsed parts	
(3:00)		

Time: 3 hrs

LESSON 8

FRACTURES OF THE UPPER EXTREMITY

Objectives

Develop a basic understanding of the following:

- Parts and functions of the musculo-skeletal system
- General concepts of fractures and dislocations
- Types of splints and general rules for splinting
- Signs and symptoms of fractures, dislocations and sprains
- Techniques of immobilizing fractures and dislocations of the upper extremity

Develop skill in immobilizing and splinting fractures and dislocations of the upper extremity

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 2, 3., 20, 21 and 22
- Supplementary reference: Cole and Puestow, Chapters 12 and 13

Materials, Equipment

- Dressings and roller bandages (one set for review of previous lesson)
- Scale model of skeletal system or, preferably, an actual skeleton
- Rigid splints (one set for every two students), wood, wire or cardboard
- Triangular bandages (four for each student)
- Chalkboard with chalk and eraser
- Pillow
- Blanket
- Inflatable splints (arm and leg) (one for each 10 students)

Charts, Slides

- Flip chart of general principles for treating fractures and dislocations
- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Summarize briefly the key points from previous lesson, i.e.: a. Importance of controlling bleeding b. Causes and dangers of infection in open wounds c. Reasons for not removing foreign bodies from wounds d. Importance of preserving avulsed parts 2. Have a member of the class demonstrate dressing and bandaging wound on elbow, neck or shoulder	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to class the objectives of the lesson 2. Explain that the anatomy, physiology and general concepts discussed in this lesson are also applicable to the next three lessons covering fractures and injuries of the lower extremities and other parts of the body	
(0:20) 0:15	THE MUSCULO-SKELETAL SYSTEM 1. Using a chart, scale model or actual skeleton, if available, identify and briefly describe the parts and functions of: a. The skeleton as a whole b. Joints including ligaments	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Skull including cranium and face bones d. Spinal column e. Thoracic (rib) cage including sternum f. Upper extremities including scapula, clavicle, humerus, ulna, radius, carpals, metacarpals and phalanges g. Lower extremities including pelvis, femur, tibia, fibula, patella, tarsals, metatarsals and phalanges	
	2. Identify briefly the purpose and functioning of: a. Muscles in general b. Voluntary muscles including tendons c. Involuntary muscles d. Diaphragm e. Cardiac muscle	*
(0:35) 0:15	GENERAL CONCEPTS OF FRACTURES AND DISLOCATIONS	
	1. Discuss the differences between a closed and open fracture, emphasizing the danger of infection associated with an open fracture	*
	2. Describe how various types of fractured bones appear, i.e., greenstick, transverse, oblique, spiral, comminuted, impacted	*
	3. Describe a hypothetical accident situation which could cause a fracture and ask class to describe how they would check for a fracture and what signs and symptoms might be present, i.e., deformity, pain, tenderness, grating, swelling, discoloration, loss of use, appearance of fragments	
	4. Ask class what they would do if a patient with a fracture were unconscious	
	5. Define a dislocation and identify signs and symptoms.	*
	6. Discuss complications, associated with fractures and dislocations, resulting from the joint pressing on nerves or blood vessels	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	7. Define a sprain and identify signs and symptoms pointing out the difficulty of differentiating between a sprain and a fracture 8. Describe the complications caused by angulated fractures and techniques of caring for patients with angulated fractures	
(0:50) 0:15	GENERAL PRINCIPLES FOR CARE OF FRACTURES AND DISLOCATIONS 1. Describe the general principles for caring for patients with fractures and dislocations, listing each on chalkboard in abbreviated form or have prepared flip chart: a. Immobilize before moving patient or apply traction b. Do <u>not</u> straighten dislocations c. If open fracture, stop bleeding and dress wound before splinting; do <u>not</u> push protruding bone back d. Prevent shock e. Immobilize broken bone <u>and</u> joints above and below break f. Immobilize dislocated joint <u>and</u> bones above and below joint g. Apply <u>slight</u> traction while splinting and maintain until splint is applied h. Splint tightly but do not interfere with circulation i. Suspect injury to neck or spine in any accident that could cause fracture or dislocation 2. Ask class to identify why it is important to prevent motion of the bone ends and adjacent joints, i.e.: a. Minimize damage to muscles, nerves and blood vessels b. Prevent open fracture	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Avoid pressure on blood vessels d. Reduce bleeding e. Reduce pain 3. Define a splint and its general purpose 4. Describe the difference between rigid and traction splints, displaying and identifying examples of each type, including pillows and blanket rolls 5. Point out precautions in using inflatable splints, i.e., overinflation and identify areas of the body where they may be used. Demonstrate application of inflatable splint 6. Point out precautions in using traction splint, i.e., ankle hitch, half ring, amount of traction 7. Discuss need to improvise for dislocations and that dislocation should <u>not</u> be straightened 8. Explain the purpose of a sling and swathe in immobilizing fractures and dislocations	
(1:05) 0:10	TEN-MINUTE BREAK	
(1:15) 0:45	FRACTURES AND DISLOCATIONS OF THE UPPER EXTREMITY <u>Note</u>: In demonstrations of techniques for immobilizing fractures of the upper extremity, instructor should use splints normally available in the area. Regardless of whether or not these splints are padded, instructor should explain procedures and necessity for padding splints so that students will understand basic principles. 1. Ask class to describe how they would check for and the signs and symptoms of a fracture of the clavicle or the upper part of the humerous. Point out the limited signs and symptoms present if fracture of upper humerus is impacted	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Demonstrate the techniques for immobilizing a fracture of the clavicle or upper humerus	*
	3. Indicate that fractures of the shaft of the humerus display classical signs and symptoms and demonstrate the techniques for immobilizing the fractures, i.e., board splint and sling and swathe	
	4. Indicate that fractures of the elbow display classical signs and symptoms but present additional problems because of possible damage to blood vessels and nerves; demonstrate technique for splinting a fracture of the elbow, emphasizing that tight dressings should be avoided and deformity should <u>not</u> be corrected	*
	5. Describe signs and symptoms of a fracture of the forearm or wrist and demonstrate techniques for splinting the forearm	
	6. Describe splinting of the hand and finger	*
	7. Describe types, signs and symptoms of shoulder dislocation and demonstrate methods for immobilizing them	*
	8. Describe types of dislocations of the elbow and methods for splinting them	*
	9. Describe dislocations of the wrist joint and methods for immobilizing them	*
	10. Describe dislocations of the hand and finger and method for immobilizing them	*
(2:00) 0:55	PRACTICE <u>Note</u>: If there are more than 10 students per instructor or 2 students per set of splints, additional time will be required for practice.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1. Divide class into groups of 10 2. Have class members work in pairs. Each student should practice immobilizing each of the following: Fractures: . Clavicle . Humerus . Elbow . Forearm Dislocations: Shoulder	
(2:55) 0:05	SUMMARY OF LESSON 1. Reassemble class 2. Briefly summarize the lesson, emphasizing the following points: a. Why it is important to immobilize a fracture or dislocation b. Signs and symptoms of a fracture c. General rules for care of fractures and dislocations	
(3:00)		

Time: 2 hrs 30 min

LESSON 9

FRACTURES OF THE LOWER EXTREMITY

Objectives

Develop a basic understanding of the following:

- **Signs and symptoms of fractures and dislocations of the lower extremity**
- **Techniques of immobilizing fractures and dislocations of the lower extremity**

Develop skill in immobilizing fractures of the lower extremity.

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapter 23
- Supplementary reference: Cole and Puestow, Chapters 12 and 13

Materials, Equipment

- Inflatable splints (leg) (one for each 10 students)
- Rigid splints (one set for every two students) wood, wire or cardboard
- Traction splints (one for every three students)
- Long board splints (one set for every three students)
- Triangular bandages (four for each student)
- Blankets (one for every two students)
- Chalkboard with chalk and eraser

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Summarize briefly the key points from the previous lesson, i.e.: a. Why it is important to immobilize a fracture or dislocation b. Signs and symptoms of a fracture c. General rules for care of fractures and dislocations 2. Have a member of the class demonstrate immobilizing a fracture of the forearm	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:20) 0:50	FRACTURES AND DISLOCATIONS OF THE LOWER EXTREMITY Note 1: In demonstrations of techniques for immobilizing fractures, instructor should use splints normally available in the area. Regardless of whether or not these splints are padded, instructor should explain procedures and necessity for padding splints so that students will understand basic principles. Note 2: In demonstrations using traction splints, the instructor should use splints normally available in the area. However, if there are splints that contain built-in leg support and ankle hitches,	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	Note 2: cont'd the instructor should also demonstrate and have class practice on a bare traction splint that requires use of triangular bandages for leg support and ankle hitches so that students will understand basic principles involved. 1. Describe signs and symptoms of fractures in hip area, i.e., hip joint, neck of the femur and junction of the neck and shaft; emphasize the importance of providing for the comfort of patient 2. Describe signs and symptoms of a fracture of the shaft of the femur including possible complications associated with hemorrhage and angulation 3. Demonstrate immobilization of a fracture of any part of the femur using: a. Traction splint b. Long board splint c. Tying both legs together 4. Indicate that fractures around the knee joint are cared for in the same manner as fractures of the elbow and may present the same problems of damage to blood vessels and nerves; angulation should not be corrected; demonstrate immobilization of a fracture of the knee 5. Indicate that fractures of the tibia and fibula (above the ankle) display classical fracture signs and symptoms and that angulation is common; demonstrate method for immobilizing them using a rigid splint 6. Discuss fractures around the ankle and difficulty of differentiating between a fracture and sprain; indicate that rigid type splints, air splints or pillow splints can be used to immobilize fracture 7. Discuss fractures of the foot and desirability of not removing shoe if fracture is suspected	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	8. Describe signs and symptoms of a dislocated hip and difficulty in distinguishing between fracture and dislocation; describe methods for immobilizing hip depending on type of dislocation 9. Briefly discuss dislocations about the knee and ankle joint and use of a rigid type splint for immobilization	
(1:10) 0:10	TEN-MINUTE BREAK	
(1:20) 1:05	PRACTICE Note: If there are more than 10 students per instructor or if there are fewer splints than specified, additional time will be required for practice. 1. Divide class into groups of 10 2. Have class members work in groups of two or three, as appropriate. Each student should practice each of the following: a. Immobilizing a fracture of the lower leg b. Immobilizing a fracture of the knee c. Immobilizing a fracture of the shaft of the femur using: 1) Traction splint (each student should perform in each role, e.g., maintaining traction and applying the splint) 2) Long board splint (each student should perform in each role, e.g., maintaining traction and applying the splint)	
(2:25) 0:05	SUMMARY OF LESSON 1. Reassemble class	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(2:30)	2. Briefly summarize the lesson, emphasizing the following points: a. Fractures of any part of the femur are immobilized best by a traction splint; a long board rigid splint may be used or the two legs may be tied together b. For fractures of the lower leg a rigid splint should be used c. Techniques of splinting angulated fractures d. Angulated fractures and dislocations of the knee should not be straightened	

Time: 3 hrs

LESSON 10

INJURIES OF THE HEAD, FACE, NECK AND SPINE

Objectives

Develop a basic understanding of the following:

- Elements and functions of the nervous system
- Signs and symptoms of a spinal fracture
- General rules of caring for patients with spinal injuries
- Signs of a skull fracture
- Techniques of caring for the patient suffering from injuries to the skull and brain
- Techniques of caring for the patient suffering from injuries to the head, face and neck
- Techniques of bandaging the skull, cheek, ear and jaw

Develop skill in dressing and bandaging the following injuries:

- Skull fracture
- Lacerated cheek
- Avulsed ear
- Fractured jaw

Develop skill in immobilizing a fractured neck

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 4, 24, 25, 26, and 49
- Supplementary Reference: Cole and Puestow, Chapters 17 and 18

Materials, Equipment

- Splints, triangular bandages, dressings and bandages for open fracture of the tibia (one set for review of previous lesson)
- Dressings and roller-type bandages (one set per two students)
- Cervical collar or universal dressing (one for each two students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Summarize briefly the key points from previous lesson, i.e.: a. Why it is important to immobilize a fracture or dislocation b. Signs and symptoms of a fracture c. General rules for care of fractures and dislocations 2. Have a member of the class demonstrate the application of a rigid splint for a compound fracture of the tibia	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:20) 0:10	THE NERVOUS SYSTEM 1. Identify the parts, locations and functions of the nervous system, i.e., brain, spinal cord, sensory nerves, motor nerves 2. Briefly describe the protective coverings of the nervous system 3. Identify the role of the skull and spinal column in protecting the brain and spinal cord	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(0:30) 0:30	FRACTURES AND DISLOCATIONS OF THE NECK AND SPINE 1. Indicate that primary consideration in caring for patients with fractures of the neck and spine is to prevent damage to spinal cord which could cause paralysis or death 2. Point out that in any accident which could cause a fracture or dislocation, suspect and look for a spinal fracture, particularly if the person is unconscious 3. Describe and list on chalkboard the signs and symptoms of a spinal fracture and how to determine their significance: a. Pain--may not be present b. Tenderness c. Painful movement--do not encourage d. Deformity of spine e. Lacerations and contusions f. Paralysis and numbness For conscious victims: ASK, LOOK, FEEL, TOUCH, MOVE For unconscious victims: LOOK, FEEL, ASK OTHERS 4. List on chalkboard and describe general rules of care for a spinal injury: a. Restore the airway b. Control serious bleeding c. Splint before moving d. Do not rush 5. Emphasize importance of keeping the head, neck and body from bending or twisting during all phases of emergency care	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	6. Ask member of class how he would maintain an open airway for pulmonary resuscitation if patient had a neck fracture	
	7. Demonstrate technique for immobilizing a fractured neck. Indicate that techniques for moving patients with neck and spine injuries will be described in a later lesson	
	8. Ask member of the class to identify complications associated with a broken neck or spinal cord injury, i. e., paralysis of chest muscles and neurogenic shock	
	9. Describe causes, signs, symptoms and care of diaphragmatic breathing	
	10. Describe signs, symptoms and care of neurogenic shock	
	11. Indicate that individuals involved in diving accidents usually have a broken neck and must be handled carefully to prevent paralysis; explain technique for handling the patient and removing him from the water	
(1:00) 0:10	TEN-MINUTE BREAK	
(1:10) 0:30	INJURIES TO THE SKULL AND BRAIN	
	1. Identify and describe types of skull fractures, i. e., linear, depressed and those caused by penetrating objects	
	2. Indicate the frequency of skull and brain injuries in accident situations and potential dangers	
	3. Describe signs of skull fractures, i. e., deformity, blood or fluid in ears and nose, black eyes	
	4. Ask member of the class to identify general steps in caring for skull fractures (list on chalkboard):	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Maintain an airway b. Control bleeding--not drainage c. Cover open wounds--little pressure d. Prevent shock e. Do not remove impaled object--cut off f. Suspect brain damage and neck injury	
	5. Demonstrate dressing and bandaging a skull fracture	
	6. Repeat that in the case of head injuries, suspect and check for possible brain damage	
	7. Describe causes of brain damage	*
	8. Ask class to describe how they would check for brain damage and evaluate their findings relative to such factors as consciousness, degree of responsiveness, pupils, etc.	
	9. Describe how to manage patients with brain injuries, i.e.: a. Care for life threatening emergencies; maintenance of adequate respiration most important b. Splint neck injuries c. Prevent shock d. Position patient properly considering elevation of head and drainage of blood and vomitus	
(1:40) 0:30	INJURIES TO THE HEAD, FACE AND NECK	
	1. Describe types of injuries likely to be found in the area of the head, face and neck: a. Soft tissue injuries to the scalp, face and neck, i.e., abrasion, contusion, laceration, avulsion b. Facial fractures, i.e., nose, eye socket, cheek bone, lower jaw	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Injuries to the eye d. Suspect and look for possible brain damage and neck fracture or dislocation 2. Ask member of the class to identify primary considerations in care for patients suffering from injuries to head, face and neck, i.e., control bleeding, keep airway open 3. Describe how breathing may be affected in the case of head, face and neck injuries 4. Discuss care of patients with soft tissue wounds of the scalp, face and neck and facial fractures, emphasizing: a. Arresting bleeding; external, in mouth and nose and deep in neck b. Maintaining an open airway by removing obstructions, proper position and use of suction and oxygen c. Positioning and immobilizing patient in case of accompanying skull, brain or neck injury d. Positioning and protecting avulsed parts e. Removing, cutting off or leaving penetrating objects f. Immobilizing lower jaw 5. Demonstrate application of dressings and bandages to the following: a. Laceration of cheek b. Avulsed ear c. Fractured jaw	
(2:10) 0:45	PRACTICE <u>Note</u>: If there are more than 10 students per instructor or fewer dressings and bandages than specified, additional time will be required for practice.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1. Divide class into groups of 10 2. Have class members work in pairs until each has demonstrated proficiency in applying dressings and bandages for the following: a. Skull fracture b. Lacerated cheek c. Avulsed ear d. Fractured jaw 3. Have class members work in pairs until each has demonstrated proficiency in immobilizing a fractured neck	
(2:55) 0:05	SUMMARY OF LESSON 1. Reassemble class 2. Briefly summarize the lesson, emphasizing the following points: a. Suspect and look for injuries to head, neck and back in accidents b. Preventing damage to brain and spinal cord primary consideration in treating injuries to head, neck and back c. Keep head, neck and back rigid during all phases of emergency care	
(3:00)		

Time: 3 hrs

LESSON 11

INJURIES TO THE EYE, CHEST, ABDOMEN, PELVIS, GENITALIA

Objectives

Develop a basic understanding of the following:

- Parts and functions of the eye, abdomen, digestive system and genito-urinary system
- Types of injuries to the eye, chest, abdomen, pelvis, and genitalia
- Techniques of care for injuries of the eye, chest, abdomen, pelvis, genitalia

Develop skill in dressing andbandaging thefollowing:

- Eye, with and without a protruding object
- Sucking chest wound with or without a rib fracture

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 7, 8, 9, 10, 14, 27, 28, 29, 30 and 49
- Supplementary reference: Cole and Puestow, Chapters 15, 16 and 19

Materials, Equipment

- Dressings and roller bandages (one set per 2 students)
- Cup for dressing eye with protruding object (one per 2 students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Summarize briefly the key points from the previous lesson, i.e.: a. Suspect and look for injuries to head, neck and back in accidents b. Preventing damage to brain and spinal cord primary consideration in treating injuries to head, neck and back c. Keep head, neck and back rigid during all phases of emergency care in case of neck or back injury 2. Have member of the class demonstrate bandaging of a fractured skull	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to class the objectives of the lesson	
(0:20) 0:35	INJURIES TO THE EYE 1. Explain briefly the location, characteristics and functions of the following: a. Cornea b. Sclera c. Iris d. Pupil 2. Identify types of injuries to the eye, e.g., foreign bodies; chemical, heat and light burns; lacerations and contusion; discuss Item 3 below where possible	* *

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Discuss general signs of eye injuries, e.g., swollen or lacerated eyelids, bloodshot sclera, scratched cornea, blood beneath cornea, distorted pupil	*
	4. Discuss removal of small object from the eye explaining cautions regarding object on cornea and impaled objects	*
	5. Describe emergency care treatment for chemical burns to eye, i.e., irrigation	
	6. Ask member of class to describe emergency care treatment for eyes exposed to extremes of heat or light, i.e., cover both eyes	
	7. Demonstrate application of bandage for covering both eyes emphasizing why both eyes are covered even though only one may be injured	
	8. Describe the type and consequences of lacerations and contusions of the eye	
	9. Describe emergency care treatment for lacerations and contusions of the eye, emphasizing: a. Arresting hemorrhage, except when eyeball is lacerated b. Signs of lacerated eyeball c. The care of torn eyelids d. Dressing and bandaging lacerations with no protruding foreign object (see Item 7 above) e. Minimizing pressure f. Suspecting brain damage and signs displayed by eyes	
	10. Demonstrate dressing and bandaging eye with foreign object protruding	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	11. Ask members of class what they would do if a patient was unconscious and his eyes remained open	
	12. Alert class to the possibility of a glass eye or contact lenses	
(0:55) 0:30	INJURIES TO THE CHEST AND BACK	
	1. Identify dangers associated with injuries to the chest, i. e., internal bleeding and punctured organs causing disruption of heart-lung function	
	2. Ask member of class to identify and describe types of chest injuries and resulting complications, i. e., open vs closed, rib fractures, sucking chest wounds, pneumothorax, hemothorax, flail chest, tension pneumothorax, pericardial tamponade, traumatic asphyxia	*
	3. Describe general care for chest wounds	
	4. Describe signs and symptoms of a rib fracture and ribs most likely to be fractured	
	5. Demonstrate immobilizing a rib fracture with cravat bandage; discuss use of swathe and tape	
	6. Ask member of the class to describe the cause and consequences of a sucking wound of the chest	
	7. Describe the emergency care for a sucking wound of the chest emphasizing the need to cover hole with an airtight dressing and not to remove impaled foreign objects	*
	8. Describe the characteristics and care of a flail chest	*
	9. Mention briefly the cause, signs and symptoms of traumatic asphyxia and hemothorax; indicate primary emergency care measures are resuscitation, oxygen, preventing shock and arresting bleeding	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	10. Describe the cause and consequences of pneumothorax and the special case of tension pneumothorax	
	11. Discuss care for pneumothorax and tension pneumothorax with and without a sucking chest wound	
	12. Indicate that injuries to the back, other than fractures, are usually muscle strains and open wounds, the latter being treated as discussed previously. The possibility of injury to the spine should be checked	
(1:25) 0:10	TEN-MINUTE BREAK	
(1:35) 0:20	INJURIES TO THE ABDOMEN	
	1. Explain briefly the location, characteristics and functions of the following: a. Mouth and salivary glands b. Pharynx c. Esophagus d. Stomach e. Small intestine f. Large intestine g. Liver h. Gall bladder i. Pancreas j. Spleen k. Kidneys l. Ureters and urethra m. Bladder n. Appendix o. Male reproductive organs p. Female reproductive organs	*
	2. Ask members of the class to describe the various types of injuries to the abdomen and their consequences including both open and closed injuries and trauma to solid and hollow organs	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Describe how to examine a patient for possible abdominal injuries: a. STOP - have patient lie down with legs flexed b. LOOK - at patient as a whole; his position for break in skin for bruises, contusions or abrasions for protruding organs for vomitus containing blood for painful breathing and "board like" abdomen for impaled objects c. CHECK - pulse blood pressure respiration d. ASK - if abdomen hurts if nauseous if pain in top of shoulders near neck if pain when coughing 3. Describe emergency care for patients with abdominal injuries emphasizing the following points: a. Position--lying down with legs flexed b. No food, liquids or medication c. Cover protruding organs with wet dressing d. Arrest bleeding with pressure if no organs protrude e. Do not remove penetrating instruments f. Position head to expel vomitus g. Prevent shock h. Administer oxygen i. Transport watching for vomiting and shock 4. Ask member of the class to describe special problems of safety belt injuries	
(1:55) 0:10	FRACTURES OF PELVIS 1. Describe the signs, symptoms, dangers and most common types of pelvic fractures and how to check for same	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Describe care of patient with pelvic fracture emphasizing: a. Immobilizing with backboard or stretcher b. Flexing knees for comfort c. Careful handling d. Preventing shock	*
(2:05) 0:10	INJURIES TO GENITALIA 1. Describe circumstances under which injuries to genitalia are likely to be found 2. Describe care of injury to male genitalia: a. Patient lying down b. Direct pressure or pressure on vein to stop bleeding c. Diaper type dressing and four-tailed bandage d. Protect and transport avulsed parts e. Transport patient lying down with ice packs, if available 3. Describe care of injury to female genitalia: a. Patient lying down b. Direct pressure to stop bleeding c. Sanitary napkin for dressing and four-tailed bandage d. Transport patient lying down with ice pack, if available 4. Describe care in the case of impaled or inserted objects	
(2:15) 0:40	PRACTICE Note: The time frame assumes that there will be no more than 10 students per instructor and that the specified equipment will be available. If the number of students per instructor or equipment exceeds those specified, additional time will be required for practice.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1. Divide class into groups of 10	
	2. Have class members work in pairs. Each student should practice application of a dressing and bandage for:	
	a. Laceration of eyeball with no protruding object	
	b. Laceration of eyeball with protruding object	
	c. Sucking wound of chest with or without a rib fracture	
(2:55)	SUMMARY OF LESSON	
0:05	1. Reassemble class	
	2. Briefly summarize the lesson, emphasizing the following special considerations:	
	a. For eye injuries bandage both eyes with minimum pressure and do not remove objects on cornea	
	b. For injuries to chest and back primary concern is disruption of heart-lung function	
	c. For injuries to abdomen cover but do not attempt to replace protruding organs	
(3:00)		

Time: 3 hrs

LESSON 12

PRACTICE, TEST AND EVALUATION--INJURIES I

Objectives

Test basic knowledges and skills associated with injuries to various body parts

Provide practice on and evaluate skills in dressing and bandaging various body parts

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 2, 3, 4, 7, 8, 9, 10, 14, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 and 49

Materials, Equipment

- Written test covering topic area (one for each student)--see Appendix A for guidance in test design
- Checklist for evaluating student skills (one for each student)--see Appendix A for guidance in design of checklists
- Universal dressing or gauze pad (one for each two students)
- Roller bandage (one for each two students)

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0	REVIEW OF PREVIOUS LESSON None--entire lesson is review, practice and evaluation	
(0:05) 0:05	LESSON OBJECTIVES 1. Briefly explain the objectives of the lesson	
(0:10) 0:30	TEST OF KNOWLEDGE 1. Distribute test and explain procedures for taking test, time allocated, etc. 2. Test should cover the subject matter taught in Lessons 7 though 11, e.g.: a. Wounds b. Fractures of the upper and lower extremities c. Injuries to the head, face, neck and spine d. Injuries to the eye, chest, abdomen, pelvis and genitalia Note: Test should include integration of knowledge taught to date wherever possible.	
(0:40) 2:20	PRACTICE AND EVALUATION OF SKILLS Note: Time frames for practice and evaluation assume no more than 10 students per instructor and that the equipment specified will be available. If the number of students per instructor exceeds 10 or there is less equipment than that specified, additional time will be needed for practice and evaluation.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1. Distribute checklists for evaluating skills and explain procedures to be followed in practice and evaluation of skills, e.g.: a. Each student will be given the opportunity to practice each skill as needed until he demonstrates proficiency in the skill b. Instructor will sign the checklist for each skill as evidence of satisfactory demonstration of that skill by the student 2. Divide class into groups of 10 3. Have class members work in pairs until each member has demonstrated proficiency in applying a dressing and bandage to the following: a. Top of head b. Ear c. Cheek d. Eye with protruding eyeball e. Neck f. Shoulder or hip g. Sucking wound of chest h. Lower arm or lower leg i. Hand j. Knee or elbow k. Foot l. Jaw or nose The student should be evaluated on selection of appropriate dressing and bandage, coverage provided by bandage, secureness of dressing and bandage, and anchoring of bandage. Instructors should identify deficiencies and describe correct procedures, if possible while student is applying the bandage. Student should repeat procedure until proficiency is attained.	
(3:00) 0 (3:00)	SUMMARY OF LESSON None	

Time: 2 hrs 30 min

LESSON 13

PRACTICE, TEST AND EVALUATION--INJURIES II

Objectives

Provide practice on and evaluate skills in immobilizing fractures of the:

- **Upper extremity**
- **Lower extremity**
- **Ribs**
- **Neck**

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 2, 3, 20, 21, 22, 23, 24 and 28

Materials, Equipment

- Checklists for evaluating student skills (one for each student)--see Appendix A for guidance in design of checklists
- Rigid splints--wire, cardboard or wood (one set for each 2 students)
- Traction splint (one for each three students)
- Long board splints (one set for each three students)
- Triangular bandages (four for each student)
- Cervical collar/universal dressing (one for each 10 students)

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0	REVIEW OF PREVIOUS LESSON None--entire lesson is review, practice and evaluation	
(0:05) 0:05	LESSON OBJECTIVES 1. Briefly explain the objectives of the lesson	
(0:10) 1:20	PRACTICE AND EVALUATION--IMMOBILIZING FRACTURES Note: The time frames for practice and evaluation assume that there will be one instructor for each 10 students and that the equipment specified will be available. If there are more than 10 students per instructor or less equipment than that specified, additional time will be required for practice and evaluation. 1. Distribute checklists for evaluating skills and explain procedures to be following in practice and evaluation of skills, e.g.: a. Each student will be given the opportunity to practice each skill as needed until he demonstrates proficiency in the skill b. Instructor will sign the checklist for each skill as evidence of satisfactory demonstration of that skill by the student 2. Divide students into groups of 10	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
•	3. Have students work in pairs and practice immobilizing the following fractures until each has demonstrated proficiency in technique: a. Fracture of the ribs, using cravats b. Fracture of the humerus using wood, wire or cardboard splint c. Fracture of the tibia using wood, wire or cardboard splint d. Fracture of the knee using wood,. wire or cardboard splint e. Fracture of the clavicle using cravats f. Fracture of the ulna using wood, wire or cardboard splint g. Dislocation of shoulder h. Fractured neck	
(1:30) 1:00	3. Have students work in groups of three (one serving as patient) and practice immobilizing the following fractures until each has attained proficiency in the technique: a. Fracture of the femur using a traction splint b. Fracture of the femur using a long board splint	
(2:30) 0 (2:30)	SUMMARY OF LESSON None	

Time: 3 hrs

LESSON 14

MEDICAL EMERGENCIES I

Objectives

Develop a basic understanding of the causes, signs, symptoms and techniques of care of:

- Poison victims
- Victims of bites and stings
- Heart attack patients
- Stroke patients
- Dyspnea

Provide additional practice in administering:

- Oxygen
- Cardiopulmonary resuscitation

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 38, 40, 41, 44

Materials, Equipment

- Oxygen tanks and transparent masks (one for each 10 students)
- Cardiopulmonary resuscitation manikin (one for each 10 students)
- Alcohol with sponges for cleaning manikin's face or plastic wrap for protecting manikin's face
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:20	REVIEW OF PREVIOUS LESSON 1. Review answers to the written test given in Lesson 12 pointing out correct answers and common errors made 2. Discuss with the class their overall performance in the practice and evaluation sessions pointing out common errors made by the students, if any, in: a. Dressing and bandaging b. Immobilizing fractures	
(0:25) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:30) 0:15	POISONING (Ingested) 1. Describe a few key signs and symptoms of a child who has taken poison (e.g., cramps, nausea, slowing of respiration, drowsiness, stains around mouth) and ask a member of the class to discuss what is most likely wrong with the patient 2. Describe the causes and consequences of ingested poisoning 3. Ask class to identify possible signs or symptoms of poisoning and list on chalkboard: a. Drowsiness, deep sleep b. Delirious c. Convulsions d. Unconsciousness e. Abdominal pain or cramping	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	f. Vomiting or nausea g. Diarrhea h. Slowing or stopping of respiration i. Absence of pulse or slowed rate of circulation j. Remains of food, drinking glasses, bottles, containers k. Odors or stains around mouth 4. Emphasize in the case of ingested poisons the importance of immediate transport to a medical facility and checking with the Poison Control Center or medical facility for instructions on emergency care 5. Describe the general care and exceptions for patients who have ingested poisons: a. Induce vomiting as directed by Poison Control Center or medical facility Exceptions . Person ingested acids, alkalis or petroleum product . Patient is unconscious, semi-conscious, convulsing, has convulsed, is pregnant or has severe heart disease b. Administer antidote if and as prescribed by Poison Control Center or medical facility c. Prevent shock d. Administer pulmonary resuscitation as required e. Preserve evidence including vomitus if doubtful as to type of poison f. Transport to hospital quickly 6. Describe techniques for inducing vomiting and precautions	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Syrup of Ipecac b. Warm water and salt	
(0:45) 0:10	POISONOUS BITES AND STINGS	
	1. Describe signs and symptoms of snake bite, i.e., burning pain, spreading edema, tiny spots of bleeding, signs of fang wounds, tingling of tongue and mouth, tingling about wound, perspiration, possible respiratory distress and signs of shock	
	2. Ask a member of the class to describe emergency treatment for a snake bite, ensuring the following points are covered: a. Immobilization of affected part, victim at absolute rest b. Identify snake; if possible, bring in snake c. Application of constricting band; not tight enough to stop pulse; demonstrate d. Longitudinal incisions through fang marks and suction within first few minutes after bite e. Prompt transportation for anti-venom injection	
	3. Describe signs and symptoms resulting from poisons being injected by insect bites or stings, i.e., unconsciousness, vomiting, pain, tenderness at injection site, swelling, muscle rigidity, abdomen spasm	
	4. Ask member of the class to describe emergency care for poisonous bites or stings:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Remove rings, watches, bracelets b. Constricting band for extremities c. Cardiopulmonary resuscitation as required d. Transport immediately 5. Describe emergency procedures for animal bites: a. Wash thoroughly b. Dress and bandage wound c. Notify police d. In the absence of police, advise relatives of importance of holding animal for observation	
(0:55) 0:15	HEART ATTACK 1. Describe signs and symptoms of a typical heart attack patient and ask member of the class to suggest what is wrong with the patient; discuss signs and symptoms including the following: a. Pain--type and location b. Shortness of breath c. Apprehension d. Cyanosis e. Nausea and vomiting f. Sweating g. Swelling of hands, feet, and ankles 2. Briefly describe the causes and consequences of a heart attack: a. Heart is muscle and needs blood b. Artery to part of muscle becomes blocked or narrowed c. Part of muscle dies because of inadequate blood supply d. Heart may or may not continue to pump 3. Describe briefly the differences between a coronary, angina and heart failure	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	4. Describe emergency care for a heart attack patient emphasizing: a. Maintaining airway b. Positioning of body for comfort, preferably sitting c. Administration of oxygen in every case d. Not allowing patient to assist in moving himself e. The need for comfort and reassurance f. The possible need for cardiopulmonary resuscitation g. If requested, assist in administration of nitro-glycerine h. Care during loading and transport i. Minimizing use of sirens and red lights	
(1:10) 0:10	TEN-MINUTE BREAK	
(1:20) 0:10	STROKE 1. Describe symptoms of a stroke patient and ask a member of the class to suggest what is wrong with the patient; discuss symptoms including the following: a. Numbness and/or paralysis of the extremities on one or both sides of the body b. Difficulty in speaking and swallowing c. Confusion, dizziness, unconsciousness, convulsions or coma d. Loss of bladder and bowel control	
	2. Briefly describe the causes and consequences of a stroke: a. Cells comprising brain need blood b. Artery to part of brain becomes blocked c. Cells supplied by that artery can die in 4 minutes d. Body functions controlled by those cells are affected	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Describe care of stroke patients emphasizing: a. Maintenance of airway b. Positioning of body for comfort c. Calmness, reassurance and careful handling d. Administration of oxygen if it does not upset patient e. Protection of paralyzed extremities f. No fluids or solids g. Placement of patient on side if choking or unconscious h. Care during loading and transport i. Minimizing use of sirens and red lights	
(1:30) 0:15	DYSPNEA 1. Define dyspnea; discuss causes and types 2. Describe signs and symptoms of individual having an acute asthmatic attack and ask a member of the class to suggest what is wrong with the patient; discuss symptoms including the following: a. Difficult breathing b. Wheezing on expiration c. Coughing d. Apprehensiveness e. Air hunger 3. Briefly describe cause and consequences of asthma: a. Caused by allergies and infections b. Bronchi go into spasm and become smaller c. Air flow in all right; outflow restricted 4. Describe how to manage a patient undergoing an acute asthma attack emphasizing the following: a. Ask patient what works best for him b. Place in sitting or semi-sitting position	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Assist patient in taking any prescribed medication d. Try oxygen but observe reaction particularly if person has emphysema e. Encourage him to drink water f. Reassure and comfort him g. Transport him to hospital while accomplishing the preceding 5. Briefly describe the causes, consequences and symptoms of spontaneous pneumothorax and indicate that only treatment is immediate transport to hospital; do not use mechanical breathing equipment 6. Describe the causes, consequences and symptoms of chronic and traumatic emphysema and indicate how to care for such cases 7. Discuss briefly allergic reactions, e.g., anaphylactic shock	
(1:45) 0:25	PRACTICE 1. Divide class into groups of 10 2. The instructor should verbally describe or simulate signs and symptoms of the medical emergencies covered in this lesson. Members of the class should discuss the cause or causes and indicate how they would care for the patient. Emergencies covered should include: a. Ingested poisoning b. Snake bite c. Heart attack d. Stroke e. Anaphylactic shock f. Acute asthmatic attack	
(2:10) 0:50	3. Have class members work in pairs and practice the following:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Set up, administration and tear down of oxygen equipment b. Cardiopulmonary resuscitation	
(3:00) 0	SUMMARY OF LESSON	
(3:00)	None--the summary of the lesson was included in the practice session	

Time: 2 hrs

LESSON 15

MEDICAL EMERGENCIES II

Objectives

Develop a basic understanding of causes, signs, symptoms and techniques of care of:

- Diabetic patients
- Patients suffering from acute abdominal problems
- Patients with communicable diseases
- Emotionally disturbed and unruly patients, including patients in a drug stupor or intoxicated
- Epileptic patients
- Unconscious patients

Requirements

Number of Instructors

- One instructor

Instructor References

- AAOS, Chapters 39, 42, 43, 45, 48

Materials, Equipment

- Chalkboard with chalk and eraser

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Briefly summarize previous lesson emphasizing the following points: a. For poison patients, the importance of immediate transport, checking with medical facility or Poison Control Center and diluting if in doubt b. The need for calmness, reassurance and careful handling in the case of heart attack and stroke patients c. The importance of checking with patient having an acute asthmatic attack regarding what works best for him d. The importance of immediate transport and simultaneous care for patients suffering from anaphylactic shock	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:20) 0:15	DIABETES 1. Describe signs and symptoms of unconscious individual in insulin shock and ask a member of the class to suggest what is most likely wrong with the patient 2. Explain briefly the process by which the body handles blood sugar and what happens in the case of diabetes: a. Body cells need sugar--sugar in the blood	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	b. Insulin permits sugar to pass from blood to body cells c. Inadequate insulin--blood sugar increases--cells starved d. Too much insulin--blood sugar decreases--brain starved Diabetes usually caused by inadequate insulin corrected by diet, pills or injections 3. Ask a member of the class to differentiate between the causes of diabetic coma and insulin shock: a. Diabetic coma 1) Inadequate insulin--blood sugar up--cell sugar down 2) Not taken insulin--overeating--infection b. Insulin shock 1) Too much insulin--blood sugar down--cell sugar up--brain starved 2) Taken too much insulin--not eating--excessive exercise 4. Describe the signs and symptoms of diabetic coma and insulin shock, indicating that it is sometimes difficult to differentiate between diabetic coma and insulin shock 5. Point out that a diabetic usually carries some special identification which will confirm the fact that he is a diabetic 6. Describe the care for diabetic coma, i.e., transport to hospital; and insulin shock, i.e., administer sugar to conscious and unconscious patient and transport to hospital	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	7. Indicate that if in doubt whether patient is conscious or unconscious--administer sugar and transport to hospital; explain why	
(0:35) 0:10	ACUTE ABDOMEN 1. Define for the class "acute abdomen" and identify some of the possible causes 2. Ask a member of the class to identify the general signs and symptoms of an acute abdominal disease, i. e.: a. Abdominal pain and tenderness--local or diffuse b. Reluctance to move c. Rapid shallow breathing d. Rapid pulse e. Low blood pressure f. Abdominal distention g. Nausea or vomiting; possibly diarrhea h. Possible shock i. Position in bed j. Pulse and blood pressure; possibly altered 3. Indicate that signs and symptoms and their degree will vary depending upon the cause but EMT need not diagnose cause since care provided by EMT is generally the same 4. Describe general care of a patient with an acute abdomen emphasizing: a. Transport to hospital immediately b. Keep airway clear of vomitus c. Administer oxygen as necessary d. No liquids or food e. No medication f. Record signs and symptoms including pulse and blood pressure g. Prevent shock h. Position patient comfortably	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(0:45) 0:10	COMMUNICABLE DISEASES 1. Identify the most common communicable diseases likely to be encountered by emergency care personnel 2. Describe precautions to be taken when handling known communicable diseases: a. If nature of call is known in advance: 1) Wear old (but clean) clothes 2) Wear masks and smocks 3) Remove unnecessary equipment from ambulance 4) Use as much disposable equipment as possible b. Upon return: 1) Place clothes and linen in container for special handling using rubber gloves to handle linen 2) Shower 3) If exposed to. Small pox - revaccination Diptheria - Schick test Scarlet fever - Dick test Meningitis - Check MD Syphilis - Check MD if bitten or scratched 4) Follow prescribed procedures for sanitizing and decontaminating the vehicle and its equipment 3. Identify any additional procedures required by state laws or local ordinances	
(0:55) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(1:05) 0:20	THE EMOTIONALLY DISTURBED AND UNRULY PATIENT 1. Identify some of the causes of abnormal behavior: a. Emotional shock b. Diseases, e.g., diabetes, high blood pressure, epilepsy, severe infections (fever), etc. c. Alcohol d. Drugs e. Mental disorders 2. Briefly describe some of the characteristics exhibited by emotionally disturbed people: a. Persons around scene of accident may be hysterical due to emotional shock b. Persons with mental disorders may be violent, agitated, threatening or they may be depressed, "blue," or sad c. Persons under the influence of alcohol may be unruly, delirious, have hallucinations and tremors d. Persons undergoing withdrawal from drugs may be depressed, nervous, antagonistic 3. Describe the local ordinances relating to the handling of emotionally disturbed persons, emphasizing the importance of obtaining police assistance if in doubt 4. Describe general management of emotionally disturbed persons indicating there are no specific rules since each situation is different: a. Evaluate the situation considering causes and possible dangers b. Display an attitude of sincerity, calmness, confidence and willingness to help c. Reassure, calm and encourage patient d. Don't be in a hurry, give patient time to quiet down e. Be honest f. Don't use force	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	g. Use restraints only if necessary and under orders from physician or law enforcement officer; be careful not to injure person h. If patient is female, have another female ride in ambulance 5. Describe the special considerations associated with alcohol, i.e., masking, respiration, DT's 6. Describe special considerations associated with drugs: a. Types of drugs and their effects b. Signs of users, e.g., needle marks, needles, capsules, syringes c. Signs of acute drug poisoning d. Signs of withdrawal e. Management and care of drug users and acute drug poisoning 7. Discuss the procedures and precautions associated with the use of restraints	
(1:25) 0:10	EPILEPSY AND CONVULSIONS 1. Describe what epilepsy is, its causes and the characteristics of a petit-mal and grand-mal seizure, emphasizing that in a grand-mal seizure, the individual: a. May seem to have an airway obstruction and become cyanotic b. May bite his tongue c. May hurt himself because of violent jerky movements 2. Ask a member of the class to describe how to manage a person undergoing a grand-mal seizure, making certain that the following points are covered: a. Difficulty in breathing usually not serious problem b. Prevent person from biting tongue	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Loosen clothing d. Protect person from injury by guiding or controlling movements, do not restrain e. Do not question or embarrass him f. Protect him from onlookers g. Encourage him to rest after seizure	
(1:35) 0:10	THE UNCONSCIOUS STATE 1. Describe what unconsciousness is, the fact that it can be brief (fainting) or prolonged (coma), the common causes and the difficulty sometimes of determining the cause	
	2. Review briefly the conditions, symptoms and management of red, white and blue unconsciousness, emphasizing the general measures taken in all cases of unconsciousness: a. Maintaining an open airway through proper positioning; possibly pulmonary or cardio-pulmonary resuscitation b. Not moving the patient unnecessarily, keeping him lying down on his side c. Never giving anything by mouth	*
(1:45) 0:15	PRACTICE--SYMPTOM RECOGNITION AND EMERGENCY CARE 1. The instructor should describe signs and symptoms of the medical emergencies covered in the lesson. Members of the class should discuss the cause or causes and indicate how they would care for the patient. Emergencies should include: a. Insulin shock b. Ulcers c. Overdose of drugs d. Epilepsy	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(2:00) 0 (2:00)	**SUMMARY OF LESSON** None--the summary of this lesson was included in the practice session	

Time: 3 hrs

LESSON 16

CHILDBIRTH AND PROBLEMS OF CHILD PATIENTS

Develop a basic understanding of the following:

- Parts of the female anatomy involved in childbirth
- Parts developing during pregnancy
- Obstetrical terms and their meaning
- Equipment and supplies used during emergency childbirth
- Emergency care procedures for various phases and conditions associated with pregnancy and childbirth
- Delivery and care of baby during normal and abnormal births
- Clamping and cutting umbilical cord
- Use of special carrier for premature babies
- Resuscitation of infant
- Procedures for caring for certain childhood problems

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 46 and 47

Materials, Equipment

- Emergency delivery pack
- Obstetrical manikin (if available) (one for each 10 students)
- Special carrier for premature babies (one for each 10 students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Films

- Emergency Childbirth
- Sound projector and screen

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Describe the signs and symptoms of insulin shock. Ask a member of the class to suggest what is wrong with the patient and describe emergency care for the patient 2. Ask a member of the class to describe precautions he would take if he were transporting a patient with a known communicable disease	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to class the objectives of the lesson	
(0:20) 0:15	RELEVANT ANATOMY, PHYSIOLOGY, TERMS AND EQUIPMENT 1. Briefly define the following: a. Ovary b. Fallopian tube c. Uterus or womb d. Cervix e. Vaginal or birth canal f. Perineum g. Fetus h. Umbilical cord i. Placenta j. Amnionic sac k. Labor--first, second and third stage l. Bloody show m. Crowning n. Presenting part o. Breech delivery	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	p. Prolapsed cord q. Premature delivery r. Abortion or miscarriage 2. Display and describe contents of an emergency delivery pack: a. Surgical scissors b. Hemostat clamps c. Umbilical tape or sterilized cord d. Ear syringe e. Towels f. Gauze sponges g. Rubber gloves h. Baby blanket i. Sanitary napkins j. Plastic bags	
(0:35) 0:05	INITIAL CONSIDERATIONS 1. Ask a member of the class to identify first decision to be made in an emergency childbirth case (transport or not to transport) and the considerations involved in making the right decision, i.e., number of deliveries, straining, crowning 2. Identify precautions associated with transport decision: a. Look, don't touch b. Do not let mother go to toilet c. Do not hold mother's legs together to delay delivery d. Rarely are first babies emergencies e. Do not transport if evidence of crowning	
(0:40) 0:30	DELIVERY OF THE BABY 1. Show film "Emergency Childbirth"	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Explain to the class that detailed procedures for assisting in normal and abnormal deliveries as well as procedures for care of the infant will be demonstrated in the session to follow	
(1:10) 0:10	TEN-MINUTE BREAK	
(1:20) 0:15	DEMONSTRATION	
	1. Divide class into groups of 10	
	2. Using an obstetrical manikin, if available, demonstrate and discuss steps involved in assisting a mother to deliver a baby, emphasizing that mother delivers the baby, technician merely helps mother and protects baby. Have different members of the class assist the instructor in the various procedures as appropriate:	
	a. Normal delivery	
	1) Position and drape mother 2) When head appears, gently push against it so it comes out slowly 3) If amnionic sac does not break, use clamp to puncture and push sac away from baby's mouth and nose so that he can breathe 4) Check if umbilical cord is around neck; slip over shoulders or clamp, cut and unwrap 5) Slight traction on head toward floor to deliver upper shoulder, if necessary 6) Slight traction on head toward ceiling to deliver lower shoulder, if necessary 7) Support head with one hand, shoulders then body and legs with other hand; body slippery and explodes 8) Guard cord 9) Hold baby by ankles to drain mucus	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	10) Lay baby on mother's abdomen; on side, head lower than body 11) Wipe blood and mucus from nose and mouth 12) Suction nose and mouth with rubber bulb aspirator 13) Clamp, cut and tie umbilical cord 14) Wrap child in blanket and keep warm 15) Observe mother for delivery of placenta--few to 20 minutes; if over 20 minutes, transport to hospital; if hemorrhaging, transport to hospital 16) When delivered, wrap placenta in towel and put in plastic bag; 1/2 pint blood normal 17) Place sterile pad over vaginal opening, lower mother's legs, help her hold them together 18) Record time of delivery and transport mother, baby and placenta to hospital	
(1:35) 0:15	b. Resuscitation of the newborn 1) Suction airway 2) Lay baby on side, head lower than body 3) Snap index finger against bottom of feet; if no response-- 4) Apply gentle mouth-to-mouth/nose resuscitation 5) Continue resuscitation until breathing starts; then oxygen 6) Apply cardiopulmonary resuscitation if no pulse after two minutes 7) Continue cardiopulmonary resuscitation until baby breathes or is pronounced dead	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(1:50) 0:10	c. Breech delivery 1) Make same preparations as for normal delivery 2) Allow buttocks and trunk to deliver spontaneously 3) Support legs and trunk 4) Allow head to deliver spontaneously 5) If head does not deliver in three minutes, create air passage by inserting index and 2nd finger in vaginal canal, separate fingers around nose and push away from nose 6) Maintain airway until head is delivered 7) Do not allow head to be delivered forcefully and do not pull baby out 8) After head delivers continue as in normal birth 9) If head does not deliver in three minutes, maintain airway and transport 10) If only foot or arm protrudes, transport to hospital immediately	
(2:00) 0:10	d. Prolapsed cord 1) Put mother in shock position--legs elevated, give oxygen, keep mother warm 2) With sterile gloved hand, push baby's head up into vagina three to four inches 3) Do not replace or put pressure on cord 4) Transport immediately while maintaining pressure on baby's head	
(2:10) 0:10	e. Excessive bleeding (1/2 to 1 cup of blood) 1) Prevent shock 2) Place sterile sanitary napkin at opening of vagina	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3) Do not hold legs together or put hand or anything in vagina 4) Preserve any tissue passed 5) Administer oxygen 6) Massage lower abdomen if waiting for placenta 7) Transport immediately 3. Ask a member of the class to describe what an abortion or miscarriage is and the prescribed care; emphasize that patient should not be examined vaginally nor should technician pull on fetus or cord 4. Ask a member of the class to indicate what would make him suspect that a second baby was imminent after one was delivered and what unique care is involved	
(2:20) 0:10	5. Describe the characteristics of a premature infant, how to check for same and the care involved, emphasizing: a. Warmth b. Keeping the mouth and throat clear of fluid and mucus c. Ensuring cord does not bleed d. Administration of oxygen; demonstrate e. The danger of infection f. Alert hospital 6. Display and demonstrate the use of carriers for premature infants. Have members of the class assist: a. Fill hot water bottles, cover and place in carrier b. Upon arrival wash hands in alcohol c. Remove mucus from mouth and throat of infant d. Wrap infant in blanket or napkin	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	e. Place infant in carrier f. Start oxygen (before infant is placed in carrier) g. Be sure top of carrier and carrier is secure h. Alert and transport to hospital with member of family 7. Ask members of the class to identify pre-delivery emergencies likely to be encountered (convulsions, heart disease, accident) and the prescribed care for each situation	
(2:30) 0:25	PROBLEMS OF CHILD PATIENTS 1. Reassemble class 2. Discuss with the class the common problems associated with child patients, e.g.: a. Fear 1) Of the accident scene--confusion, noise, cries of the injured, view of injured particularly if injured are parents 2) Of their own injuries, blood, pain 3) Of strangers--therefore, they will fear the emergency medical technician and the care he provides 4) Of being confined, as in splints 5) Of being trapped, as in vehicles, wells, cave-ins 6) Of being separated from parents b. Inability to communicate 1) Too young to communicate verbally 2) Too frightened to communicate 3) Too young to understand what has happened	

Time Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Emphasize the importance of being reassuring, calm and understanding with child patients, especially: a. Importance of using simple language and a soft voice b. Importance of being very gentle in feeling for injuries c. Importance of transporting child and parents together if possible 4. Ask a member of the class to name and discuss one of the common emergencies of childhood. Continue with other members of the class until all have been covered: a. Convulsions or seizures--causes and care b. High fever--causes, complications and care c. Poisoning--common causes, signs and symptoms and emergency care d. Head trauma--checking for brain damage and managing the child with a brain injury e. Fractures and other injuries f. Contagious diseases--precautions and de-contamination procedures for self and vehicle	
(2:55) 0:05	SUMMARY OF LESSON 1. Briefly summarize the lesson emphasizing the following points: a. The mother delivers the baby; the EMT merely assists. However, he must know proper procedures for assisting the mother and for caring for both mother and child b. The EMT should not transport the mother if the birth of the child is imminent	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. The EMT should never place his hand in the vagina except in the case of a prolapsed cord or a breech birth when the baby's head fails to deliver within three minutes d. The EMT should transport immediately if any of the following conditions exists: 1) Prolapsed cord 2) Breech birth where head fails to deliver 3) A hand or foot delivers 4) Mother is bleeding excessively 5) Baby has not delivered after 20 minutes of watching mother have frequent contractions e. Child patients need special reassurance and kindness since they frequently will be afraid and unable to communicate with the EMT	
(3:00)		

Time: 3 hrs

LESSON 17

LIFTING AND MOVING PATIENTS

Objectives

Develop a basic understanding of the following:

- Principles of moving and positioning patients for transportation
- One-man emergency carries
- Techniques of moving patients from a bed- or floor-height surface to a stretcher
- Techniques of moving patients with suspected spinal injuries and immobilizing them on a backboard
- Techniques of moving stretchers around narrow corners and down stairways
- Loading stretchers on ambulance, securing them in place, and unloading them

Teach the following skills:

- Two-man lifts from a bed- or floor-height surface to a stretcher
- Immobilizing patients with spinal injuries on backboards
- Loading and unloading stretchers

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapter 50
- Cole and Puestow, Chapter 10

Materials, Equipment

- Wheeled stretcher
- Pole stretcher
- Scoop stretcher (if available)
- Stair chair (if available)
- Folding stretcher (if available)
- Stokes basket (if available)
- Ambulance
- Long backboard with two 9-foot straps (2 for each 10 students)
- Blankets (4 for each 10 students)
- Cervical collar or universal dressing (2 for each 10 students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Emphasize that in childbirth the mother delivers the baby, the EMT merely assists 2. Ask a member of the class to explain how he would know that the birth of a baby was imminent 3. Ask a member of the class to identify emergency conditions in childbirth which would require immediate transportation of the mother to the hospital 4. Ask a member of the class to discuss basic problems in dealing with child patients	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson 2. Note that this lesson will be confined to lifts that can be accomplished by the normal two-man complement on an ambulance	
(0:20) 0:15	GENERAL PRINCIPLES OF MOVING AND POSITIONING PATIENTS 1. Briefly review with the class the general principles involved in moving patients, e.g.: (Cole and Puestow, Chapter 10) a. Patient care should precede movement except in those instances where delayed movement would imperil the life of the patient or rescuer, e.g.:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1) Noxious gases present 2) Danger of fire 3) Danger of explosion 4) Danger of collapse of structure	
	b. Importance of moving all patients carefully to minimize danger of further injury or aggravation of existing injuries or illnesses	
	c. Importance of suspecting spinal injuries in trauma cases particularly unconscious patients, and the necessity to maintain in-line traction to minimize further damage to the patient	
	d. Importance of explaining to conscious patient what you plan to do before moving him	
	2. Explain positioning of patients with suspected cervical or thoracic spine injuries:	
	a. Cervical spine injury--preferably face up, head and neck immobilized, rolled towel beneath neck	*
	b. Thoracic spine injury--on abdomen is preferable but should be maintained in position found; if on back must provide support beneath curve of spine	*
	3. Ask a member of the class to describe the position advised for transporting unconscious patients and to explain the reason for the position	
	4. Ask a member of the class to suggest illnesses for which a patient might be more comfortable in a semi-sitting position, e.g.:	
	a. Heart attack b. Stroke c. Asthmatic attack	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	5. Emphasize that conscious patients should be allowed to be transported in the position that is most comfortable to them. Again, emphasize the importance of reassuring the patient and telling him what you plan to do	
(0:35) 0:20	STRETCHERS 1. Describe and demonstrate operation of: a. Wheeled stretcher b. Pole stretcher 2. Describe the operation and use of the following equipment (demonstrate equipment if available): a. Scoop stretcher b. Stair chair c. Long backboard d. Folding stretcher e. Stokes basket 3. Explain technique of carrying stretcher 4. Explain dangers to the EMT (e. g., back problems, hernia problems) if lifts and carries are not performed correctly) 5. Demonstrate techniques for manipulating stretchers in narrow hallways, around corners, and down stairs. Emphasize importance of securing the patient in the stretcher so that he cannot fall out	
(0:55) 0:10	TEN-MINUTE BREAK	
(1:05) 0:10	ONE-MAN EMERGENCY CARRIES 1. Demonstrate one-man techniques used to quickly evacuate patients in situations where delayed movement would imperil the life of the patient or the EMT	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(1:15) 0:15	TWO-MAN LIFTS FROM BED- OR FLOOR- HEIGHT SURFACE TO STRETCHER 1. Using members of the class as patient and assistant, demonstrate moving a supine patient from a bed-height surface to a stretcher by two men, emphasizing the importance of positioning and orienting stretcher to minimize distance patient is moved. 2. Demonstrate technique for moving a patient from a floor-height surface to a stretcher 3. Emphasize that these lifts do not provide adequate support for fractured backs or necks; they are intended for short distance transfer from bed or floor to ambulance cot or from cot to bed	
(1:30) 0:20	IMMOBILIZATION ON THE BACKBOARD 1. Using members of the class as patient and assistant, demonstrate two-man technique for moving a patient with a suspected spine injury and immobilizing him on a backboard. 2. Using members of the class as patient and assistants demonstrate other techniques for moving patient onto backboard when more than two persons are available to assist	
(1:50) 0:50	PRACTICE Note: The time frame assumes that there will be no more than 10 students per instructor and that the equipment specified will be available. If there are more than 10 students per instructor or less equipment than that specified, additional time will be required for practice. 1. Divide class into groups of 10	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Have class members work in groups of three (one serving as patient) until each has practiced the following: a. Moving a heart attack patient from a bed-height surface and positioning him properly on a stretcher using a two-man lift b. Moving a patient with a suspected cervical spine fracture from the floor to a backboard using a two-man lift. Include immobilization of neck and securing individual on backboard 3. Time permitting, consolidate members of class into groups of five (one serving as patient) and have each group practice moving patient from the floor onto a backboard	
(2:40) 0:20	DEMONSTRATION AND PRACTICE--LOADING AND UNLOADING STRETCHER PATIENTS 1. Using members of the class as patients, demonstrate and have class practice loading a stretcher in an ambulance, securing it in place, and unloading the stretcher	
(3:00) 0 (3:00)	SUMMARY OF LESSON None	

Time: 3 hrs

LESSON 18

PRACTICE, TEST AND EVALUATION-- MEDICAL EMERGENCIES, EMERGENCY CHILDBIRTH, LIFTING AND MOVING

Objectives

Test basic knowledge and skills associated with:

- Poisoning
- Bites and stings
- Heart attack
- Stroke
- Dyspnea
- Diabetes
- Acute abdomen
- Transporting patients with communicable diseases
- The emotionally disturbed and unruly
- Epilepsy
- The unconscious state
- Emergency childbirth
- Lifting and moving patients

Provide practice on and evaluate the following skills:

- Two-man lifts from a bed-height surface to a stretcher
- Immobilizing patients with spinal injuries on backboards
- Cardiopulmonary resuscitation by a lone rescuer
- Cardiopulmonary resuscitation as a member of a team using the bag-mask resuscitator

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48 and 50
- Cole and Puestow, Chapter 10

Materials, Equipment

- Written test covering topic area (one for each student)--see Appendix A for guidance in test design
- Checklists for evaluating student skills (one for each student)--see Appendix A for guidance in design of checklists
- Long backboard with two 9-foot straps (one for each 10 students)
- Cervical collar or universal dressing (one for each 10 students)
- Blanket or mat (one for each 10 students)
- Cardiopulmonary resuscitation manikin (one for each 10 students)
- Bag-mask resuscitator (one for each 10 students)
- Wheeled stretcher (one for each 10 students)

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(-:-) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0	REVIEW OF PREVIOUS LESSON None--entire lesson is review, practice and evaluation	
(0:05) 0:05	LESSON OBJECTIVES 1. Briefly explain the objectives of the lesson	
(0:10) 0:30	TEST OF KNOWLEDGES 1. Distribute test and explain procedures for taking test, time allocated, etc. 2. Be sure test covers the subject matter taught in Lessons 14 through 17, e.g.: a. Poisoning b. Bites and stings c. Heart attack d. Stroke e. Asthmatic states f. Diabetes g. Acute abdomen h. Transporting patients with communicable diseases i. The emotionally disturbed and unruly j. Epilepsy k. The unconscious state l. Emergency childbirth m. Lifting and moving patients Note: Test should include integration of knowledges taught to date wherever possible.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(0:40) 2:20	PRACTICE AND EVALUATION OF SKILLS Note: The time frame for practice and evaluation assumes that there will be no more than 10 students per instructor and that the equipment specified will be available. If there are more than 10 students per instructor or less equipment than that specified, additional time will be required for practice and evaluation. 1. Distribute checklists for evaluating skills and explain procedures to be followed in practice and evaluation of skills, e.g.: a. Each student will be given the opportunity to practice each skill as needed until he demonstrates proficiency in the skill b. Instructor will sign the checklist for each skill as evidence of satisfactory demonstration of that skill by the student 2. Divide class into groups of 10 3. Have class members work in groups of three (one serving as the patient). Each individual should practice until he has demonstrated proficiency as a member of a team performing the following: a. Moving a supine patient with a suspected cervical fracture from the floor and immobilizing him on a backboard b. Moving a patient from a bed-height surface and positioning and securing him properly on a stretcher; carrying stretcher a short distance; and returning him to bed-height surface	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	4. Have each student practice cardiopulmonary resuscitation alone until he can successfully resuscitate a manikin for a minimum of 2 minutes. His performance should demonstrate that he is knowledgeable in technique including airway care, location of hands on sternum, rates of ventilation and compression, and volume of ventilation and compression	
	5. Have each student practice cardiopulmonary resuscitation as a member of a team until he can successfully resuscitate a manikin for a minimum of 2 minutes. The ventilator should use a bag-mask resuscitator. Each student should perform in both roles--as a ventilator and as a sternum compresser. His performance should demonstrate that he is knowledgeable in technique including airway care, location of hands on sternum, rates of ventilation and compression, and volume of ventilation and compression	
(3:00) 0	SUMMARY OF LESSON	
	None	
(3:00)		

Time: 2 Hrs 30 min

LESSON 19

ENVIRONMENTAL EMERGENCIES

Objectives

Develop a basic understanding of the following:

- Estimation of severity of burn
- Techniques of care for the burned patient
- Special dangers of different types of burns -- heat, chemical, electrical, radiation
- Signs, symptoms and techniques of care for the patient suffering from heat cramps, heat exhaustion, heat stroke and frostbite
- Techniques of rescuing and caring for the drowning person
- Signs, symptoms and techniques of care for the patient suffering from air embolism, bends, squeeze injuries, oxygen poisoning and nitrogen poisoning
  Major dangers of explosions

Requirements

Number of Instructors

- One instructor

Instructor References

- AAOS, Chapters 31, 32, 33, 34, 35, 36 and 37
- Supplementary reference: Cole and Puestow, Chapter 9

Materials, Equipment

- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:20	REVIEW OF PREVIOUS LESSON 1. Review answers to the written test given in Lesson 18 pointing out correct answers and discussing common errors made 2. Discuss with the class their overall performance in the practice and evaluation session pointing out common errors made by the students, if any, in: a. Two-man lifts b. Immobilization on backboard c. Cardiopulmonary resuscitation d. Use of bag-mask resuscitator	
(0:25) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:30) 0:20	BURNS 1. Indicate the four causes of burns and that initial emergency care will vary somewhat with cause and severity of burn: a. Heat b. Chemicals c. Electricity d. Radiation	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	Heat Burns	
	1. Ask a member of the class to describe symptoms and seriousness of: a. First degree burns b. Second degree burns c. Third degree burns	
	2. Describe first, second and third degree burns pointing out distinguishing signs	*
	3. Explain the "rule of nines" indicating variations for adults and children	*
	4. Emphasize that the seriousness of a burn is determined by: a. Degree of the burn b. Amount of the body burned c. Part of the body burned d. Age of the patient	
	5. Applying the "rule of nines," ask different members of the class to tell whether the following burns would be critical: a. Second degree burns of the chest, abdomen and both arms b. Third degree burns of the face c. Third degree burns of the left arm excluding the hand d. Third degree burns of the left leg excluding the foot	*
	6. Emphasize that any burns complicated by respiratory tract injury, major soft tissue injury and fractures must be considered critical	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	7. Point out that children and the elderly are more susceptible and that if they sustain second degree burns of more than 14% of the body they should be considered critical 8. Discuss with the class the basic care of minor burns 9. Discuss with the class the basic care of serious burns: a. Relieve pain--use clean, cold applications if available b. Prevent contamination--clean covering c. Care for any complications that might arise from severe burns: 1) Prevent shock 2) Maintain airway d. Transport immediately	
(0:50) 0:05	Chemical Burns 1. Discuss with the class the types of chemical burns and the seriousness of each: a. Acids b. Alkalis 2. Emphasize that the basic care of chemical burns is copius irrigation since chemicals continue to burn as long as they are in contact with the body (note exception for lime) 3. Explain use of ethyl alcohol for irrigating burns from non-water soluble chemicals 4. Ask a member of the class to indicate how he would care for a patient with chemical burns once the burned area had been sufficiently irrigated, e.g., cover with sterile sheet and transport to medical facility	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(0:55) 0:15	Electrical Burns 1. Discuss with the class the dangers of electricity, even low voltage, emphasizing that although removal of a patient from an electric source should be accomplished only by trained personnel, the EMT should have an appreciation for the dangers of electricity and the proper procedures he should follow in dealing with a situation involving electricity 2. Describe a situational example in which wires have fallen on a car and explain the following: a. Role of the EMT--e.g., encourage passengers to remain in car, call for qualified help, keep the crowd back from the danger zone b. The danger zone and reason for its large size c. Procedures followed by trained electrical workers 3. Ask a member of the class what, aside from burns, is the basic danger to a human being from electricity and ask him to describe how he should care for the patient 4. Describe electrical burns emphasizing that they extend deep into the body and will have a point of entrance and exit 5. Discuss emergency care for electrical burns	
(1:10) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(1:20) 0:15	**Radiation Burns** 1. Indicate that there are two types of radiation burns, nuclear and solar. Since solar burns are basically sunburns, they should be treated as any other first or second degree burn. The remainder of the session will therefore be devoted to nuclear burns 2. Explain that radiation is a form of energy 3. Describe the dangers of alpha, beta and gamma rays to the human body 4. Explain how radiation affects the body cells and what is meant by radiation sickness 5. Emphasize that the degree of radiation sickness depends on the type of radiation and part of the body exposed 6. Ask a member of the class to explain how he could control his exposure to radiation. Critique his comments emphasizing the following points: a. Duration of exposure b. Amount of body exposed c. Distance between body and source of radiation d. Shielding between body and source of radiation 7. Explain the special dangers involved when radioactive material is inhaled or swallowed and special precautions to follow around radioactive materials to avoid inhaling or swallowing them 8. Describe the Interstate Commerce Commission regulations regarding shipping of radioactive materials	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	9. Describe labelings commonly found on containers of radioactive materials and sometimes on vehicles transporting radioactive materials	*
	10. Explain the use of a Geiger counter in detecting gamma rays	
	11. Explain that, if a hazardous radiation level exists, the patient should be removed from the area as quickly as possible even if some of the rules of initial emergency care are violated	
	12. Explain procedures to follow if there is reason to suspect that there are radioactive materials on the patient's or rescuer's clothes	
	13. Explain procedures for decontaminating oneself, one's clothing, equipment and the vehicle if exposed to radioactive materials emphasizing that decontamination of the vehicle and its equipment must be carried out under AEC direction	
	14. Explain that, when radiation injury and burn injury occur in the same victim, each tends to make the other worse so that a 20% second degree burn might fall into the severe category if there were significant radiation	
(1:35) 0:15	HEAT EXPOSURE	
	1. Explain the function of the sweating mechanism in ridding the body of excess heat	
	2. Identify the three separate illnesses caused by heat exposure: a. Heat cramps b. Heat exhaustion c. Heat stroke	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3. Ask a member of the class to describe the signs, symptoms and emergency care for a patient suffering from heat cramps 4. Ask a member of the class to describe the signs, symptoms and emergency care for a patient suffering from heat exhaustion. Critique his comments emphasizing that the signs are the same as for many other problems 5. Ask a member of the class to explain the signs, symptoms and cause of heat stroke, e.g., exceedingly high temperature and dry skin caused by a breakdown in the sweating mechanism 6. Describe emergency care for a patient suffering from heat stroke emphasizing that heat stroke is a real emergency and that the body must be cooled immediately	
(1:50) 0:10	COLD EXPOSURE 1. Describe the two major effects of cold on the body and the various degrees of consequences: a. General cooling of the body--shivering, apathy, unconsciousness, freezing of extremities, death b. Local cooling of the body--frost nip, superficial frostbite, deep frostbite 2. Describe other conditions resulting from cold exposure, i.e., chilblains, trench foot, and immersion foot and the emergency care measures for each 3. Ask member of the class to identify factors which determine degree of injury associated with cold exposure, i.e., length of exposure, temperature, wind and amount of protection 4. Discuss the signs, symptoms and care for cold exposure resulting in general cooling of the body; emphasize the acuteness of the emergency and the importance of the patient not smoking	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	5. Describe the signs, symptoms and care of frostbite cautioning against rubbing, manipulating or applying snow or cold water to affected parts. Point out the need to transport a victim of frostbite on a stretcher after the limb has thawed 6. If appropriate for the area, describe requirements, procedures and cautions associated with arctic type search and rescue missions	
(2:00) 0:20	DROWNING 1. Explain the stages of drowning: a. Fatigue b. Panic c. Swallowing water d. Spasm of the larynx e. Unconsciousness f. Cell damage 2. Emphasize the importance of speedy resuscitative efforts and that drowning patients should be brought to the surface within a very few minutes if they are to survive 3. Briefly discuss recovery of a drowning patient emphasizing that only trained water rescue personnel should attempt a swimming rescue: a. Position of the body in the water relative to where drowning occurred b. Throwing items that float to the victim c. Using a boat for rescue d. Importance of speedy resuscitative efforts as soon as the patient is brought to the surface 4. Describe technique of care for the drowning patient including:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Pulmonary resuscitation b. Cardiopulmonary resuscitation as necessary c. Oxygen administration 5. Emphasize that it is more important to start resuscitative efforts immediately than to attempt to drain water from the stomach 6. Ask a member of the class to explain how any unconscious patient could drown from his own secretions and techniques of care for the unconscious patient 7. Explain causes and effects of air embolism and bends 8. Describe signs and symptoms of air embolism and bends: a. Blotching or itching of skin b. Froth in nose and mouth c. Pain in muscles, joints, tendons, abdomen d. Difficult breathing with chest pain e. Dizziness and vomiting f. Difficulty in seeing properly g. Possible paralysis and coma 9. Ask a member of the class to describe how he would care for a patient suffering from air embolism or bends 10. Give the class the address of the nearest recompression chamber 11. Briefly explain the causes, symptoms and techniques of care for: a. Squeeze injuries b. Oxygen poisoning c. Nitrogen poisoning	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(2:20) 0:05	EXPLOSIONS 1. Briefly explain the two types of pressure occurring in explosions 2. Ask a member of the class to discuss typical injuries resulting from explosions. Critique his comments emphasizing that in addition to obvious injuries the rescuer should suspect internal injuries 3. Emphasize the need for extreme gentleness in handling patients because of the danger of internal damage as well as the importance of self-protection for the rescuer in dealing with explosion situations	
(2:25) 0:05	SUMMARY OF LESSON 1. Briefly summarize the lesson emphasizing the following points: a. The seriousness of a burn is determined by the degree of the burn, the amount of the body burned and the part of the body burned b. Only properly trained individuals should attempt to rescue an individual from an electrical hazard c. Importance of care in handling patients exposed to radiation and special decontamination procedures d. Signs and symptoms of heat exposure and special dangers of heat stroke e. Importance of speedy resuscitative efforts for the drowning person f. Signs and symptoms of air embolism and bends g. Rescuer should suspect internal hemorrhage in explosion situations	
(2:30)		

Time: 3 hrs

LESSON 20

EXTRICATION FROM AUTOMOBILES

Objectives

Develop a basic understanding of principles of and considerations involved in extricating persons from automobiles

Teach the following skills:

- Techniques of removing patients with suspected spine injuries from automobiles
- Techniques of removing patients from beneath automobiles

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapter 53 and 54
- Supplementary reference: Farrington, J. D. Extrication of victims--surgical principles. J. Trauma, 1968, Vol. 8, No. 4, 493-512.

Materials, Equipment

- Vehicle (wreck) (one for each 10 students)
- Long backboard with two 9-foot straps (two for each 10 students)
- Short backboard (with two 9-foot straps) (two for each 10 students)
- Sling (one for each 10 students)
- Chin strap and padded head strap (one for each 10 students)
- Universal dressings (two for each 10 students)
- Triangular bandage (one for each 10 students)
- Blanket (one for each 10 students)
- Chalkboard with chalk and eraser

Charts, Slides

- Visual aids as indicated by an asterisk (*) if available
- Slide projector and screen as appropriate

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Ask a member of the class to indicate the factors to consider in estimating the seriousness of a burn, e. g. : a. Degree of the burn b. Amount of body burned c. Part of body burned d. Age of patient 2. Describe the signs and symptoms of a patient suffering from heat stroke and ask a member of the class to diagnose and describe emergency care 3. Ask a member of the class what injury he should suspect in all patients involved in explosions, e. g., internal injuries	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:20) 0:30	BASIC CONSIDERATIONS IN EXTRICATION 1. Discuss the role of the EMT in extrication, e. g. : a. His responsibility is to administer necessary care to the patient before extrication and to assure that the patient is removed from the vehicle in such a way as to minimize further injury b. If rescue crews are <u>not</u> present, he should be prepared to use prying and cutting tools to gain access to the patient and disentangle the vehicle from the patient	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. If rescue crews are present, he should cooperate with their activities but should not allow their activities to endanger the patient d. If rescue crews are present, the EMT should attend to the needs of the patient while rescue activities proceed if possible 2. Briefly review the basic principles of emergency care involved in extrication, e. g. : a. Patient care precedes extrication unless delayed movement would endanger the life of the patient or rescuer. Patient care should include: 1) Attention to life threatening emergencies 2) Immobilization of fractures b. Importance of suspecting cervical and thoracic fractures in unconscious patients and necessity of immobilization and in-line traction c. Importance of extricating all patients carefully to minimize danger of further injury or aggravation of existing injuries 3. Identify and define the various stages of extrication from automobiles: a. Gaining access to patients b. Attending to life threatening emergencies c. Disentanglement d. Preparation for removal e. Removal 4. Repeat that role of EMT in some of the above steps is dependent upon whether a rescue crew is present or not 5. Describe circumstances, requirements, factors to be considered and methods for gaining access to and disentangling the patient emphasizing the need for ingenuity and lighting	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	6. Describe a few examples of situations presenting difficult access and disentanglement problems and discuss solutions with members of the class	
	7. Identify the lifesaving emergency care performed during and after access (airway, artificial ventilation, controlling bleeding), pointing out the difficulty and ineffectiveness of CPR when performed with a patient in a sitting position	
	8. Describe emergency care measures involved in "packaging" or preparing a patient for removal: a. Dressing and bandaging wounds b. Immobilizing of extremity fractures using splints or patient's body c. Use of long and short spine boards with cervical collar or universal dressing	
	9. Describe a few examples of situations involving difficult removal problems and discuss solutions with members of class, e.g., overturned car with patient dangling from a seat belt or vehicle on its side	
	10. In addition to position of vehicle, there may be innumerable other complications, e.g.:	
	a. Entire patients or their extremities may be pinned beneath the vehicle and a rescue crew may be needed to hoist the vehicle before the patient can be moved	*
	b. Patients' heads or extremities may have been thrown through the windshield or windows and glass may need to be removed from around the part so affected before the person can be removed	*
	c. Patients may have sustained fractures of the extremities which need immobilization before extrication--emphasize difficulties of immobilizing fractures in confined place, advantages of plastic splints and need to improvise, e.g., by tying legs together	*

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	d. Patients' feet or legs may be caught beneath seats and seats may have to be removed before a patient can be moved	*
	e. There may be a full complement of passengers which will complicate the EMT's job of caring for patients in, and removing them from, an already confined space	*
	11. Emphasize the following points: a. Importance of carefully checking the patient for illnesses or injuries and caring for the patient before moving him b. Necessity to use one's ingenuity depending on the situation c. Importance of moving patients carefully to prevent further injury or aggravation of existing injuries d. Importance of working as a team	
(0:50) 0:10	TEN-MINUTE BREAK	
(1:00) 2:00	DEMONSTRATION AND PRACTICE Note 1: Included here are procedures for extricating patients from inside and underneath an upright vehicle. If it is possible for the instructor to obtain additional vehicles and if additional time is available, it would be advisable to include extrication of patients from a vehicle on its side and on its top. Ideally, wrecked automobiles should be used for this session to attain realism. The use of prying and cutting tools should be demonstrated and practiced. This will provide the EMT with training in gaining access to and disentangling victims in the event rescue crews are not present. Ability to accomplish this will be dependent upon availability of wrecks and tools.	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	Note 2: If there are more than 10 students per instructor or if there is less equipment than specified, additional time will be required for practice. 1. Divide class into groups of 10 2. Using members of the class as patients, demonstrate and have class practice the following: a. Removing an unconscious patient from the front seat of the vehicle: Include: 1) Immobilization of the neck by a cervical collar or universal dressing 2) Insertion of short backboard behind patient 3) Attachment of torso to board by means of two 9-foot straps 4) Fastening patient's head to backboard 5) Removal on the long backboard b. Removing an unconscious patient from the floor between the front seat and the firewall by means of the long backboard and sling. Include: 1) Immobilization of the neck 2) Proper placement of long backboard and sling 3) In-line traction for removal c. Removing an unconscious patient from the floor of the back seat by means of the short backboard. Include: 1) Immobilization of the neck 2) Immobilization of the head and back on the short backboard 3) Removing the patient from the vehicle by lifting over the front seat and out the door on the long backboard d. Removing an unconscious patient from beneath an upright car by means of the long backboard and sling	
(3:00)		

Time: 3 hrs

LESSON 21

OPERATIONS--DRIVING AN EMERGENCY VEHICLE, MAINTAINING A SAFE AND READY VEHICLE, RECORDS AND REPORTS, COMMUNICATIONS, AND PROCEDURES AT HOSPITAL EMERGENCY ROOMS

Objectives

Develop a basic understanding of the following:

- Laws relating to operating an emergency vehicle
- When and how to use emergency privileges
- Procedures for daily inspections of vehicle systems and equipment and inspections to be made after each run
- Information obtained and recorded by EMT's
- Importance of communications and typical communications procedures
- Procedures at hospital emergency rooms

Requirements

Number of Instructors

- One instructor

Instructor References

- AAOS, Chapters 55, 57, 58 and 60
- Supplementary reference: AAOS, Chapter 51

Materials, Equipment

- Typical dispatch form (to be prepared by instructor) (one for each student)
- Typical records and reports used by EMT's in the area (one for each student)
- Cervical collar or universal dressing
- Short backboard with two 9-foot straps
- Chin strap and head band
- Chalkboard with chalk and eraser

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Ask a member of the class to serve as the patient--he should be seated on a chair and simulate an unconscious patient in an automobile. Have two other students demonstrate immobilizing the neck with a cervical or universal dressing and immobilizing the patient on a short backboard. Critique their performance	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson 2. Emphasize that information discussed here will be generally related to procedures and equipment in the areas in which the course is being given. However, the EMT should realize that procedures may vary with individual purveyors	
(0:20) 0:50	DRIVING AN EMERGENCY VEHICLE 1. Review all laws, regulations or ordinances in the area relative to the operation of an emergency vehicle. Point out commonly accepted procedures in other communities where these are divergent from local procedures. Include as appropriate: a. Vehicle parking or standing regulations b. Procedures at red lights, stop signs and other intersections c. Regulations regarding speed limits d. Exemptions from following direction-of-movement regulations or specified turns	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	e. Standard emergency or disaster routes f. Use of audible signals, e.g., sirens g. Use of visual signals, e.g., lights 2. Emphasize that, although drivers of emergency vehicles are exempt from many traffic regulations, these privileges should be exercised with caution. The responsible driver recognizes that: a. There is no guarantee that other drivers will grant the right of way to emergency vehicles b. His primary responsibility is a safe and comfortable ride for the patient c. He practices defensive driving d. He maintains safe following distances e. He has his vehicle under control at all times and drives appropriately for the given weather conditions 3. Ask a member of the class to discuss the most common types of intersection accidents and proper procedures to follow at an intersection 4. Ask a member of the class to discuss limitations of and problems involved in using sirens on emergency vehicles, e.g. a. Use should be confined to true emergency b. Advisability of varying pitch to improve audibility c. Problems in hearing sirens by individuals in closed cars d. Adverse effect of siren on patient 5. Discuss the use of lights in clearing the right of way 6. Ask a member of the class to discuss how travel time to and from an emergency scene can be minimized without using excessive speed. Make sure the following points are covered:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. Knowledge of the area so that the shortest route is taken b. Knowledge of alternate routes to be taken during rush hours c. Importance of communications for requesting police assistance at intersections, narrow bridges, toll gates, etc. 7. Distribute typical dispatch form and explain information on form emphasizing the importance of the dispatcher's obtaining as much information as possible on the exact location of the patient and the nature of the illness/injury 8. Emphasize that, in most ambulance runs, speed is unnecessary. In fact, a slow smooth ride is more beneficial to the patient 9. Ask members of the class to give examples of injuries/illnesses that represent true emergencies in which speed would be justified. As they are mentioned, write them on a chalkboard. Examples include: a. Severe chest injuries, e.g., crushed chest b. Poisons c. Severe uncontrollable bleeding d. Prolapsed cord in childbirth, breech birth when head fails to deliver, birth where only foot or hand delivers e. Severe anaphylactic reactions f. Severe shock g. Heat stroke h. Foreign body lodged in throat, if severe respiratory problem	
(1:10) 0:20	MAINTAINING A SAFE AND READY VEHICLE 1. Emphasize the importance of having a safe and operationally ready vehicle at all times. This includes not only routine vehicle maintenance but also daily inspections of the vehicle and its equipment as well as inspections after each run	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	2. Ask members of the class to suggest procedures that should be followed daily to assure an operationally ready vehicle. Write responses on the chalkboard. Responses should include: a. Inspection of vehicle systems 1) Gas 2) Oil 3) Water 4) Battery 5) Brakes 6) Tires 7) Wheels 8) Head lights 9) Stop lights 10) Turn signals 11) Emergency lights 12) Wipers 13) Horn 14) Siren 15) Windows 16) Door closing and latching devices 17) Communication equipment 18) Heating and ventilating systems b. Inspection and inventory of emergency care equipment and supplies--emphasize importance of having full complement of all equipment and supplies and of having a standard stowage place in the vehicle for each item c. Cleanliness of exterior and interior of vehicle 3. Ask members of the class to suggest procedures that should be followed after each run to assure an operationally ready vehicle, e.g.:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	a. There should be a sufficient supply of fuel depending on expected duration of runs b. There should be a full supply of emergency care equipment and supplies--reemphasize the importance of a standard stowage place in the vehicle for each item c. The interior of the vehicle and equipment and supplies should be cleaned or decontaminated as necessary 4. Discuss requirements for servicing every 1000 miles 5. Emphasize the importance of having checklists for procedures that must be performed on a routine basis, daily and after each run	
(1:30) 0:10	TEN-MINUTE BREAK	
(1:40) 0:30	RECORDS AND REPORTS 1. Briefly discuss with the class the fact that all organizations maintain records relating to personnel and operations, such as personnel history, accounting records, etc. Included here will be only those records related directly to an ambulance run. All information need not necessarily be placed on one form, e.g., certain information may be listed on dispatch forms, some on a patient care form, some may simply be collected and turned over to the proper authorities 2. Distribute copies of typical forms used in the area 3. Discuss with the class the importance of obtaining information and of maintaining records, e.g.: a. Provide for continuity of care b. Serve as a basis for correcting infractions	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Furnish source of information for evaluating quality of care d. Provide data for analysis of causes, types and degree of illness and injury requiring emergency care e. Furnish legal evidence 4. Emphasize that, although records are important, they never take precedence over emergency care 5. Describe typical information that should be obtained on each patient run as appropriate, e.g.: a. Patient's name, age, sex, address b. Type of injury or nature of illness 1) List vital signs if exact nature of illness/injury is unknown 2) If communicable disease, list prominently c. Cause of accident if known, e.g.: 1) Vehicle accident--single or multiple 2) Animal bite--type of animal 3) Violent case, e.g., suicide, homicide, rape 4) Radiation, chemical or gas hazard 5) Fire 6) Explosion d. Location of patient when first seen--be specific especially if vehicular accident on highway or violent case e. Rescue measures preceding emergency care f. Care given at site or during transport, including application of tourniquet, use of oxygen or other equipment or supplies	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	g. Changes in vital signs during transport h. Hospital to which patient was taken--emphasize importance of obtaining signature of emergency room personnel as evidence of receipt of patient i. Disposition of patient's valuables--importance of obtaining signature of individual receiving valuables j. Signature of patient or relatives if patient care is refused k. Procedures followed and disposition of patient in the event of death l. Dying statements m. Circumstances involved in homicide, suicide, rape n. Statements made by patient or others that might serve as legal testimony o. Administrative information, e.g.: 1) Date of call 2) Time of call 3) Name and telephone number of caller 4) Time of dispatch 5) Time of arrival at scene 6) Time of leaving scene 7) Time of arrival at emergency room 8) Time of leaving emergency room 9) Time to return to base 10) Patient's insurance company or medicare number as applicable 11) Name of dispatcher 12) Names of EMT's responding to the call	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	13) Type of run to scene--emergency/ routine 14) Type of run to hospital--emergency/ routine 6. Emphasize that, in addition to the preceding information, the EMT should save suicide notes and safeguard homicide weapons for the proper authorities when they are not present at the scene of the emergency 7. Emphasize the confidential nature of all information obtained and the fact that it should be released only to the proper authorities 8. Emphasize that reports are filled out only after all other patient responsibilities are taken care of	
(2:10) 0:30	COMMUNICATIONS 1. Discuss with the class the importance of communications in emergency care systems, e.g.: a. Detection and reporting of accidents b. Assignment of calls to specific purveyors c. Maintaining contact between the vehicle and the dispatcher d. Alerting of other emergency resources e. Relating information on patient's condition and obtaining information on care of patient f. Distributing patients among hospitals g. Alerting hospital emergency rooms of type of patient being brought in 2. Explain FCC regulations regarding operation and use of two-way communications equipment 3. Describe typical procedures in the use of two-way radios	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	4. Explain communication system (including equipment and procedures) existing in the area explaining how each of the steps listed in Item 1 above are handled. Provide brief descriptions of how communications are handled in other communities emphasizing that communications systems vary widely and the student will need to learn the specific procedures followed in the area in which he provides services	
	5. Identify secondary methods of communicating in the event primary means fail	
(2:40) 0:15	PROCEDURES AT HOSPITAL EMERGENCY ROOMS	
	1. Discuss problems that could be encountered at hospital emergency rooms, e.g.:	
	a. Understaffed department b. Inadequacy of examining or treatment facilities c. Lengthy history taking d. Lack of triage e. Delays in return or exchange of equipment	
	2. Emphasize that the above problems are reasons why the EMT must do an effective job of emergency care. He must stay with the patient until an orderly transfer has been effected	
	3. Emphasize the importance of mutual courtesy and understanding of each other's problems	
	4. Emphasize the value of communications prior to reaching the emergency room in accomplishing the effective transfer of the patient, e.g., if the emergency room knows the type of case being brought in, preparations can be made beforehand for care of the patient	
	5. Discuss means by which EMT's can cooperate with emergency department personnel, e.g.:	
	a. Optimal emergency care and safe transport prior to delivery of patient	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	b. Advance notification of arrival c. Identification of high priority patients d. Compliance with hospital regulations e. Rendering of reports as required f. Retrieval of equipment and supplies g. Rendering of assistance as needed and prompt departure	
(2:55) 0:05	**SUMMARY OF LESSON** 1. Briefly summarize the lesson emphasizing the following points: a. Importance to the patient of safe and smooth transportation b. Importance of maintaining an operationally ready vehicle c. The role of the EMT in obtaining and communicating information d. Importance of cooperation with hospital emergency rooms	
(3:00)		

Time: 2 hrs 30 min

LESSON 22

RESPONDING TO AN AMBULANCE CALL

Objectives

Develop a basic understanding of the duties and responsibilities of the EMT during the various phases of an ambulance run:

- Preplanning considerations while driving to the scene
- Considerations in analyzing the situation upon arrival at the scene
- Procedures for examining patients
- Triage procedures
- Considerations during loading and transport

Teach the following skill:

- Systematic procedures for examining patients

Requirements

Number of Instructors

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 13 and 56

Materials, Equipment

- Blanket or mat (one for each 2 students)
- Manikin (one for each 10 students)
- Chalkboard with chalk and eraser

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:10	REVIEW OF PREVIOUS LESSON 1. Briefly review the previous lesson emphasizing the following points: a. Emergency privileges must be exercised with caution b. Speed is not essential in most ambulance runs--a smooth ride is far more important to the patient c. The importance of obtaining information and maintaining records d. Records should be filled out only after all patient responsibilities have ended e. Importance of doing an effective job of emergency care and orderly delivery of the patient to the emergency room	
(0:15) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:20) 0:15	PHASES OF AN AMBULANCE CALL 1. Explain that an ambulance call typically involves the following phases and that all but the pre-dispatched phase (concerned with vehicle and equipment maintenance and inventory) will be discussed in turn: a. Pre-dispatch b. Dispatch and travel to scene c. At scene d. Travel to hospital e. At hospital	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	DISPATCH AND TRAVEL TO SCENE 1. Emphasize the importance of preplanning during this phase by using information provided by the dispatcher as well as the EMT's own knowledge 2. Discuss with the class information and knowledge that the EMT can use for preplanning using examples of local situations where relevant. Include: a. Is it a routine or an emergency run? Is it necessary to exercise privileges of an emergency vehicle? Is it disaster? b. What is the shortest route? What time of day is it? Will time of day affect traffic on shortest route? Should alternate route be chosen? Are there disaster routes that should be used? c. What are the weather conditions? How will weather conditions affect driving conditions or routes used? d. If an emergency, what is the nature of the emergency--e.g., a vehicle accident, a fire, an explosion, a water accident, an electrical hazard? e. What other emergency services might you expect to find at the scene? f. If a home accident or illness, what sort of a building is it? Are there elevators or must you use stairs? What sort of a stretcher should you take in with you? g. What do you know about the nature of the illness or injury? What should you be prepared to take with you in terms of equipment or supplies when you leave the ambulance? For example, might you need oxygen, splints, an obstetrical kit?	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	h. What communications procedures may be required? Do you confirm by radio that you are enroute? Should you confirm by radio arrival at the scene? Will you need to obtain police assistance in getting you hurriedly through intersections or across narrow bridges?	
	3. Emphasize that preplanning during this phase will assist the driver not only in reaching the scene but also in providing a speedy and efficient response once he reaches the scene	
(0:35)	AT THE SCENE	
0:10	1. Emphasize that once at the scene the EMT's primary responsibility is to the patient but he may have additional responsibilities depending on whether or not other emergency services have also responded to the call	
	2. Emphasize that the EMT's primary responsibility is to the patient. If other emergency services are present, their actions should not be allowed to compromise patient care	
	3. Briefly explain the three functions to be accomplished at the scene of an emergency:	
	a. Analyze or size up the situation b. Provide emergency care and control the situation as necessary c. Plan and accomplish loading and plan transport	
	4. Discuss factors to be considered in analyzing the situation, e.g.:	
	a. Where is it best to park the vehicle--to permit easy access to the patient, to protect the patient?	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	b. What has happened? Who is there to help? What emergency care has been rendered? Are other emergency services needed? c. Is traffic control necessary? Can you delegate traffic control to a bystander until police arrive? Do you need to set out flares? Do you need to establish blockades? d. How many patients are there and what condition are they in? Are there any who must be removed from situations threatening their lives? If there are multiple patients, which ones need immediate care? Which ones can wait? Thus, the EMT must give a quick survey of the life threatening signs and symptoms of all patients in order to determine order in which they will be cared for e. Is advice from Emergency Department necessary?	
(0:45) 0:20	f. Ask a member of the class to give one of the vital signs and to discuss its significance for emergency care. Write the vital sign on a chalkboard. Continue with other members of the class until all vital signs have been discussed: 1) Pulse a) Implications of a strong, pounding pulse b) Implications of a rapid, weak pulse c) Implications of no pulse 2) Respiration a) Implications of rapid, shallow breathing b) Implications of deep, gasping breaths c) Implications of respiratory arrest d) Implications of bright frothy blood coughed up	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	3) Blood pressure a) Implications of high blood pressure readings b) Implications of low blood pressure readings c) Implications of changes in blood pressure readings 4) Skin temperature a) Implications of hot, dry skin b) Implications of cool, clammy skin c) Implications of chilled skin 5) Skin color a) Implications of red or flushed skin b) Implications of white or ashen skin c) Implication of blue (cyanotic) skin d) Implications of yellow skin e) Recognition of exceptions, e.g., carbon monoxide poisoning 6) Pupils of the eye a) Implications of constricted pupils b) Implications of dilated pupils c) Implications of pupils of unequal size d) Implications of pupils' failure to react to light 7) States of consciousness a) Possible signs of damage to central nervous system b) Importance of checking for bleeding, breathing, cardiac arrest, head injuries 8) Paralysis a) Implications of paralysis of lower extremities b) Implications of paralysis of arms and legs c) Implications of limited movement of extremities d) Implications of facial and/or extremity paralysis on one side	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	9) Reaction to pain a) Implications of no reaction to pain b) Implications of pain for illness/ injury c) Implications of numbness or tingling in the extremities	
(1:05) 0:20	g. Discuss procedures to follow in making a survey of life threatening problems, emphasizing that the EMT uses all knowledge available to him, e.g.: 1) What he perceives about the patient or the situation 2) What the patient tells him 3) What relatives or bystanders tell him 4) Advice transmitted from the Emergency Department via radio	
	5. Explain that, having analyzed the situation, the rescuer is now ready to provide emergency care (the EMT has performed his first triage--that of sorting the patients by priority of care): a. Emphasize that if there are multiple patients the EMT should care first for the highest priority patients, then proceed to other patients of lower priority b. Ask a member of the class to give examples of high priority patients and critique his comments making sure he includes: 1) Airway and breathing difficulties 2) Cardiac arrest 3) Hemorrhage 4) Shock 5) Severe head injuries 6) Severe medical problems--poisonings, cardiacs, diabetics 7) Open chest or abdominal wounds c. Identify second and low priority patients:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	1) Second priority--burns, major multiple fractures, back injuries 2) Lowest priority--fractures or other minor injuries, mortal wounds and obvious dead d. Emphasize the importance of making a systematic examination of each accident patient and caring for any injuries prior to moving the patient e. Demonstrate on a manikin procedures for examining patients, e.g.: 1) Ask, feel, observe for life threatening problems 2) Check for medical identification emblems 3) Observe skull for lacerations, contusions, depressions; check for fluid in ear or nose 4) Check for neck fractures 5) Check the chest on both sides for movement and for fractured ribs 6) Feel abdomen for spasms or pain 7) Check extremities for fractures or paralysis 8) Check back and buttocks for fractures or wounds 6. Explain that, while analyzing and performing emergency care, the EMT must begin making plans for loading and transporting patients. This function includes: a. Planning loading and transportation, e.g., some patients may be loaded while care is being administered to others b. Obtaining assistance as necessary in loading vehicle c. Loading patients carefully to minimize aggravation of existing illnesses/injuries d. Determining best route for leaving the scene e. Determining to which hospital patients should be taken depending on facilities at hospital	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	f. Obtaining advice from Emergency Department as necessary 7. Discuss with the class the importance of a calm professional manner not only in dealing with the patient but also in controlling the situation as necessary, e.g.: a. Restraining bystanders from crowding or mishandling the patient b. Specifying tasks for volunteers c. Reassuring relatives d. Assuming functions of police when they are not present 8. Review with the class procedures to follow in the event of suicide, homicide or other violent cases 9. Review with the class procedures to follow in the event of death	
(1:25) 0:10	TEN-MINUTE BREAK	
(1:35) 0:05	TRAVEL TO HOSPITAL 1. Discuss with the class procedures to be followed during travel to hospital emergency room, e.g.: a. Constant observation and care of patient, taking care to note any changes in vital signs b. Driving carefully to assure safety of patient and to minimize aggravation of illnesses/injuries c. Informing hospital that patient is being brought in d. Communicating changes in vital signs to hospital and obtaining information on care of patient as appropriate	
(1:40) 0:05	AT HOSPITAL 1. Discuss with the class procedures to be followed at the hospital emergency room, e.g.: a. Unload patient carefully b. Communicate verbally all information to hospital emergency room personnel	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	c. Assist hospital emergency room personnel as necessary d. Complete records e. Have emergency room personnel sign for patient and his personal belongings as appropriate f. Exchange equipment and supplies with hospital as appropriate g. Now ready to restore vehicle and supplies to in-service condition--call is completed, return to pre-dispatch phase	
(1:45) 0:40	PRACTICE Note 1: If there are more than 10 students per instructor or less equipment than that specified, additional time will be required for practice Note 2: Only one student at a time can work on a manikin. While not working directly on the manikin, students should be required to observe the performance of the student who is working on the manikin. 1. Divide class into groups of 10 2. Have class members work on a manikin until each has demonstrated examining a patient for life-threatening problems and making a systematic check for injuries	
(2:25) 0:05	SUMMARY OF LESSON 1. Reassemble class 2. Briefly summarize the lesson emphasizing the following points: a. The importance of preplanning while driving to the scene b. The three functions to be accomplished at the scene of an emergency c. The vital signs d. Patients who would be considered high priority in a triage situation	
(2:30)		

Time: 3 hrs

LESSON 23

SITUATIONAL REVIEW

Objectives

Provide an opportunity for integration and review of course contents by group discussion of situational examples

Requirements

Number of Instructors

- One instructor

Instructor References

- All reading assigned in the course

Materials, Equipment

- Blanket or mat
- Prepared list of field situations (one for each student) (see Appendix D)

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 0:05	LESSON OBJECTIVES 1. Briefly explain to the class the objectives of the lesson	
(0:10) 0:10	REVIEW OF PREVIOUS LESSON 1. Ask a member of the class to demonstrate examination of a patient for life threatening problems and a systematic check of injuries. The student should provide a running commentary of what he is doing and what he finds. Critique his performance SITUATIONAL REVIEW Note: The situations listed below have been developed to aid the instructor in providing an integration and review of course contents. Included also are examples of questions that the instructor might pose to the class. The questions posed do not necessarily have clear-cut answers; rather, they are designed to stimulate class discussion. The instructor should feel free to draw on his own experiences in developing situations if he so desires. The instructor should assure that all class members participate in the discussion. Time frames listed are for general planning purposes only; they are given to aid the instructor in keeping the discussion for any one situation within reasonable time bounds. 1. Hand out prepared list of situations. Read and discuss each situation	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(0:20) 0:30	Situation 1 An ambulance is the first emergency vehicle to arrive at the scene of a two-car collision. Both cars are upright. A quick survey of life-threatening problems has revealed the following patients: Car 1: The driver is unconscious and seated in front seat fastened in his seat belt. The head of the passenger in the front seat has been thrown through the windshield. He is bleeding profusely about the face, is unconscious and his respirations are shallow Car 2: The driver is seated in the front seat. He is sweating and appears to be short of breath. He complains of severe pain in his chest and left arm. The passenger has been thrown from the car. He is lying on the road moaning that he cannot move his legs. He appears to feel no sensation in his legs Questions: a. What is most likely wrong with each patient? b. Which two patients (there are two EMT's) should be treated first and why? c. What care should be given to each patient? d. Which two patients should be transported first and why? e. Would it be necessary to alert the hospital and why? f. Would the trip to the hospital be made with utmost speed and why?	
(0:50) 0:10	Situation 2 An unconscious person is found on a city street. His skin is pale and moist and his pulse is rapid. He is having convulsions:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	Questions: a. What is most likely wrong with the patient? What should be searched for? b. What care should be given to the patient?	
(1:00) 0:30	Situation 3 There has been a brawl at the local tavern. One patient is lying on the floor with a knife in his chest. He is bleeding profusely and coughing up frothy blood. Patient No. 2 is unconscious, his respirations shallow, his pulse weak, and blood is dripping from his ears and nose. Patient No. 3 has an angulated compound fracture of the tibia and is bleeding profusely at the fracture site: Questions: a. What is most likely wrong with patient No. 1? 2. What is most likely wrong with patient No. 2? c. Which two patients should be cared for first and why? d. Should help be enlisted in caring for the patients? e. What care should be provided for each patient? f. Which two patients should be transported first and why? g. Would it be necessary to alert the hospital and why? h. Should the trip to the hospital be made with utmost speed and why?	
(1:30) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(1:40) 0:10	Situation 4 A man has barricaded himself in the bathroom. There have been sounds of water running. When you arrive at the man's apartment the police have just succeeded in opening the bathroom door. They tell you they have heard no sounds for five minutes. You find the patient face down in the bathtub. He is not breathing, has no pulse and his pupils are dilated and fixed: Questions: a. What care should be provided for the patient? b. You have performed cardiopulmonary resuscitation on the patient for 10 minutes without reviving him. Should you cease your efforts and why? c. What information should you obtain and to whom should you give it?	
(1:50) 0:05	Situation 5 You are returning from the hospital and a violent thunder storm erupts. You come across a car on which some electric wire have fallen. The driver is opening the front door of the car: Questions: a. What should be done and why?	
(1:55) 0:10	Situation 6 You have taped up a sucking chest wound and are transporting the patient to the hospital. You notice that the patient's respirations are worsening:	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	Questions: a. What would you suspect is wrong with the patient? b. What would you do?	
(2:05) 0:15	Situation 7 You arrive at a private home and find a woman ranting that her husband plans to kill her and she is going to throw acid at him. You try to calm her from a distance and to keep her husband at a distance. However, he approaches her and she throws the acid in his face: Questions: a. What would you suspect is wrong with the wife? b. How would you care for the husband and wife? c. What would you do about transporting the two patients? d. What information should you be sure to obtain and to whom should you give it?	
(2:20) 0:15	Situation 8 You have been called to a building where there is no known elevator. There is a patient on the third floor having a severe asthmatic attack: Questions: a. When you leave the abmulance what equipment should you take with you and why? b. When you see the patient you administer oxygen and his respirations worsen. What would you suspect is wrong and why? c. How would you carry this person? d. How would you care for him enroute?	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(2:35) 0:15	Situation 9 You have been called to take a pregnant women to the hospital to have a baby: Questions: a. When you leave the ambulance what equipment should you take with you and why? b. You find the woman crowning when you arrive. What should you do to assist her in the delivery? c. How should you care for the baby?	
(2:50) 0:10	Situation 10 An unconscious patient has severe third degree burns of the head, face and neck. His respirations are irregular and his pulse is weak: Questions: a. How would you care for the patient?	
(3:00) 0 (3:00)	SUMMARY OF LESSON None	

Time: 2 hrs

LESSON 24

FINAL WRITTEN TEST

Objectives

Test major knowledges taught in the emergency care course

Requirements

Number of Instructors

- One instructor

Instructor References

- All reading assigned during the course

Materials, Equipment

- Written test covering major knowledges and skills taught in the course (one for each student)--see Appendix A for guidance in test design

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 1:55	TEST 1. Distribute test and explain procedures for taking test, time allocated, etc. 2. Give a written test covering major knowledges covered in the course. Test should include integration of knowledges taught in different lessons wherever possible	
(2:00)		

Time: 3 hrs

LESSON 25

FINAL PRACTICAL EVALUATION OF SKILLS

Objectives

Evaluate student demonstration of the following skills:

- Setting up, adjusting and closing down oxygen equipment
- Bandaging the head, eye and extremity
- Cardiopulmonary resuscitation alone and as a member of a team
- Use of the bag-mask resuscitator
- Performing an examination of life threatening problems and a systematic check of injuries
- Splinting a fracture of the upper extremity
- Splinting a fracture of the femur
- Lifting and moving patients from bed-height surfaces and positioning them on a stretcher
- Immobilization of the neck and torso of a sitting patient on a short backboard
- Moving a patient with a suspected cervical spine injury from the floor and immobilizing him on a long backboard
- Determining blood pressure

Requirements

Number of Instructors

- Two instructors for each 10 students

Instructor References

- All reading assigned during the course

Materials, Equipment

- Checklists for evaluating student skills (one for each student)--see Appendix A for guidance in design of checklists
- Oxygen tanks and masks (one for each 10 students)
- Cardiopulmonary resuscitation manikin (one for each 10 students)
- Alcohol with sponges for cleaning the manikin's face or plastic wrap for protecting the manikin's face
- Paper cup or cone (one for each 2 students)
- Universal dressings or gauze pads (one for each 2 students)
- Wood, wire or cardboard splints (one set for each 2 students)
- Traction or long board splints (one for each 3 students)
- Wheeled stretcher (one for each 10 students)
- Blanket or mat (one for each 10 students)
- Cervical collar or universal dressing (one for each 10 students)
- Chin strap and head band (one for each 10 students)
- Short backboard with two 9-foot straps (one for each 10 students)
- Long backboard with two 9-foot straps (one for each 10 students)
- Roller bandages (one for each 2 students)
- Triangular bandages (four for each student)
- Manometer and stethoscope (one for each 10 students)

Time Elapsed) Actual	Activity	Instructor Notes and Visual Aids
(--) 0:05	ADMINISTRATIVE MATTERS 1. Take attendance 2. Make announcements Etc.	
(0:05) 2:55	PRACTICAL EVALUATION OF SKILLS Note 1: The time frame for practical evaluation assumes that there will be no more than 10 students for every two instructors and that the equipment specified will be available. If there are more than 10 students for every two instructors or less equipment than that specified, additional time will be required for evaluation. Note 2: It is suggested that instructors divide up among themselves the skills to be evaluated. Instructors are advised that certain skills may be demonstrated by all students simultaneously if sufficient equipment and supplies are available; these skills include bandaging and splinting. The remaining skills should be demonstrated individually (or by two or more students as appropriate) and require constant observation by a single instructor. 1. Distribute checklists and explain procedures to be followed in the evaluation of student skills 2. Divide class into groups of 10 3. Evaluate the following skills: a. Bandaging: Working in pairs, one student should demonstrate bandaging an eye with a , protruding eyeball. The other student should demonstrate bandaging a depressed skull fracture. Performance should include selecting the proper materials and applying a secure bandage	

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	b. Bandaging: Working in pairs, one student should demonstrate bandaging the forearm. The other student should demonstrate bandaging the elbow. Performance should include selecting appropriate materials and applying a secure bandage c. Fractures: Working in pairs, one student should demonstrate application of a wood, wire or cardboard splint to the humerus. The other student should apply a similar splint to the ulna d. Fractures: Working in groups of three (one student serving as a patient), students should demonstrate application of a traction splint or long board splint to immobilize a fracture of the femur. Each student should perform in both positions (e.g., maintaining traction and application of the splint) e. Oxygen: Working singly, each student should demonstrate proficiency in setting up, adjusting and closing down oxygen equipment f. Cardiopulmonary resuscitation: Working singly, each student should demonstrate successful cardiopulmonary resuscitation of a manikin for a minimum of two minutes. Performance should include checking for vital signs and manual techniques of airway care g. Cardiopulmonary resuscitation: Working in pairs, students should demonstrate successful cardiopulmonary resuscitation of a manikin for a minimum of two minutes. Performance should include checking for vital signs and manual techniques of airway care. The ventilator should use a bag-mask resuscitator. Each student should perform both as a ventilator and as a sternum compresser	—

Time (Elapsed) Actual	Activity	Instructor Notes and Visual Aids
	h. Examination: Working singly (with a manikin), each student should demonstrate proper examination procedures including checking for life-threatening problems as well as a systematic check for injuries. The student should provide a running commentary of what he is doing and what he finds	
	i. Lifting and moving: Working in groups of three (one student serving as the patient), each pair of students should demonstrate lifting the patient from a bed-height surface and positioning him properly on a stretcher	
	j. Immobilization on short backboard: Working in groups of three (one student serving as a patient), each pair of students should demonstrate immobilization of the neck by either a cervical collar or universal dressing, immobilization of the head on a short backboard by means of a chin strap and head support, and immobilization of the torso to the backboard. The patient should be seated in a chair	
	k. Immobilization on long backboard: Working in groups of three (one student serving as a patient), each pair of students should demonstrate moving a patient with a suspected cervical spine fracture from the floor to a long backboard. Performance should include immobilization of the neck as well as immobilization of the patient on the backboard	
(3:00)	l. Blood pressure: Working in pairs, each student should demonstrate determining blood pressure	

APPENDICES

A. GUIDANCE FOR DEVELOPING TEST MATERIALS AND CONDUCTING PRACTICE, TEST AND EVALUATION LESSONS

B. GUIDANCE FOR EFFECTIVE TEACHING

C. REFERENCES

D. STUDENT HAND-OUT FORMS

APPENDIX A

GUIDANCE FOR DEVELOPING TEST MATERIALS AND CONDUCTING PRACTICE, TEST AND EVALUATION LESSONS

The basic training program in emergency care provides for both written and practical tests of knowledges and skills. Since it is inadvisable to standardize tests, test items will need to be developed for each course that is given. This appendix provides a rationale for testing students in emergency care, procedures for developing test materials, guidance for developing both written tests and checklists for practical tests, and guidance for conducting practice, test and evaluation lessons.

1. Rationale for Testing

Student knowledges are evaluated by means of written tests; skill proficiency is evaluated by means of practical demonstration. It is a requirement of this course that all students demonstrate proficiency in all skills taught. Therefore, there will be no gradation of skill proficiency; only a pass/fail score will be given. Students will be given percentage scores on written tests. Pass or fail grades for each test will be established by the course coordinator.

The course provides for interim test and evaluation of selected topic areas as well as a final test of the total course. The interim test sessions include a brief written test of knowledges as well as opportunity for the student to practice specific skills until he can demonstrate proficiency in each skill taught in the group of lessons covered by the interim test. The final test involves two sessions. One is devoted to a written test of knowledges; the second to a practical evaluation of skills.

Students must successfully demonstrate proficiency in all skills tested in both interim and final tests. Students must obtain a passing grade on all written tests of knowledges. There is thus no differential weighting between interim and final tests. Criteria specified must be met on all tests. At the discretion of the instructor, students who fail to meet the course criteria on any one test may be given the opportunity to make up that test.

The instructor is advised that tests provide a mutual learning process between students and instructor. Thus, if many students fail a test or fail a given test item, the problem may in fact lie with the quality of instruction or with the design of the test rather than with student learning.

2. Procedures for Test Development

It will be the responsibility of the instructor who conducts a lesson to develop written items for testing knowledges and checklists for evaluating skills covered in that lesson. Since it is inadvisable to duplicate items in the interim and final tests, instructors should develop more test items than called for so that there will be sufficient items for both the interim and final tests. When feasible, instructors should include in their written items those knowledges and skills taught in previous lessons that have applicability to the specific topic they are covering.

The test items thus developed will be evaluated by the course coordinator who will select those for the interim and final tests. The course coordinator is advised that, where possible, items for the final test should integrate knowledges taught in different lessons of the course. Where it is necessary to be selective, priority should be given to life threatening emergencies and techniques of care that minimize further danger to the patient (e. g., care of patients with spinal injuries).

Guidelines for developing test items and checklists are included in the following sections of this appendix.

3. Developing Written Tests

This section of the appendix describes different methods of asking test questions, provides guidance for developing test items appropriate to this course, and includes some sample test items to aid the instructor in preparing his written tests.

a. Methods of Asking Test Questions

Methods of asking test questions may be categorized into two groups:

- Items in which the student is required to select a correct response from a list of two or more alternatives. These include true-false, multiple choice, ordering and matching type questions.

- Items in which the student is required to provide a direct answer to a question. These include completion items and essay test items.

Each type of test question has variations in design and each has advantages and disadvantages from the points of view of test construction, test completion and test scoring. They are discussed below.

. Items with Two Alternatives

The most common type of two-alternative item is the true-false question in which the student is provided with a statement and is asked to indicate whether the statement is correct or incorrect. Also included in this category are items in which the student is requested to select the correct response by indicating "yes" or "no" or by selecting one of two words that will correctly complete a sentence.

Such test items are relatively easy to construct and simple to score. In addition, they have the advantage of not being time consuming to complete and therefore permit a large number to be completed in a relatively short period of time. However, they are restricted to information that can logically be put in a yes/no, correct/incorrect form, or other two-alternative form. By necessity, therefore, any one question can cover only a discrete item of information and it is frequently difficult to test the depth of a student's knowledge by this technique. In addition, since there are basically only two responses to a test item, a student has a 50% chance of getting a correct response by guessing alone. For this reason, therefore, a test should never consist entirely of two-alternative items.

Examples of these items follow:

True	False	A third degree burn of the face is considered to be critical
Yes	No	If you can detect no pulse but the patient's pupils contract when exposed to light, should you start cardiopulmonary resuscitation?
True	False	The single best method of providing pulmonary resuscitation is by use of the bag-mask resuscitator
Artery	Vein	A wound bleeding in spurts is the sign of a severed _____

Items with More Than Two Alternatives

The most common question in this category is the multiple choice item, in which the student is provided with a statement and several alternative answers. From the alternates, he is usually asked to select the one correct answer, all correct answers, the one incorrect answer, or all incorrect answers. As a variation, he may be asked to number the alternatives in some order, for example, by priorities or by time sequence. Or the item may be of the matching type in which the student is provided with two lists and is required to pair an item from the first list with one from the second according to some criterion.

The major requirement in the construction of multiple choice test items is that all alternatives be plausible. For this reason, they are difficult and time-consuming to construct. Too frequently, they include alternates that are so obviously wrong that the correct answer "stands out like a sore thumb." Although such items may serve to reinforce a specific point, they are not useful as evaluative tools of student knowledges and are better eliminated from the test. On the other hand, when one answer is requested from a list of alternates, there should be only one correct answer. The student should not be required to spend time re-reading test alternates attempting to develop a gradation of correctness among them.

The major consideration in the design of matching test items is to assure that the items are not answered by a process of elimination. It is therefore advisable not to provide a one-to-one match between the two lists, e.g., one list might deliberately be made longer than the other or the student might simply be informed that there is not necessarily a one-to-one match and he should match only items that meet the specified criterion.

Well constructed multiple alternative items can provide useful evaluative tools, are not time consuming to complete, and are simple to score. Examples follow.

> A patient's pulse is weak and rapid, his skin is cold and clammy, his face is cyanotic, his respirations are shallow, and his eyes are dull. This victim is suffering from (check one):
>
> _____ A heart attack
> _____ Heat stroke
> _____ Shock
> _____ Drug withdrawal

The patient has a protruding intestine. How would you care for him? (Check all that apply)

_____ Keep the patient lying down with legs flexed
_____ Give small sips of water preferably with salt added
_____ Cover protruding intestine with a sterile wet dressing
_____ Cover the intestine with a tight bandage

An unconscious patient is found in an automobile. Assuming all of the following are necessary, in which order should they be performed? (Enter "1" for first, "2" for second, etc.)

_____ Dress and bandage an abrasion on the left arm
_____ Immobilize neck and spine
_____ Remove patient from the vehicle
_____ Apply a splint to the left femur

Blood is spurting from the left arm of the patient. The single best method of caring for this patient is (check one):

_____ Application of a tourniquet 2 inches above the wound
_____ Direct pressure on the brachial artery pressure point
_____ Elevation of the left arm
_____ Direct pressure over the wound

Match each symptom given in the left column with one of the illnesses given in the right column. Enter the appropriate number for the illness in the space provided by the symptom.

Symptom	Illnesses
_____ Pain in right lower abdomen	1. Ectopic pregnancy
_____ Pain in right upper abdomen	2. Asthmatic attack
_____ Severe back pain	3. Heart attack
_____ Severe chest pain	4. Gallbladder attack
	5. Appendicitis
	6. Ruptured aortic aneurism
	7. Ulcers

Completion and Essay Type Items

For both these item types, the student is required to provide a direct answer to a question. The answer may be in the form of a single word or may require several sentences.

The major problem in the design of completion test items is to assure that the desired response is the only response that will make the statement correct. If the item can be interpreted in different ways, the instructor will need to be prepared to accept more than one response as correct; in this instance, he should also advise the class that there may be more than one correct response to the item. Completion items are not time consuming to complete and are simple to score.

Essay questions are the most versatile of all types of test items and probably the easiest to construct. The instructor is advised, however, that these items normally require more time for completion because the student must organize his thoughts and write them on paper. For this reason, the instructor should design essay questions so that responses can be brief and should warn the class to keep responses brief and to the point. Otherwise the student might spend the whole time allotted for the test preparing a lengthy response to the first item. To avoid this problem, the instructor can specify his requirement for a response by using such words as "List the five steps in . . ." or "Give three reasons why . . ." Additionally, he can indicate that he wishes a brief response by leaving only a small blank space on the test sheet for the item.

Although fewer essay type items can be completed in the same time as the other types of test items discussed, a broader range of knowledge can be covered in one essay item than in the other test item types. In addition to being more time consuming to complete, essay questions are more difficult to score than the other types discussed because of the necessity to read and evaluate each response given.

Examples of essay and completion items follow:

The rate of pulmonary resuscitation for infants and small children is _____ breaths per minute.

If the body is deprived of oxygen permanent brain damage will occur within _____ to _____ minutes.

Describe how you would care for a person who has been bitten by a poisonous snake.

You have taped up a sucking wound of the chest and suddenly notice that the patient is having difficulty breathing. What would you suspect might be wrong with this patient and how would you care for him?

You have been called to the scene of an accident and find a non-breathing person lying in the road. A passerby tells you the person has been lying there for 15 minutes. Would you resuscitate this victim? Explain your answer.

You arrive at the scene of an accident and find the following patients. Which patient would you care for first and why?

A. Patient A is bleeding profusely from the scalp.
B. Patient B's respirations are shallow and his pulse is weak and irregular
C. Patient C is lying on his back moaning and crying that he cannot move his arms or legs

b. Item Orientation

The instructor is again reminded that the course emphasizes symptom recognition and emergency care. This emphasis has obvious implications for the design of test items. Test items should be developed to obtain answers to such questions as:

- Does the student know how to check for vital signs and symptoms?
- Does he know the implications of various signs and symptoms to the patient?
- Does he know the proper procedures of emergency care for the signs and symptoms?

- Is he aware of the implications and cautions of various techniques of care?

- Does he know priorities of care for multiple patients or multiple injuries?

In other words, the course emphasizes the practical aspects of the emergency medical technician's job. As an example, test items should not be oriented toward student ability to memorize a list of signs and symptoms; rather, items should test student ability to recognize implications of the given signs and symptoms for emergency care. For example:

Not Preferred	Preferred
List the signs and symptoms of inadequate breathing	A small child is coughing and appears to be choking. Describe how you would care for him

In making the course problem-oriented, theory (anatomy/physiology) has been deemphasized as opposed to practical applications. Only that theory has been provided that will aid the student in understanding the importance and implications of the signs and symptoms he sees and the emergency care he provides. Design of test items should reflect this emphasis. For example:

Not Preferred	Preferred
Name the different sections of the spinal cord and identify the number of bones in each section	A conscious patient is unable to move his legs and feels no pain in the legs when you check for fractures. What would you suspect is wrong with this patient and how would you care for him?

c. Item Coverage

The instructor is advised that all important points included in a test should have been adequately covered in class. Test items should not cover assigned reading material not specifically discussed in class. In addition, tests should cover all major points of information that the student will need to know in the performance of his job; thus, the "nice to know" but essentially irrelevant aspects of the job should be eliminated.

Not Preferred	Preferred
A laryngectomee breathes through an opening in the neck known as a _____	From your observations of chest and abdominal movement, the unconscious patient appears to be breathing normally. However, you are unable to detect any exhaled air at mouth or nose. What medical condition would you expect this patient to have?

d. Summary of Design of Written Test Items

In summary, there are several techniques the instructor can use for designing test items. Each has advantages and disadvantages and the instructor might well provide a mix of items depending on which appears to be most appropriate for the given knowledge he wishes to test. Because of the probability of obtaining a 50% correct response by chance alone, it is suggested that tests should not consist entirely of items with two alternatives. In items requiring more than two alternatives, the instructor should assure that all alternatives are plausible. Essay type questions require longer to complete than those in which the student is required to select a response; however, they normally permit coverage of a greater depth and detail of knowledge in any one item than do the other question types.

In all cases, items should be oriented toward the practical aspects of the emergency medical technician's job, e.g., sign and symptom recognition and emergency care, and should cover only materials adequately discussed in class. The instructor is advised that a good test requires time and care for construction. If the test is not well constructed, student's abilities will not be properly evaluated.

4. Developing Checklists for Practical Tests

In order to assure that all students are evaluated in the same manner in the practical tests of skills, the instructor should have a checklist on which he can check off the principal features or characteristics of the skill to be evaluated. This checklist essentially comprises the student's evaluation sheet.

A sample checklist for the skills of mouth-to-mouth pulmonary resuscitation and bandaging appears below. As shown, checklist should include a place for the instructor's signature as an indication of successful performance of the skill.

In designing checklists for skills, the instructor should attempt to identify the principal features of the skills. These principal features should not be construed as necessary steps in the performance of the skill and may not all be of equal weight in skill evaluation. The primary purpose of the checklist is to aid instructors in standardizing their evaluations of student performance.

Lesson No. _____
Date _____

Name _____

1. Mouth-to-mouth pulmonary resuscitation

_____ 1. Checks for exhaled air at mouth and nose

_____ 2. Checks for chest/abdominal movement

_____ 3. Properly positions head

_____ 4. Clears oral cavity of debris

_____ 5. Ventilates manikin at proper rate

_____ 6. Observes for chest/abdominal movement while ventilating

_____ 7. Maintains proper ventilation rate for 2 minutes

Instructor's Signature _____

2. Bandaging

_____ 1. Selects appropriate dressing and bandage

_____ 2. Anchors bandage properly

_____ 3. Provides sufficient coverage of wound and dressing

_____ 4. Secures bandage with degree of tightness appropriate for wound

_____ 5. Bandage is neat and "professional" in appearance

Instructor's Signature _____

5. Conducting Practice, Test and Evaluation Lessons

As stated previously the course includes four interleaved practice, test and evaluation lessons as well as a final written test and a final practical evaluation of skills. For each of these lessons, as appropriate, each student should be provided with a copy of the written test he is to take and a copy of the checklist indicating the skills he is to demonstrate.

The written test should contain explicit instructions on how each item is to be completed. It should include sufficient space for the student to write in any explanations he cares to make regarding his responses as well as sufficient space to answer completely any given question. The instructor should assure that all instructions regarding completion of the test are understood by the students before students take the test.

The checklist for skill evaluation should contain all subparts of the skill on which the student will be evaluated. As with written tests, procedures for practical evaluation of skills should be explicitly explained to the students before the evaluation session begins.

It is not possible to specify here detailed procedures for the evaluation sessions since they will vary depending on the number of students in the class, the number of instructors and the amount of equipment available. Where there are more than 10 students in the class and therefore more than one instructor, it is suggested that instructors divide between them the skills to be evaluated. The instructor is advised that certain skills may be demonstrated simultaneously by all students, e.g., bandaging. Time will be saved in the practical evaluation of skills if these skills are accomplished simultaneously by all students.

Other skills, e.g., cardiopulmonary resuscitation, require constant observation by a single instructor to assure that student performance of the skill is satisfactory. In the practice, test and evaluation lessons, each student should be permitted to practice until he feels ready to be evaluated. At this point, he should so notify the instructor and perform the skill to the instructor's satisfaction whereupon the instructor will sign the checklist indicating successful performance of the skill. Of necessity, some students may need to wait while others are practicing and demonstrating skills. There is considered to be no reason why waiting students should not observe the performance of those working directly on a given piece of equipment.

For the final evaluation lesson (Lesson 25), practice should be eliminated. It is also suggested that performance of individual skills be conducted in private with the instructor.

APPENDIX B

GUIDANCE FOR EFFECTIVE TEACHING

The instructor is advised that learning is a joint venture between instructor and student. No matter how interesting the subject matter or how capable the students, if the materials are poorly presented student motivation will be decreased and the learning process will be incomplete. The lesson plans have been designed to aid the instructor in conducting each lesson. They include the important points he should cover and the teaching method he should use, for example, lecture, use of visual aids, class discussions, demonstration of specific techniques, and individual student practice. This appendix is designed to provide the instructor with additional hints for making an effective presentation of his subject area.

1. Knowledge of Subject Matter

It is a requirement of this course that each instructor be a specialist in the area he is teaching. As such, he should be thoroughly versed in the theory and techniques of emergency care and proficient in all skills which he will be teaching. In addition, the following hints are provided for the instructor:

- Although each instructor will bring to the class his unique experiences and knowedge of the subject matter, he is reminded that lesson plans for this course are keyed to the course manual and other assigned reading. Therefore, before he conducts his class, he should review all assigned reading for the lesson to assure that he is completely familiar with all materials students have been required to read for that class.

- The instructor should review in detail the contents and sequence of materials presented in the appropriate lesson plan. As necessary, he should use the column entitled, "Instructor Notes" to jot down any additional comments that he wishes to present to the class. Thorough familiarity with the contents, sequence and method of teaching his class will assist the instructor in making a smooth presentation as well as in maintaining his class on schedule.

- To assure that all aspects of his presentation will be relevant to the emergency medical technician's job, the instructor should be thoroughly familiar with both the operational and emergency care aspects of the job. It is particularly important that he know what an emergency medical technician can and cannot do legally in the community in which the course is being taught to assure that all procedures he describes are legally permitted.

- The lead instructor for each lesson should assure that his instructor aides are thoroughly versed in the role they will perform and proficient in the skills they will be demonstrating and evaluating. All instructor aides for a lesson should conduct the practice sessions in an identical manner.

2. Use of Teaching Aids

Teaching aids recommended for this course may be classified into two groups: The first consists of films, slides, charts and the blackboard which are used to aid in the development of knowledges and to provide a change of pace in the lecture session of a lesson. The instructor is advised that the purpose of these aids is to complement rather than replace the spoken word. The second group of teaching aids is used to develop skills and includes manikins and the actual equipment with which the emergency medical technician will work in the performance of his job. Hints for effective use of teaching aids follow:

- All equipment and training aids specified for a lesson should be available and ready for use before the class starts.

- The instructor should be thoroughly familiar with the contents of all films, slides or charts used in his presentation.

- The instructor should know how to operate all projection equipment or should assure that it is operated by a capable person. In particular, he should assure that extra bulbs are available for projection equipment.

- The instructor should not only be thoroughly familiar with the use of all equipment used for developing skills but also should know how to care for the equipment, including cleaning, setting up and tearing down, as appropriate.

Teaching aids used in a lesson should be visible to all members of the class. Thus, when writing on a blackboard or flip chart, the instructor should stand to the side, write legibly and write large enough for all to see. When using a pointer, he should stand to one side so that he does not obscure the contents of the teaching aid. When demonstrating skills, he should assure that all members of the class can see including inviting the class to come closer to the demonstration as necessary.

- When emphasing certain points, the instructor should talk directly to the class and not to the teaching aid.

3. Class Participation

The course is designed to include as much class participation as possible. Thus individual practice of specific skills has been included in each lesson as appropriate. In addition:

- The instructor should ask members of the class to answer specific questions and should encourage students to ask questions or make comments when information presented is not clear.

- When asking the class a question, the instructor should direct the question to the entire class and then either select an individual to respond or permit a student who knows the answer to respond. When questions are directed to the entire class, all individuals in the class are required to think the answer through. If the instructor selects an individual to respond, he is advised that shy students may become discouraged. On the other hand, should the instructor permit any member of the class to respond, he may find that one or two individuals dominate the class. The instructor should try both techniques and select the one that works best with his particular class. However, he should assure that all students participate. If certain students are shy or reluctant to participate, it might be better to use them in the review section of the lesson rather than in the presentation of new materials.

- The instructor should vary his questions. Examples of kinds of oral questions include those starting with the words "what," "why," "how," "is it true that," and "compare."

- During practice periods of lessons, there may be insufficient equipment for all students to practice skills simultaneously. Those who are not working directly on equipment should be required to observe those who are. Learning will be enhanced be observing and listening to the instructor's critique of the performances of other students.

4. Student Variation

The instructor may find considerable variation among his students not only in their ability to learn but also in their previous training and experience. Some students may already be employed in the field or have taken previous courses in emergency care; others may be completely new to the field. Some students may be highly motivated and capable of learning quickly; others may learn slowly. It is the instructor's responsibility to insure that as many students as possible reach the minimum levels of training specified for this course.

- Regardless of the amount of previous training or experience exhibited in the class, the instructor should not assume that students are knowledgeable. Each student must individually demonstrate the required knowledges and skills. In conducting each class, therefore, the instructor should assume that the students know nothing about the specific area being taught and should cover all knowledges and skills as specified in the lesson plan.

- The instructor should assure that he has covered all important points in the lesson and that all major points are emphasized. It is particularly important that he cover all points on which students will be tested.

- The instructor should insure that slow learners receive individual counseling or additional time for practice as appropriate. The instructor may find that more knowledgeable students can assist the slow learners.

- The instructor should describe the standards of behavior expected of each student. Students should understand precisely what they are expected to know and precisely how they are to perform specific skills.

- The instructor should provide the students with feedback regarding their performance. This should be accomplished in each lesson by critiquing students' responses to oral questions and their performances in the practice sessions. In addition, the lesson following each evaluation session provides for a review of the class performance on both the written and practical tests; the instructor should insure that common errors made by the class are pointed out and corrected.

5. Instructor Qualities

Qualities of a good instructor go far beyond expert knowledge of the subject matter. He must impart this knowledge in a clear and interesting manner. He must control his students and at the same time maintain a good rapport with them. He must observe his students carefully and maintain adequate records in order that he may properly evaluate their knowledges and skills. Suggestions in this area include:

- The instructor should speak clearly and distinctly. He is advised to avoid complicated words where simple words will do and should assure that his vocabulary is appropriate to emergency care and not to definitive care.

- The instructor should be so well versed in the subject matter and familiar with the lesson plan that he is able to present lecture sessions by talking directly to the class, not reading to it.

- The instructor should at all times be in control of the class. He should insure that all students participate and should never allow the class to be dominated by a few vocal students. A warm and friendly manner will do much to ease the apprehension of the shy and non-vocal student. In addition, a little humor helps.

If the instructor is asked a question to which he does not know the answer, he should not hesitate to admit that he doesn't know. Students respect honesty and directness. In addition, such situations provide opportunities for both student and instructor to look up and learn additional knowledge.

The instructor should at all times insure the comfort and safety of his students. During lecture periods of each lesson, students should be seated so that each has an adequate view of the instructor and all teaching aids used. Sufficient space should be provided for individual practice and observation of all required skills. In addition, the instructor should insure that the facilities are well lit and ventilated.

Records must be maintained for each lesson. These include records of attendance, comments regarding student performance and attitudes, and student test scores. The lead instructor for each lesson should assure that his instructor aides evaluate students in a consistent manner and record their evaluations in a consistent manner on the student's record sheet.

APPENDIX C

REFERENCES

Ambulance Attendant Training Pilot Project Report. Division of Environmental Safety, Pennsylvania Department of Health, Harrisburg, Pennsylvania.

American Academy of Orthopaedic Surgeons. "Emergency Care of the Sick and Injured." (In press)

American National Red Cross. "First Aid." 4th Ed. Doubleday and Co.; Garden City, New York, 1957. 249 p.

American National Red Cross. "Life Saving and Water Safety." Doubleday and Co.: Garden City, New York, 1937.

American National Red Cross. "Swimming and Water Safety." American National Red Cross: Washington, D. C., 1968.

American Medical Association. "The Wonderful Human Machine." AMA: Chicago, 1967. 56 p.

Bureau of Mines. "First Aid." U. S. Government Printing Office: Washington, D. C., 1953. 160 p.

Cole, Warren H. and Puestow, Charles B. "First Aid, Diagnosis and Management." 6th Ed. Meridith Publishing Company: New York, 1965. 455 p.

Committee on Cardiopulmonary Resuscitation, American Heart Association. "Cardiopulmonary Resuscitation, A Manual for Instructors." American Heart Association: New York, 1967. 71 p.

Committee on Cardiopulmonary Resuscitation, American Heart Association. "Emergency Measures in Cardiopulmonary Resuscitation, Discussion Guide." American Heart Association: New York, 1965. 17 p.

Committee on Cardiopulmonary Resuscitation, American Heart Association. "Training of Ambulance Personnel in Cardiopulmonary Resuscitation, Discussion Guide for Slide Set." American Heart Association: New York, 1965. 14 p.

Committee on Trauma, American College of Surgeons. "The Management of Fractures and Soft Tissue Injuries." 2nd Ed. Philadelphia: W. B. Saunders, 1965.

Committee on Trauma, American College of Surgeons. "Minimal equipment for ambulances." Bull. American College of Surgeons. 52:92-96, 1967.

Curry, George J., Compl. and Ed. "Immediate Care and Transport of the Injured." Charles C. Thomas: Springfield, Illinois, 1965. 187 p.

Department of Defense, Office of Civil Defense. "Light Duty Rescue Course Instructor's Guide." IG-14.2. U. S. Government Printing Office: Washington, D. C., 1964. 45 p.

Department of Health, Education and Welfare, National Library of Medicine, National Medical Audiovisual Center. "Film Reference Guide for Medicine and Allied Sciences." U. S. Government Printing Office: Washington, D. C. 386 p.

Dunlap and Associates, Inc. "Economics of Highway Emergency Ambulance Services." Technical Reports PB 178-837 and 178-838. Clearing House for Federal Scientific and Technical Information: Springfield, Va. 22151. 159 p. & 175 p

"Emergency medical services during civil disturbances." Bull. American College of Surgeons. 53: 180-181, 1968.

Farrington, J. D. "Death in a ditch." Bull. American College of Surgeons. 52: 121-130, May - June 1967.

Farrington, J. D. "Extrication of victims--surgical principles." J. Trauma. 8: No. 4, 493-512, 1966.

"First Aid for Laryngectomees." International Association of Laryngectomees. American Cancer Society: 219 East 42nd Street, New York, N. Y., 1962. 10 p.

Gardner, A. W. and P. J. Roylance. "New Essential First Aid." Pan Books Ltd.: London, 1967. 174 p.

Gordon, Archer S., Ed. "Cardiopulmonary Resuscitation." Conf. Proc. May 23, 1966. National Research Council: Washington, D. C., 1967. 232 p.

Gowings, Dan D. , Ed. "Ambulance Attendant Training Manual." Pennsylvania Department of Health Training Manual. 120 p.

"Guide to initial therapy of burns." Bull. American College of Surgeons. 52: 196-198, 1967.

Hanlon, R. F. "Safe Driving of Ambulances." Presented at the Sixth Advanced Practical Course, Emergency Aid and Transportation of the Critically Ill and Injured, sponsored by the Committee on Trauma of the American College of Surgeons, Chicago, Illinois, May 10-13, 1967.

Henderson, John. "Emergency Medical Guide." 2nd Ed. McGraw-Hill Paperbacks No. 28146.

"Interim statement on first-aid therapy for bites by venomous snakes." Ad Hoc Committee on Snakebit Therapy, Division of Medical Sciences, NAS-NRC. Toxicon. 1: 81-87, 1963.

International Fire Service Training Association." Fire Service First Aid Practices." 4th Ed. The Department of Fire Protection, Oklahoma State University, 1968.

Kennedy, Robert H. , Ed. "Emergency Care of the Sick and Injured, A Manual for Law Enforcement-Officers, Fire-Fighters, Ambulance Personnel, Rescue Squads and Nurses." Committee on Trauma, American College of Surgeons. W. B. Saunders Co. : Philadelphia, 1966. 128 p.

Kossuth, L. C. "Aquatic rescue of injured personnel." J. Med. Assoc. Alabama. 35: 748-755, March 1966.

Kossuth, L. C. "Immediate care to vehicle accident victims." Postgraduate Medicine. 41: No. 4, 407-413, April 1967.

Kossuth, L. C. "The initial movement of the injured." Mil. Med. 132: 18-21, January 1967.

Kossuth, L. C. "Removal of injured personnel from wrecked vehicles." J. Trauma. 5: No. 6, 703-708, November 1965.

Kossuth, L. C. "Vehicle accidents: Immediate care to back injuries." J. Trauma. 6: No. 3, 582-591, September 1966.

Lewis, Arnold M., Jr., Ed. "Immediate Care of the Sick and Injured (A Course Guide)." Kansas Medical Society and the Medical Society of Sedgewick County, 1969, 122 p.

"Medical Requirements for Ambulance Design and Equipment." Committee on Emergency Medical Service, Division of Medical Sciences, National Academy of Sciences, National Research Council: Washington, D. C., September 1968. 24 p.

"Medical Self Help Training." Public Health Service, U. S. Department of Health, Education and Welfare and Office of Civil Defense, U. S. Department of Defense, 1965.

Ohio Trade and Industrial Education Service, Div. Vocational Ed., State Department of Education. "Emergency Victim Care and Rescue, Textbook for Squadmen." 2nd Ed. 1965. 327 p.

Potthoff, C. J. "Emergency medical care." World-Wide Abstracts. 8-18, March 1963.

Rafferty, Max. "Emergency Care of the Sick and Injured." California State Department of Education, 721 Capitol Mall, Sacramento, California.

Safar, Peter. "Ventilatory efficacy of mouth-to-mouth artificial respiration." JAMA. 107: No. 3, 335-341, 1958.

Safar, Peter and R. A. Brose. "Ambulance design and equipment for resuscitation." Arch. Surg. 90: 343-348, March 1965.

Safar, Peter, L. A. Escarrago and J. O. Elam. "A comparison of the mouth-to-mouth and mouth-to-airway methods of artificial respiration with the chest-pressure arm-lift methods." New England J. Medicine. 258: No. 14, 671-677, 1958.

Safar, Peter and M. C. McMahon. "A Manual for Emergency Artificial Respirtation." The Baltimore City Fire Department: Baltimore, Maryland

Safar, Peter. "Manual on Cardiopulmonary Resuscitation." World Federation of Societies of Anesthesiologists, Publication's Distribution P. O. Box 430, Bronxville, New York. 1970.

St. John's Ambulance Association. "First aid: the authorized manual of the St. John's Ambulance Association of the Order of St. John." 2nd Ed. Hills & Lacy Ltd: London, 1965, 272 p.

Statement by the Ad Hoc Committee on Cardiopulmonary Resuscitation of the Division of Medical Sciences, National Academy of Sciences-National Research Council." Cardiopulmonary resuscitation." JAMA. 198: No. 4, 374-379, October 24, 1966.

"Training of Ambulance Personnel and Others Responsible for Emergency Care of the Sick and Injured at the Scene and During Transport." Guidelines and Recommendations of the Committee on Emergency Medical Services, Division of Medical Sciences, National Academy of Sciences, National Research Council: Washington, D. C., March 1968.

Training Division, U. S. Army Medical Training Center, Fort Sam Houston, Texas. Instructor materials and student study guides and workbooks used in training aidmen of the Army Medical Service.

Young, Carl B., Jr., First Aid for Emergency Crews. Charles C. Thomas: Springfield, Illinois, 1965. 166 p.

APPENDIX D

STUDENT HAND-OUT FORMS

The following pages contain samples of forms that should be reproduced and handed out to each student in the appropriate lesson. These forms include the following:

- Lesson Titles and Reading Assignments--to be given to each student in Lesson 1
- Functions of the Emergency Medical Technician (EMT)--to be given to each student in Lesson 1
- Field Situations--to be given to each student in Lesson 23. The instructor of this lesson is advised that these situations have been developed to aid him in providing an integration and review of course contents. He should feel free to revise the list of situations or to draw on his own experiences in developing situations if he so desires.

LESSON TITLES AND READING ASSIGNMENTS

Lesson Title	Reading Assignment
1. The Emergency Medical Technician--His Role, Responsibilities and Equipment	No assigned reading
2.. Airway Obstruction and Pulmonary Arrest	AAOS Chapters: 1, 5, 14, 15, 59 First Aid for Laryngectomees
3. Mechanical Aids to Breathing and Pulmonary Resuscitation	AAOS Chapters: 14, 15
4. Cardiac Arrest	AAOS Chapters: 6, 16
5. Bleeding, Shock and Practice on Airway Care, Pulmonary Resuscitation and Cardiopulmonary Resuscitation	AAOS Chapters: 6, 13, 17, 18
6. Practice, Test and Evaluation--Airway Care, Pulmonary Arrest, Cardiac Arrest, Bleeding and Shock	AAOS Chapters: 1, 5, 6, 13, 14, 15, 16, 17, 18, 59 (review); First Aid for Laryngectomees (review)
7. Wounds	AAOS Chapters: 19, 49
8. Fractures of the Upper Extremity	AAOS Chapters: 2, 3, 20, 21, 22
9. Fractures of the Lower Extremity	AAOS Chapter: 23
10. Injuries to the Head, Face, Neck and Spine	AAOS Chapters: 4, 24, 25, 26, 49
11. Injuries to the Eye, Chest, Abdomen, Pelvis and Genitalia	AAOS Chapters: 7, 8, 9, 10, 14, 27, 28, 29, 30, 49

(Continued on reverse side)

Lesson Title	Reading Assignment
12. Practice, Test and Evaluation-Injuries I	AAOS Chapters: 1, 2, 3, 6, 7, 8, 9, 14, 19, 20 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 (review)
13. Practice, Test and Evaluation-Injuries II	AAOS Chapters: 2, 3, 20, 21, 22, 23, 24, 28 (review)
14. Medical Emergencies I	AAOS Chapters: 38, 40, 41, 44
15. Medical Emergencies II	AAOS Chapters: 39, 42, 43, 45, 48
16. Childbirth and Problems of Child Patients	AAOS Chapters: 46, 47
17. Lifting and Moving Patients	AAOS Chapter: 50
18. Practice, Test and Evaluation--Medical Emergencies, Emergency Childbirth, Lifting and Moving	AAOS Chapters: 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 50 (review)
19.. Environmental Emergencies	AAOS Chapters: 31, 32, 33, 34, 35, 36, 37
20. Extrication from Automobiles	AAOS Chapter: 53 Supplementary Reading - AAOS Chapter 54
21. Operations--Driving an Emergency Vehicle, Maintaining a Safe and Ready Vehicle, Records and Reports, Communications, and Procedures at Hospital Emergency Rooms	AAOS Chapters: 55, 57, 58, 60 Supplementary Reading - AAOS Chapters: 51, 52
22. Responding to an Ambulance Call	AAOS Chapters: 13, 56
23. Situational Review	All assigned reading to date (review)
24. Final Written Test	All assigned reading to date (review)
25. Final Practical Evaluation of Skills	All assigned reading to date (review)

FUNCTIONS OF THE EMERGENCY MEDICAL TECHNICIAN (EMT)

1. Prompt and efficient care of the patient before transport, e.g.:

   - Analyze total situation
   - Recognize and evaluate problems
   - Attend to life threatening emergencies first
   - Provide for safety and protection of patient
   - Care for all injuries
   - Provide care before extricating/moving patient
   - Continue care when extrication is delayed
   - Avoid undue haste and mishandling
   - Search for medical identification emblems

2. Control of the accident scene, e.g.:

   - Anticipate enroute possible hazards posed by the location and type of emergency
   - Exercise precaution in parking ambulance
   - Remove patient from situations threatening lives of patient or rescuer
   - Avoid assuming functions of police or other authorities when present but do not permit their actions to compromise care of the patient
   - If alone, control bystanders and manage relatives
   - Assume subordinate but cooperative role if physician is present

3. Extrication (light) and preparation of patient for transport, e.g.:

   - Do not engage in extrication or rescue procedures when qualified rescue personnel are present
   - Correct life threatening problems and immobilize injured parts before extrication
   - Extricate patient in such a way as to minimize damage to injured parts
   - Continue to administer essential care during extrication
   - Ensure optimal preparation before decision to transport
   - Prevent disturbance and exhaustion before transport
   - Protect patient's valuables
   - Respond to patient's need for religious comfort in the face of death
   - Handle deceased in accordance with local ordinances and procedures

4. Safe and efficient transport and continuing care of the patient on the way to the hospital, e.g.:

   - Ride in compartment with patient
   - Continually observe and protect patient
   - Administer care as indicated or instructed
   - Report changes in patient's condition

   OR

   - Drive in such a manner as to minimize disturbance to affected parts, maximize comfort, prevent shock, allow freedom of breathing and avoid further damage to the patient
   - Know and abide by laws and traffic regulations pertaining to ambulances
   - Exercise emergency privileges properly
   - Make proper use of lights and sirens

5. Orderly transfer of patient and patient information to hospital emergency department, e.g.:

- Communicate vital information regarding patient to emergency department while enroute and upon arrival
- Deliver patient to emergency department
- Alert emergency department regarding high priority patients
- Assist emergency department as needed or as requested
- Maintain a courteous and understanding attitude toward emergency department personnel
- Follow prescribed procedures for returning or exchanging equipment or supplies
- Comply with hospital regulations
- Depart from emergency department when assistance is no longer required

6. Communications, e.g.:

- Dispatch and control movement of ambulances (performed by dispatcher)
- Request supplementary resources, i.e., medical rescue, police or fire
- Advise emergency care personnel on care of patients at scene and during transport (performed by emergency room personnel or dispatcher)
- Alert emergency room personnel of expected arrival and condition of patient
- Distribute patients to appropriate medical facilities
- Coordinate as necessary and/or as required with police, fire departments and other emergency resources
- Follow FCC regulations regarding communication equipment

7. Reporting and record keeping, e.g.:

- Maintain a log of ambulance calls including locations, time of dispatch, arrival at and departure from scene and delivery to emergency department; other items as required
- Interrogate patient, relatives or bystanders; observe circumstances; collect suicide notes, etc., in order to be able to provide the following types of information:
  - Medical: identification of patient; type of accident or nature of illness; rescue measures preceding emergency care; care given at scene and during transport; changes in vital signs; accidents during transport
  - Legal: circumstances in suicide, homicide or rape; animal bites; dying statements; statements of patient or others that may serve as testimony
  - Health: identification and circumstances required by coroner or medical examiner in case of death at scene or during transport; animal bites; radiation, chemical or gas hazards

8. Care of vehicle and equipment, e.g.:

- Maintain the vehicle and all medical, safety and communication equipment in a state of operational readiness
- Replenish supplies
- Sanitize and decontaminate vehicle and equipment routinely and after exposure to communicable diseases

FIELD SITUATIONS

1. An ambulance is the first emergency vehicle to arrive at the scene of a two-car collision. Both cars are upright. A quick survey of life threatening problems has revealed the following patients:

   Car 1 The driver is unconscious and seated in the front seat fastened in his seat belt. The head of the passenger in the front seat has been thrown through the windshield. He is bleeding profusely about the face, is unconscious and his respirations are shallow.

   Car 2 The driver is seated in the front seat. He is sweating and appears to be short of breath. He complains of severe pain in his chest and left arm. The passenger has been thrown from the car. He is lying on the road moaning that he cannot move his legs. He appears to feel no sensation in his legs.

2. An unconscious person is found on a city street. His skin is pale and moist and his pulse is rapid. He is having convulsions.

3. There has been a brawl at the local tavern. One patient is lying on the floor with a knife in his chest. He is bleeding profusely and coughing up frothy blood. Patient No. 2 is unconscious, his respirations shallow, his pulse weak, and blood is dripping from his ears and nose. Patient No. 3 has an angulated compound fracture of the tibia and is bleeding profusely at the fracture site.

4. A man has barricaded himself in the bathroom. There have been sounds of water running. When you arrive at the man's apartment the police have just succeeded in opening the bathroom door. They tell you they have heard no sounds for five minutes. You find the patient face down in the bathtub. He is not breathing, has no pulse and his pupils are dilated and fixed.

5. You are returning from the hospital and a violent thunder storm erupts. You come across a car on which some electric wires have fallen. The driver in opening the front door of the car.

6. You have taped up a sucking chest wound and are transporting the patient to the hospital. You notice that the patient's respirations are worsening.

7. You arrive at a private home and find a woman ranting that her husband plans to kill her and she is going to throw acid at him. You try to calm her from a distance and to keep her husband at a distance. However, he approaches her and she throws the acid in his face.

8. You have been called to a building where there is no known elevator. There is a patient on the third floor having a severe asthmatic attack.

9. You have been called to take a pregnant woman to the hospital to have a baby.

10. An unconscious patient has severe third degree burns of the head, face and neck. His respirations are irregular and his pulse is weak.

* U. S. GOVERNMENT PRINTING OFFICE : 1970 O - 386-625

DO NOT REMOVE
OR
MUTILATE CARD