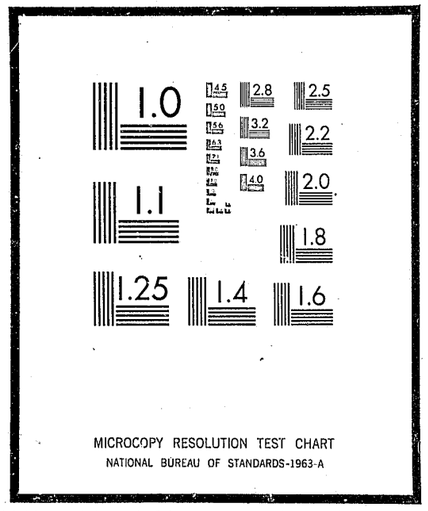

DOT HS - 820 263

emergency medical services

crash injury management

for traffic law enforcement officers

instructor's lesson plans

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

July 1973

FOREWORD

As part of its continuing efforts to improve the safety of the motorist on the nation's highways and roads, the National Highway Traffic Safety Administration recognized the need to develop a standardized approach for providing training in emergency medical care for first responders to traffic accidents. The contract directed that the course be modeled on the 81-hour "Basic Training Program for Emergency Medical Technician--Ambulance" recently developed by Dunlap and Associates, Inc., for the U.S. Department of Transportation.[1]

The basic working documents produced for the program are the Course Guide, designed to be used by the training administrator as the basic planning document for the course, the Instructor's Lesson Plans, prepared to assist the instructor in conducting each lesson, and the Student Study Guide, designed as a workbook to assist the student in reviewing materials presented in class. In addition, a Final Report describes the development of the training course and course documents.

Dr. Aaron Adams of the National Highway Traffic Safety Administration served as Contract Technical Manager. Mr. Frederick J. Lewis of the Rescue and Emergency Medical Services Division and Mr. Martin M. Puncke of the Traffic Regulations and Adjudication Division served as project advisors. The project was directed by Miss Arlene M. Cleven of Dunlap and Associates, Inc., who prepared all course documents. Mr. Joseph T. Fucigna, Executive Vice President of the Corporation, served as responsible corporate officer.

Dunlap and Associates, Inc., is indebted to the following individuals who provided critical technical reviews of draft course materials:

> Dr. Edward A. Rem, Director of Emergency Medical Services, Norwalk Hospital, Norwalk, Connecticut, and the Course Coordinator for the pilot test of the "Basic Training Program for Emergency Medical Technician--Ambulance."

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[1] U.S. Department of Transportation, National Highway Traffic Safety Administration. Basic Training Program for Emergency Medical Technician--Ambulance. Washington, D.C.: U.S. Government Printing Office, No. TD-2.208:EM 3 (Concepts and Recommendations, October 1969), No. TD-2.208: EM 3/2 (Course Guide and Course Coordinator Orientation Program, October 1969), and No. TD-2.208:EM 3/3 (Instructor's Lesson Plans, February 1970).

- Dr. Charles A. Rockwood, Jr., Professor and Chairman of Orthopaedics, University of Texas Medical School at San Antonio, and Chairman of the Committee on Non-Physician Education, American Academy of Orthopaedic Surgeons.

- Dr. George W. Hyatt, Professor of Surgery (Orthopaedics) and Chief of Orthopaedics, Georgetown University Medical Center, and Chairman of the Committee on Injuries, American Academy of Orthopaedic Surgeons.

- Mr. Laurence M. Ford, Director of Fire Training Programs, Hartford State Technical College, Hartford, Connecticut.

We are particularly grateful to the Department of Police Service of New Haven, Connecticut, for providing the equipment, facilities, instructors and students for the pilot test of the course. Dr. Martin L. Piccirillo, Director of Training and Education, served as the training administrator. Able instruction and critical review of course materials were provided by the two course instructors: Sergeant Michael N. Tullo and Patrolman Joseph R. Polio. The cooperation and critical comments received from the eight students in the pilot program are gratefully acknowledged. These students were: Patrolmen Robert L. Coffey, James T. Conners, Thomas J. Farrell, Theodis Fenn, Sr., Thomas H. O'Donnell, Dean B. Runlett, Theodore R. Wilkins, and Edward R. Woods.

TABLE OF CONTENTS

TABLE OF CONTENTS - cont'd

INTRODUCTION

Purpose of the Document

This document has been prepared to aid instructors who are conducting a training program in emergency medical care for first responders to traffic accidents. In most cases, it is expected that the first official at the scene will be a law enforcement officer who is patrolling the roadway in a radio-equipped car.

This document contains detailed outlines for each lesson of the course. Two other documents complete the training program:

- Course Guide--This document has been designed to be used by the training administrator as the basic planning document for the course. It contains a detailed description of the training program and suggestions for planning and implementing the training course.

- Student Study Guide--This document has been designed as a student workbook. It includes the training objectives of each lesson and a set of review exercises as appropriate. It was developed to assist the student in reviewing and reinforcing information presented in the classroom.

Objectives and Scope of the Course

The objective of the course is to provide training in all aspects of emergency medical care required at the scene of a traffic accident. In defining the scope of the course, it is assumed that the rescuer is not an ambulance emergency medical technician. However, since he is expected to be the first person at the scene of an accident, he should be thoroughly familiar with all procedures required for providing basic care to accident victims and removing them from the vehicle if necessary. It is further assumed that he will be traveling in a vehicle with limited space for emergency medical care equipment, no space for transporting a prone or supine patient, and only simple car tools and miscellaneous equipment (that is, it is not expected that he will have power equipment for extrication purposes).

With the preceding objective and limitations in mind, the scope of the course was defined as follows:

- Roles and responsibilities at the accident scene.
- Legal aspects relative to rendering emergency medical care.
- All life-threatening emergencies including airway care, pulmonary and cardiopulmonary resuscitation, control of bleeding, and prevention of shock.
- All crash-related injuries including wounds, fractures and burns.
- Illnesses or donditions that might cause or result from a crash, such as heart attack, stroke, diabetic coma, insulin shock, epileptic attack, emergency childbirth, and alcohol and drug abuse.
- Other emergencies that could be encountered in the rescuer's day-to-day activities, such as ingested poisons, bites and stings, and exposure to heat and cold.
- Patient examination, diagnosis, and triage.
- Gaining access to patients using simple tools carried in a vehicle.
- Moving injured persons from vehicles or the roadway if movement is necessary or desirable.

The emphasis of the emergency care training and the majority of training time is devoted to the practical aspects of emergency care required at an accident scene. Therefore, approximately half of the course is devoted to the practice of crash-related and life-threatening skills and the total course emphasis is on these topics. In addition to classroom practice, field training provides an opportunity to "package" patients in a vehicle and remove them from the vehicle if necessary.

Equipment Coverage

In terms of emergency medical care, it is assumed that the rescuer will have the following equipment and supplies and therefore training is provided in their use: dressings and bandages (triangular and self-adhering roller type), splints for upper and lower extremities, a short spine board or splint with associated neck and back supports and straps, an eye protector (cup or cone), and a blanket. Types of splints are not specified since they

are expected to vary jurisdictionally. In addition, in the event that equipment is available in the jurisdiction, some training time is allotted to an instructor demonstration and student practice with airways, manually operated bag-mask resuscitators and oxygen equipment, in order that students will be familiar with their design and use. If this last group of equipment is regularly available in all patrol cars of the jurisdiction, it would be advisable to add time to the course for more practice in its use.

The specification of emergency medical care equipment is in no way intended to limit the amount of equipment carried in the vehicle. Rather, it is intended to represent a reasonable minimum for the purpose of stabilizing patient conditions and saving lives at the scene of an accident. As stated previously, a basic assumption of course design is that the rescuer is not an ambulance emergency medical technician. The equipment selected for training is considered consistent with the rescuer's function of stabilizing the patient's condition until the ambulance arrives.

Just as the rescuer is not an emergency medical technician, he is also not a member of a rescue crew and therefore does not need detailed training with extrication equipment. It is assumed that properly trained rescue crews are available to him for these services. In terms of other equipment and supplies, therefore, it is assumed that he will have only simple equipment that he might use to gain access to the patient, such as a jack, tire iron, pliers, rope, gloves, screwdriver, hammer and knife.

Course Content

The course consists of a minimum of 40 hours of classroom and field training. Each lesson requires between 1 and 3 hours for completion. The course may therefore be given one or more times per week in daytime or evening sessions or may be compressed into a time frame of one week.

Twenty lessons have been developed for the course. These include all technical lessons, field training and final written and practical examinations. The 20 lessons account for 36 hours of training course time. In addition, it is recommended that four 1-hour "Review and Discussion" lessons be interspersed in the training program. It is suggested that one "Review and Discussion" lesson be included for each 8 hours of training time for the specific purpose of assuring that training course contents are being assimilated. The "Review and Discussion" lessons should be devoted to reviewing appropriate exercises given in the Student Study Guide.

The titles and time required for each of the 20 developed lessons and the four "Review and Discussion" lessons are given on the following page. Suggestions for scheduling lessons are included in the Course Guide.

Titles and Times Required for Course Lessons

Lesson Number and Title	Time (hrs)[1]
Introductory lessons	
1. Introduction to crash injury management training	1
2. Overview of the human body and diagnostic signs	1
Life-threatening emergencies, wounds and fractures	
3. Airway care and pulmonary resuscitation	2
4. Cardiopulmonary resuscitation	3
5. Shock, bleeding and injuries to soft tissues	3
6. Fractures and dislocations of the extremities	3
7. Injuries to the skull, spine, chest and pelvis	2
Medical and environmental emergencies	
8. Heart attack, stroke, diabetes and epilepsy	1
9. Poisons and drugs	1
10. Burns and exposure to heat and cold	1
11. Emergency childbirth	1
Patient access and handling	
12. Gaining access to patients	1
13. Moving patients	1
Review and examination	
-- Review and discussion (four 1-hour sessions)[2]	4
14. Patient examination and triage	2
15. Cardiopulmonary resuscitation practice	1
16. The accident scene: A situational review	2
17. Field training I	3
18. Field training II	3
19. Final written examination	2
20. Final practical examination	2
Total	40 hours

[1] In general, a 10-minute break is included for each hour of instruction.

[2] No formal lesson plans were developed for the "Review and Discussion" lessons since, as stated previously, it is expected that they will be devoted to review of exercises in the Student Study Guide.

References

The medical content of the course has been based on the text, Emergency Care and Transportation of the Sick and Injured, prepared by the American Academy of Orthopaedic Surgeons. This document and other references used in the development of course materials or of potential use to the instructor and student are listed in the appendix.

If the course is given in a compressed time frame of 5 days, it may be unreasonable to expect students to complete reading assignments prior to attending class. Therefore, reading assignments in a specified text have not been included in the course design. Should the instructor wish to utilize a student text, he should select one from those listed in the appendix. In any event, it is recommended that the texts listed in the appendix be available in a library for student reference.

Student Study Guide

The Student Study Guide has been prepared as an exercise workbook to assist students in reviewing materials presented in class. Included in the Guide is a unit of study for each lesson in the crash injury management course. The training objectives are given for each lesson and, for most lessons, a set of review exercises is provided. No review exercises are included when the lesson provides general background information or when the lesson is a review or examination session.

Although the review exercises are designed in the form of test items, the Student Study Guide is not a test. It has been designed to be completed after a lesson or group of lessons has been presented in class. It therefore has been developed to assist students in reviewing and reinforcing information presented in class. It is suggested that review of appropriate Study Guide lesson units serve as a basis for each of the four "Review and Discussion" lessons interspersed in the course schedule.

Using the Lesson Plans

Each lesson plan consists of two parts. The first part briefly outlines the objectives and requirements for teaching the lesson; the second part provides a detailed outline of the lesson content.

Training requirements include, as appropriate, requirements for facilities, personnel and training aids. Training aids include recommendations for slides, films, charts, handouts, etc., as well as specific equipment and materials (for example, resuscitation manikins) needed for the lesson. One film, "Emergency Childbirth," is recommended for the course; it is available on loan from the local Office of Civil Defense.

The outline of instructions gives detailed procedures and contents for each lesson. It includes estimates of elapsed and projected times for each topic area as an aid to the instructor in maintaining his class on schedule as well as a means of indicating the emphasis to be given to a topic area. In addition, a column to the right of the lesson outline lists training aids appropriate for the particular topic area.

The instructor is advised that the course has been closely timed. He should therefore carefully review each lesson prior to teaching to assure that he is completely familiar with the lesson contents and techniques of teaching he plans to use. He should also assure that all equipment and materials required for the lesson are available and operable prior to teaching the lesson. Careful preplanning will help the instructor in maintaining his lesson on schedule.

Measurement of Student Achievement

Trainees will be evaluated on both their technical skills and knowledge. Knowledge is evaluated primarily by the final written test. The pass/fail score for this test should be determined by the local training administrator. "Review and Discussion" sessions provide for interim assessment of student assimilation of course contents.

Technical skills are evaluated by a final practical examination. Students should demonstrate proficiency in all skills tested. In addition, the instructor can evaluate student progress in skill attainment in classroom practice sessions as well as in the field training sessions.

LESSON PLANS

Time: 1 hr.

LESSON 1

INTRODUCTION TO CRASH INJURY MANAGEMENT TRAINING

Objectives: Provide the student with sufficient information for him to:

- Understand course coverage, schedule and requirements.
- Define the rescuer's emergency care role and responsibilities and legal rights and responsibilities relative to emergency care.
- Introduce the student to the emergency care equipment which he will be trained to use.

Training aids: Equipment/materials:

* Oxygen tank and masks
* Bag-mask resuscitator
* S-shaped airway
* Oropharyngeal airway
Triangular bandage
Roller-type bandage
Universal dressing/gauze pad
Paper cup/cone
Upper extremity splint
Lower extremity splint
Short spine board or spine splint with associated neck and back supports and straps
Car tools and equipment

Handouts:

Lesson schedule (one for each student)
Student Study Guide (one for each student)

*An asterisk(*) is used throughout the lesson plan to indicate material or information that may be inapplicable to a given jurisdiction.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:10	INTRODUCTION 1. <u>Need for training.</u> Since the law enforcement officer is likely to be one of the first persons at the scene of an accident, it is especially important that he be able to provide life support and other emergency medical aid to accident victims. ROLES AND RESPONSIBILITIES 1. At the accident scene, the law enforcement officer's primary responsibility is to the patient. 2. The preceding statement is not intended to mean that his primary responsibility is to provide emergency medical care. 3. It does mean that his responsibility is to perform all those activities that will result in stabilization or preferably improvement of the patient's condition. 4. He may need to perform some or all of the following activities: a. Control traffic flow. b. Summon additional help, such as: 1) Ambulance groups for providing care to patients and transporting them to hospitals. 2) Fire departments for extinguishing fires, washing away excessive gasoline spillage, or protecting the scene from fire when power tools are used to extricate pinned victims. 3) Fire, wrecker or other rescue groups for performing rescue and extrication activities. 4) Power company for removing downed wires. Etc.	

Time (Elapsed) Actual	Content	Training Aids
	c. Gain access to the victim. d. Administer emergency medical care. e. Move victims from the vehicle or roadway, if appropriate. f. Solicit and direct help of bystanders. g. Control activities of bystanders. h. Search for all victims, that is, make sure that all victims are accounted for: 1) Some may have been thrown from the vehicle and tossed out of sight, for example, down the side of a hill. 2) Small children might be wedged under seats or up under the firewall. 3) Some patients may have removed themselves from the vehicle and may be wandering around confused and dazed some distance from the scene. i. Complete accident investigation procedures required of a law enforcement officer. Etc. 5. The preceding list is not intended to be sequential or all-inclusive; rather, it attempts to indicate the multiple involvement of the law enforcement officer at the accident scene. His primary concern is the patient, and all his activities are performed with this concern in mind. 6. In terms of emergency medical care, he will provide what is needed until qualified emergency medical technicians from ambulance groups arrive. 7. When emergency medical technicians arrive, he will relinquish the patients to their care, assisting as necessary (for example, in a multiple casualty).	

Time (Elapsed) Actual	Content	Training Aids
(0:10) 0:15	SCOPE OF TRAINING 1. Task analysis. A detailed analysis of accident scene activities such as those outlined in the preceding statements provided a basis for determining the scope of emergency care training. 2. Patrol car equipment. The fact that the rescuer would be traveling in a patrol car with limited space (and possibly limited funds) available for equipment and supplies served to delimit further the scope of the study. The equipment assumed to be available is as follows: Note: Instructor should display and briefly describe all equipment. a. Emergency medical care equipment * 1) Oxygen tank and masks * 2) Bag-mask resuscitator * 3) S-shaped airway * 4) Oropharyngeal airway 5) Triangular bandages 6) Roller-type bandages 7) Universal dressings/gauze pads 8) Eye protector (paper cup or cone) 9) Upper extremity splint 10) Lower extremity splint 11) Short spine board or spine splint with associated neck and back supports and straps b. Car tools and miscellaneous equipment, such as: 1) Jack 2) Tire iron 3) Pliers 4) Rope 5) Gloves 6) Screwdriver 7) Hammer 8) Knife	Emergency care equipment Car tools and miscellaneous equipment

Time (Elapsed) Actual	Content	Training Aids
	3. Scope of training. Based on the preceding analyses and assumptions, the scope of training was defined as follows: a. All life-threatening emergencies including airway care, pulmonary and cardiopulmonary resuscitation, control of bleeding, and prevention of shock. b. All crash-related injuries, including wounds, fractures, and burns. c. Illnesses or conditions that might cause or result from a crash, such as heart attack, stroke, diabetic coma, insulin shock, epileptic attack, emergency childbirth, and alcohol and drug overdose. d. Other emergencies that could be encountered in the rescuer's day-to-day activities, such as ingested poisons, bites and stings, and exposure to heat and cold. e. Patient examination, diagnosis and triage. f. Gaining access to patients using simple tools carried in the vehicle. g. Moving injured patients from vehicles or the roadway if movement is necessary or desirable. Note: Since it is expected that long spine boards may not be carried in patrol cars, movement of spine injured patients by means of the long board is not included. Seated spine-injured patients can be lifted from a vehicle after they are immobilized on a short board.	

Time (Elapsed) Actual	Content	Training Aids
	4. Emphasis a. The emphasis of the emergency care training and the majority of training time is devoted to the practical aspects of emergency care required at an accident scene. b. The student will therefore find that at least half of the course has been devoted to actual practice of emergency care skills in the classroom or in a field setting or to verbal reviews of emergency care knowledge.	
(0:25) 0:10	SCHEDULE 1. Referring to a schedule of lessons, describe how the course is organized and the general contents of each lesson. 2. Explain any applicable course procedures, that is, lunch hour, rest breaks, etc.	Lesson schedule
(0:35) 0:05	STUDENT STUDY GUIDES 1. Distribute Student Study Guides. 2. The Student Study Guide has been prepared as an exercise book. 3. Prior to each Review and Discussion lesson, students are expected to complete the exercises for all lessons covered since the preceding Review and Discussion lesson--referring to the lesson schedule, explain what students are expected to accomplish from the workbook for each Review and Discussion lesson.	Student Study Guide
	*REFERENCES 1. If applicable, distribute reference texts or describe library references students are required or encouraged to study.	

Time (Elapsed) Actual	Content	Training Aids
(0:40) 0:05	LEGAL ASPECTS 1. Review of Good Samaritan or other laws applicable to rendering emergency medical care in the jurisdiction.	
(0:45) 0:05	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	
(0:50)		

Time: 1 hr.

LESSON 2

OVERVIEW OF THE HUMAN BODY AND DIAGNOSTIC SIGNS

Objectives: Provide the student with a brief overview of the design of the body and the diagnostic signs with which he will be dealing in his emergency care work.

Training aids: Illustrations (chart/slide/drawing):

Anatomic charts

- Overall body structure
- Skeletal system
- Muscular system
- Nervous system
- Respiratory system
- Circulatory system
- Digestive system
- Genitourinary system

Medical identification symbol

Time (Elapsed) Actual	Content	Training Aids
(--) 0:30	INTRODUCTION 1. <u>Lesson coverage</u> a. This lesson includes only a <u>brief exposure</u> to the design of the body and the diagnostic signs with which the rescuer will be dealing in his emergency care work. b. Much of the information will be covered in more detail in subsequent lessons. BODY SYSTEMS 1. <u>Skeletal system and body cavities</u>. The skeletal system consists of the bones that form the supporting framework of the body; they also protect body organs. Display anatomic chart and identify major system elements and body cavities: a. <u>Skull.</u> The skull consists of the cranium (which contains the brain) and the face. b. <u>Spinal column</u> 1) The spinal column encloses the spinal cord. 2) The brain connects with the spinal cord through a large opening at the base of the skull in the center of the upper neck. 3) The spinal cord is the central supportive bony structure of the body and consists of 33 bones known as vertebrae. 4) The spine is divided into five sections: a) Cervical spine--neck b) Thoracic spine--upper back c) Lumbar spine--lower back d) Sacrum e) Coccyx or tail bone	Anotomic chart for each system and for overall body structure

Time (Elapsed) Actual	Content	Training Aids
	c. <u>Upper extremities</u> 1) The upper extremities extend from the shoulders to the fingertips. 2) The bone in the upper arm is known as the humerus. 3) The bones in the lower arm are known as the radius and ulna. d. <u>Thoracic (rib) cage</u> 1) The chest is enclosed by 12 ribs which are attached to the thoracic vertebrae in back; the top 10 ribs are attached to the sternum (breastbone) in front. 2) The clavicle (collarbone) connects with the sternum (breastbone). 3) The rib cage encloses the heart and lungs --the vital organs of the body. 4) The diaphragm is a muscle which moves up and down while breathing; it separates the chest cavity from the abdominal cavity. e. <u>Abdominal cavity</u> 1) The back boundary of the abdominal cavity consists of: a) The lumbar spine b) The sacrum c) The coccyx (tail bone) 2) The abdomen contains organs of digestion and excretion including the liver, gall-bladder, spleen, pancreas, kidneys, stomach, intestines, bladder and rectum. 3) The abdomen also contains female reproductive organs.	

Time (Elapsed) Actual	Content	Training Aids
	4) The lower part of the abdomen is more properly called the pelvic cavity. f. Pelvic cavity 1) The pelvic cavity is bounded by the sacrum, hip bones and the pubis; it is continuous with the abdominal cavity. 2) The pelvic cavity protects the lower abdomen: the bladder, the rectum and the internal female sexual organs. g. Lower extremities 1) The lower extremities extend from the hips to the toes. 2) The bone in the upper leg (thigh) is known as the femur. 3) The bones in the lower leg are known as the tibia and fibula. 2. Muscular system. The muscular system consists of the tissue that contracts and relaxes to permit body movement or function. a. Voluntary muscles--those which we control at will, for example, the skeletal muscles that permit us to move. b. Involuntary muscles--those which work automatically, for example, the diaphragm which permits us to breathe. c. Cardiac muscle --the walls of the heart are a special type of involuntary muscle that keep the heart functioning automatically. 3. Nervous system. The nervous system consists of the brain, spinal cord and nerves that control and permit all body activities and sensations. A muscle will not move if the nerves which serve it are cut.	

Time (Elapsed) Actual	Content	Training Aids
	4. Respiratory system. The respiratory system consists of the organs of the body which permit us to breathe. It provides for the intake of oxygen needed by the body to survive and the release of carbon dioxide and other substances. Main elements are: a. Nose and mouth b. Pharynx c. Larynx d. Trachea e. Bronchi f. Lungs 5. Circulatory system. The circulatory system consists of the heart (a pump) and a system of arteries which transport blood containing oxygen to all body systems, capillaries through whose thin walls oxygen and other products are exchanged with body cells, and veins which transport blood containing waste products from body cells to be eliminated. 6. Digestive system. The digestive system consists of the organs which permit us to eat, digest, and eliminate foods, including: a. Mouth and throat b. Esophagus c. Stomach d. Liver e. Gallbladder f. Pancreas g. Intestines h. Rectum 7. Genitourinary system. The genitourinary system consists of the organs which permit us to eliminate certain waste materials filtered from the blood and to reproduce, including: a. Kidneys b. Ureter c. Urethra d. Bladder e. Male and female reproductive organs	

Time (Elapsed) Actual	Content	Training Aids
(0:30) 0:15	DIAGNOSTIC SIGNS 1. Signs vs. symptoms. Throughout the course, reference will be made to signs and symptoms; therefore, an initial definition of their meaning is in order: a. A sign is something the rescuer sees, hears or feels; for example, a pale face, no respirations, cold skin. b. A symptom is something the patient tells about himself, that is, he feels nauseous, his back hurts, he has no sensation in the extremities. 2. Use in diagnosis. The rescuer will learn many signs and symptoms throughout the course and will learn to combine them into a meaningful diagnosis of the patient's condition. 3. Overview of signs. A brief overview of the important diagnostic signs is given below. a. Pulse 1) The normal pulse rate for adults is 60 to 80 beats per minute; a normal rate for children is 80 to 100 beats per minute. 2) The pulse is normally taken at the carotid artery in emergency care work--have each student find his own carotid pulse. 3) The pulse can be: . Absent . Slow or fast . Weak or pounding . Irregular	

Time (Elapsed) Actual	Content	Training Aids
	b. Respirations 1) The normal respiratory rate for adults is about 17 breaths per minute; for children, it is 20 to 25 breaths per minute; for infants the rate is 25 to 35 breaths per minute. 2) Respirations may be heard or felt at the nose and mouth, and the chest can be seen rising and falling. 3) Respirations can be: . Absent . Slow or fast . Shallow or deep . Gasping, labored, or choking c. Temperature 1) Normal body temperature is 98.6°. 2) In emergency care, temperature is estimated by feel using the back of the hand on the patient's skin. 3) The skin is largely responsible for temperature regulation by radiation of heat and evaporation of water. 4) The skin can be: . Cold or hot . Wet, clammy or dry d. Skin color 1) Skin color is a useful sign for lightly pigmented people. 2) Skin color can be: . White, pale or ashen . Red or flushed	

Time (Elapsed) Actual	Content	Training Aids
	. Blue (for people with dark pigmentation, blue may be noted around the fingernails) e. Pupils of the eyes 1) The pupils of the eyes are normally equal in size and constrict (get small) when exposed to light. 2) Pupils can be: . Dilated (enlarged) . Constricted . Unequal . Fixed f. State of consciousness 1) The normal person is alert, oriented and responds to vocal or physical stimuli. 2) A person's state of consciousness may range from normal to mildly confused, disoriented, or unconscious. g. Inability to move on command--an indicator of paralysis. 1) The normal conscious person can move his body when requested to do so. 2) A person may not be able to move his legs, both his arms and his legs, or one side of his body. h. Reaction to physical stimulation--an indicator of paralysis. 1) The normal person can feel someone touch his body. 2) A person may have no sensation or a numb feeling in arms and/or legs or certain parts of the body.	

Time (Elapsed) Actual	Content	Training Aids
	4. Medical identification symbols a. People with special medical problems (for example, diabetes, epilepsy, acute allergic reactions) frequently wear a medical identification symbol on which the nature of the problem is indicated. b. These are usually worn as a bracelet or necklace but may be carried in card form in a purse or wallet. c. If the wearer is involved in an accident in which he cannot talk, these symbols can give valuable information about the wearer and care that he needs.	Chart/slide/drawing of medical identification symbol
(0:45) 0:05 (0:50)	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	

Time: 2 hrs.

LESSON 3

AIRWAY CARE AND PULMONARY RESUSCITATION

Objectives: Provide the student with sufficient information for him to:

- Describe the importance of oxygen to the body, particularly the brain
- Describe components of the respiratory system and explain how the system works
- Describe the signs of adequate and inadequate breathing
- *. Describe the technique for inserting and precautions to follow when using airways
- Describe airway care and resuscitation procedures for neck breathers (laryngectomees)

Provide the student with sufficient practice for him to:

- Demonstrate on a manikin the four techniques for maintaining an open airway
- Demonstrate on a manikin procedures for dislodging foreign objects from the airway
- Demonstrate on an adult manikin the mouth-to-mouth and mouth-to-nose techniques of pulmonary resuscitation and on an infant manikin the mouth/nose technique
- *. Demonstrate ventilation of a manikin using the bag-mask resuscitator
- *. Demonstrate setting up, using and shutting down oxygen equipment

Training aids: Equipment/materials:

Resuscitation manikin (one for each 5 students)
Infant resuscitation manikin (one for each 10 students)
* Bag-mask resuscitator (one for each 5 students)
* S-shaped airway (one for each 10 students)
* Oropharyngeal airway (one for each 5 students)
* Oxygen tank and masks (one for each 10 students)

*An asterisk (*) is used throughout the lesson plan to indicate that the information presented may be inapplicable to some jurisdictions.

(continued)

Training aids: (Continued) Illustrations (chart/slide/drawing):

Respiratory system
Alveoli
Lungs, rib cage and pleura
Airway obstruction by tongue
Four techniques for maintaining an open airway
* Inserting airways
Trachea of partial and total neck breathers

Instructors: One for each 10 students for the practice period.

Note: In this lesson, the 10-minute breaks have been eliminated in order to accommodate training in use of airways, bag-mask resuscitator and oxygen.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Lesson coverage a. Design of the respiratory system and how it functions to supply the body with oxygen. b. Signs of adequate and inadequate breathing. c. Methods of maintaining an open air passage. d. Methods of resuscitating the non-breathing patient. 2. Importance of oxygen a. All living cells. All living cells of the body require oxygen to survive. b. Brain cells 1) For cells in the brain and nervous system, oxygen is particularly important. 2) Without oxygen, they will die in 4 to 6 minutes. 3) If brain cells die, the patient may still live, but he will be a vegetable. 3. Criticality of lesson a. A non-breathing patient is a true emergency. b. Skills learned in this lesson are critically important. c. Correct performance of these skills may mean the difference between life and death to the patient.	

Time (Elapsed) Actual	Content	Training Aids
	4. Lesson objectives. At the end of the lesson, each student will be able to: a. Describe the importance of oxygen to the body, particularly the brain. b. Describe components of the respiratory system and explain how the system works. c. Describe signs of adequate and inadequate breathing. *d. Describe the technique for inserting and precautions to follow when using airways. e. Describe airway care and resuscitation procedures for neck breathers (laryngectomees). f. Demonstrate on a manikin the four techniques for maintaining an open airway. g. Demonstrate on a manikin procedures for dislodging foreign objects from the airway. h. Demonstrate on an adult manikin the mouth-to-mouth and mouth-to-nose techniques of pulmonary resuscitation and on an infant manikin the mouth/nose technique. *i. Demonstrate ventilation of a manikin using the bag-mask resuscitator. *j. Demonstrate setting up, using and shutting down oxygen equipment.	
(0:05) 0:10	THE RESPIRATORY SYSTEM 1. Anatomy and physiology a. Pharynx. Air entering the nose or mouth or food entering the mouth passes to the pharynx.	Chart/slide/drawing of respiratory system

Time (Elapsed) Actual	Content	Training Aids
	b. Trachea 1) At the base of the pharynx are two passageways. 2) The esophagus (in back) takes food and liquids to the stomach. 3) The trachea (in front) takes air to the lungs and is known as the windpipe. c. Epiglottis 1) A valve called the epiglottis guards the opening of the trachea. 2) It closes when foods or liquids are present in the pharynx. 3) Occasionally foods or liquids get past the epiglottis and cause an emergency situation. d. Larynx 1) The larynx is the first part of the trachea. 2) It is the "voice box" which contains the vocal cords permitting us to speak. 3) The Adam's apple is the front portion of the larynx. e. Bronchi. The trachea divides into two smaller tubes, the right and left bronchi, which enter the lungs. f. Lungs 1) In the lungs, the bronchi branch into smaller parts until they finally end in millions of tiny air sacs, called alveoli.	Chart/slide/drawing of alveoli

Time (Elapsed) Actual	Content	Training Aids
	2) Oxygen passes through the thin walls of the alveoli to tiny capillaries. 3) Carbon dioxide and other waste gases pass from the capillaries to the alveoli and are breathed out into the atmosphere. g. <u>Diaphragm</u> 1) The diaphragm is a muscle that separates the chest cavity from the abdominal cavity. 2) When the diaphragm and rib muscles contract, the chest cavity enlarges and fills with air. 3) When the muscles relax. the space becomes smaller and air is forced out. 4) The mechanics of breathing can be compared to the operation of a bellows: when it is open, air enters; as it closes, air is forced out. h. <u>Pleura</u> 1) The layer of slippery tissue covering the lungs is known as the pleura. A layer of this tissue also lines the chest cavity. In between is a thin layer of fluid. 2) When the chest expands, the lung is pulled with it and expands by suction exerted through the pleura. 3) If either of these pleura is torn, the capability for normal expansion of the lungs is lost. 2. <u>Control of breathing</u> a. Breathing is controlled by the brain. b. Although we can hold our breath or breathe faster or deeper if we wish, we cannot maintain these conditions indefinitely.	Chart/slide/drawing of lungs, rib cage and pleura

Time (Elapsed) Actual	Content	Training Aids
	c. The brain is aware of oxygen and carbon dioxide levels in all parts of the body. When these become abnormal, it will override other conditions (e.g., holding one's breath) and take over operation of the respiratory system. (0:15) 0:05 SIGNS 1. <u>Adequate breathing</u> a. Chest and abdomen <u>rise</u> and <u>fall</u> as air is breathed in and out. b. In most cases, air can be <u>heard</u> coming out of the mouth. c. Air can be <u>felt</u> coming out of the nose and mouth. 2. <u>Inadequate breathing</u> a. No air can be heard or felt at the nose and mouth, but the patient is struggling to breathe; muscles on the front of the neck stand out prominently. b. The breathing is noisy or has a bubbling sound. c. The breathing is slow; normal breathing rate for adults is about 17 breaths per minute. d. The patient is cyanotic. 1) Cyanosis is a grayish-blue discoloration of the skin and membranes around the lips, ears, nailbeds and sometimes the whole body. 2) For non-whites, the nails may be the only reliable indicator of the presence or absence of cyanosis.	

Time (Elapsed) Actual	Content	Training Aids
	MAINTAINING AN OPEN AIRWAY	
	1. Obstruction by tongue. In an unconscious patient, the tongue can fall back and obstruct the airway, particularly if the patient is on his back or if his neck is flexed (that is, his chin is down on his chest).	Chart/slide/drawing of airway obstruction by tongue
	2. Positioning of head and jaw a. Tilting the head backward. By placing one hand on the patient's forehead and the other under his neck, the head is tilted back and the neck is extended. The mouth usually opens automatically. b. Lifting the chin. By hooking a thumb around the patient's lower teeth, the chin can be lifted forward. c. Lifting the jaw. By placing the fingers under the patient's jaw, the jaw can be lifted forward. Note: If a broken neck or upper spinal cord is suspected, techniques b and c are preferable. d. Turning to a face-down position. Placing the patient on his side permits the tongue to fall forward and the airway to open. It also permits saliva and mucus to drain out. The neck should be extended.	Chart/slide/drawing of four techniques for maintaining an open airway
(0:20) 0:05	FOREIGN MATERIAL 1. Loose material a. All foreign material that might block the airway (blood, mucus, phlegm, loose teeth, etc.) should be removed from the patient's mouth. b. Procedure--demonstration on manikin. 1) Turn the patient's head to one side. 2) Open the mouth. 3) Swab the throat with a finger, wrapped in a clean cloth or handkerchief if available.	Manikin

Time (Elapsed) Actual	Content	Training Aids
	2. Dislodging obstructions--demonstration on manikin of procedures to follow if the patient is choking from a foreign object caught in his throat and is unable to dislodge it by coughing. a. Place the patient in a head-down position--head lower than the chest (if possible). b. Hit him on his back between the shoulder blades or quickly compress the abdomen for a minute in an attempt to force air out of the lungs and dislodge the object. Note: The head should be lower than the body so that the object can fall out of the airway.	
(0:25) 0:10	MOUTH-TO-MOUTH (NOSE) TECHNIQUE OF PULMONARY RESUSCITATION 1. Advantages a. It requires no extra equipment. b. It requires only one person. c. It can be applied immediately in any situation (e.g., automobile, water). d. It gives the best ventilation of the lungs (as contrasted to previously used manual pressure techniques). The air we breathe in contains about 20% oxygen; even the air we breathe out contains 15 to 18% oxygen. e. The rescuer's hands are free and can be used to assure an open airway, decompress a distended stomach, etc. f. It is less fatiguing to the rescuer than older manual pressure methods and, therefore, can be continued for a longer period of time. g. It is easy to gauge the adequacy of resuscitation.	

Time (Elapsed) Actual	Content	Training Aids
	2. Mouth-to-mouth technique--manikin demonstration	Manikin
	a. Clear mouth of loose materials.	
	b. Open the airway by tilting the head back.	
	c. Place one hand on the patient's forehead and pinch the nose; place the other hand under the patient's neck.	
	d. Take a deep breath, make a tight seal around the patient's mouth, and blow air into the patient's mouth until the chest rises.	
	e. Remove your mouth to allow air to come out of the patient's airway.	
	f. Repeat this cycle 12 to 15 times per minute. Note: The rhythm is not as important as the volume of air--thus the rescuer must blow until he sees the chest rise.	
	g. If the stomach becomes distended, press it to force air out. Note: The patient will likely belch and may vomit.	
	h. If the patient vomits, turn the patient's head to one side, remove the vomitus, and continue with resuscitative efforts.	
	Note: With regard to sanitary aspects of mouth-to-mouth resuscitation, a clean handkerchief or gauze placed over the patient's mouth will not seriously hamper inflation of the lungs.	
	3. Variations for infants--manikin demonstration	Infant resuscitation manikin
	a. Seal your mouth around the infant's mouth and nose.	
	b. Gently inflate the chest (with small puffs) at the rate of 20 to 30 times per minute until the chest rises--excessive pressure could cause lung damage.	

Time (Elapsed) Actual	Content	Training Aids
	4. Mouth-to-nose technique	
	a. It may be difficult to use the mouth-to-mouth technique for the following reasons:	
	1) There may be a severe injury in the mouth region.	
	2) The rescuer may not be able to make a tight seal because the patient has a large mouth, no teeth, etc.	
	3) The patient's tongue may be badly swollen.	
	Note: Some rescuers find the mouth-to-nose technique easier and less distasteful to them than the mouth-to-mouth technique.	
	b. Manikin demonstration	Manikin
	1) Hold the patient's lips sealed with a thumb on the lower lip.	
	2) Take a deep breath, seal your mouth around the patient's nose and blow air into the lungs until the chest rises.	
	3) Remove your mouth from the patient's nose and open the patient's mouth for exhalation.	
	Note: About one patient in three will develop an obstruction in exhalation if the mouth is not opened due to a flap-like valve effect caused by the soft palate at the back of the throat.	
(0:35) 0:10	*MECHANICAL AIDS	
	Note: If airways are not used in the jurisdiction, skip to item 2 below. If no mechanical aids are available, skip to the next major subsection (Oxygen Therapy).	

Time (Elapsed) Actual	Content	Training Aids
	1. Airways a. Purpose 1) Airways may be used to maintain an open airway and to provide pulmonary resuscitation.	S-shaped and oropharyngeal airways
	2) Airways used for pulmonary resuscitation are provided for the convenience of the rescuer and do not improve ventilation.	
	b. Display and description--including infant, child and adult sizes.	
	c. Technique for inserting	Chart/slide/drawing of inserting airways
	1) Open the airway.	
	2) Clear obvious obstructions from the throat.	
	3) Insert the airway on top of the tongue and far enough back in the throat to be behind the tongue.	
	4) Hold the jaw shut to hold the airway in place.	
	d. Cautions	
	1) Airways will not be tolerated by a conscious patient.	
	2) They may cause retching and vomiting in an unconscious patient; therefore, a patient with an airway inserted must be constantly watched.	
	3) The tongue and chin must be pulled forward to permit the airway to slide behind the tongue into the pharynx.	
	4) The rescuer must be ready to remove the airway quickly should there be signs that the patient may breathe on his own or regurgitate.	

Time (Elapsed) Actual	Content	Training Aids
	2. Bag-mask resuscitator a. Purpose. The bag-mask resuscitator does not improve ventilation over the mouth-to-mouth (nose) technique; however, it is less fatiguing.	
	b. Display and description	Bag-mask resuscitator
	1) It consists of a mask, system of valves, self-inflating bag, and oxygen tube-connector.	
	2) Masks come in infant, children and adult sizes.	
	3) The mask forms an airtight seal over the patient's mouth and nose.	
	4) The bag reinflates rapidly when it has been squeezed and released.	
	5) The system of valves permits air to enter the mask and the patient's lungs when the bag is squeezed.	
	6) Air returning from the lungs is expelled through an exhaust valve and does not re-enter the bag.	
	c. Technique--manikin demonstration	Manikin
	1) Clear the airway of foreign matter.	
	2) With one hand, hold the mask in place and lift the patient's jaw to maintain an open airway. The thumb and forefinger hold the mask; the remaining fingers grip the underside of the patient's jaw.	
	3) Squeeze the bag with the other hand until the patient's chest rises.	
	4) Release your grip on the bag and let it self-inflate.	
	Note: An oropharyngeal airway will help maintain an open air passage.	

Time (Elapsed) Actual	Content	Training Aids
	Note: Because of the exhaust valves that permit air from the lungs to be expelled to the atmosphere, the mask need not be removed from the patient's face unless there are signs that he will regurgitate. *5) If available, add oxygen to the air mixture.	
(0:45) 0:10	*OXYGEN THERAPY 1. Use a. The importance of oxygen to the body has been emphasized previously. b. Many patients will benefit from highly concentrated oxygen administration. c. When used with a bag-mask resuscitator, the patient can be provided with a high concentration of oxygen. d. The rescuer is advised that inhalation is not a substitute for resuscitation. 2. Equipment operation--demonstrate on actual equipment a. Setting up the equipment 1) Removing protective cap 2) "Cracking" the valve 3) Attaching regulator to reduce pressure 4) Adjusting flow b. Administering oxygen to a patient 1) Attaching administering apparatus to regulator 2) Adjusting the flow 3) Using appropriate size mask	Oxygen tank and masks

Time (Elapsed) Actual	Content	Training Aids
	c. Closing down the apparatus 3. Safe practices in dealing with oxygen a. Oils or grease should never be used on oxygen equipment. b. No smoking or open flames should be permitted near oxygen. c. Equipment should be kept in good order and checked regularly.	
(0:55) 0:10	THE LARYNGECTOMEE (NECK BREATHER) 1. The condition a. Some persons have all or part of their larynx removed through surgery. b. These persons have a hole (known as a stoma) in the trachea. c. Those whose complete larynx has been removed breathe only through the stoma. d. Those whose larynx has been partially removed breathe both through the stoma and through the nose and mouth. In the partial neck breather, a tube graft from just within the stoma connects with the base of the tongue and provides a so-called speaking tube. e. Laryngectomees are rare; however, the rescuer should be aware that such individuals exist and how to care for them. If there is no exhaled air at nose and mouth, he should always check the patient's neck. 2. Airway care procedures a. Remove all coverings (e.g., scarves, ties, necklaces) from the stoma area.	Chart/slide/drawing of trachea of partial and total neck breathers

Time (Elapsed) Actual	Content	Training Aids
	b. Do not place the patient on his stomach since loose dirt or other particles may enter the stoma. 3. Resuscitation procedures a. Clear the stoma of foreign matter. b. Make a seal with your mouth over the stoma and blow until the chest rises. c. If the chest does not rise, suspect a partial neck breather and seal the nose and mouth with one hand and repeat the process. To seal the nose and mouth, pinch off the nose between the third and fourth fingers, seal the lips with the palm of the hand, place the thumb under the chin and press upward and backward. d. When the chest rises, remove your mouth from the stoma and permit the chest to fall. *e. If a bag-mask resuscitator is available, use an infant size mask to form a seal over the stoma.	
(1:05) 0:55	PRACTICE (groups of no more than 5 students per adult manikin and 10 students per infant manikin) 1. Each student should demonstrate on a manikin techniques for maintaining an open airway. 2. Each class member should practice both mouth-to-mouth and mouth-to-nose resuscitation on an adult manikin and mouth/nose resuscitation on an infant manikin. *3. Each student should practice resuscitating a manikin by use of the bag-mask resuscitator (if used in the jurisdiction). *4. Students should practice obtaining a tight seal with the bag-mask resuscitator on other students (if used in the jurisdiction).	Manikins

Time (Elapsed) Actual	Content	Training Aids
	*5. Each student should demonstrate setting up, administering, and shutting down oxygen apparatus. 6. All students not working directly on the manikin or with the bag-mask resuscitator or oxygen equipment should watch the students who are and should attend to the instructor's critique. 7. The instructor should use the practice period not only for perfection of technique but also for emphasis of all points covered in the lesson.	
(2:00)		

Time: 3 hrs.

LESSON 4

CARDIOPULMONARY RESUSCITATION

Objectives:

Provide the student with sufficient information for him to:

- Describe how the heart functions
- Describe the signs of cardiac arrest
- Describe the technique of cardiopulmonary resuscitation and variations in technique for infants and small children
- Identify organs near the heart and dangers to the patient if cardiopulmonary resuscitation is not performed correctly

Provide the student with sufficient practice for him to:

- Demonstrate on a manikin cardiopulmonary resuscitation by a lone rescuer
- Demonstrate cardiopulmonary resuscitation on an infant manikin
- Demonstrate on a manikin cardiopulmonary resuscitation as a member of a team performing both as a ventilator and as a compressor, including changing positions during resuscitation

Training aids:

Equipment/materials:

Resuscitation manikin (one for each 5 students)
Infant resuscitation manikin (one for each 10 students)
Blanket (one for each resuscitation manikin)

Illustrations (chart/slide/drawing):

The design of the heart
Chest cavity showing ribs, heart, lungs, liver, spleen
Proper location of hands on sternum

Note: The American Heart Association slide series (EM 376) entitled Emergency measures in cardiopulmonary resuscitation might be useful for this lesson.

Instructors:

One for each 10 students for the practice period.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. <u>Lesson coverage</u> a. Design of the heart and how it functions to provide the body with oxygen. b. Physical structure of the chest cavity and organs located near the heart. c. Signs of cardiac arrest. d. Technique of cardiopulmonary resuscitation. e. Complications if cardiopulmonary resuscitation is not performed correctly. 2. <u>Importance of oxygen</u>. Re-emphasis of importance of oxygen to body tissues, particularly the brain. 3. <u>Criticality of lesson.</u> As with the previous lesson, cardiac arrest represents a true emergency, therefore: a. Skills learned in this lesson are critically important. b. Correct performance of these skills may mean the difference between life and death to the patient. 4. <u>Lesson objectives</u>. At the end of the lesson, each student will be able to: a. Describe how the heart functions. b. Describe the signs of cardiac arrest. c. Demonstrate on a mainkin cardiopulmonary resuscitation by a lone rescuer. d. Demonstrate cardiopulmonary resuscitation on an infant manikin.	

Time (Elapsed) Actual	Content	Training Aids
	e. Demonstrate on a manikin cardiopulmonary resuscitation as a member of a team, including changing positions during resuscitation. f. Explain variations in technique for infants and small children. g. Identify organs near the heart and dangers to the patient if cardiopulmonary resuscitation is not performed correctly.	
(0:05) 0:10	THE HEART 1. <u>The heart as a pump</u> a. The left part of the heart receives oxygenated blood from the lungs and pumps it out to all body parts. b. The right part of the heart receives blood that has circulated through the body and pumps it to the lungs to be reoxygenated. c. A system of one-way valves keeps blood moving in the proper direction and prevents backflow of the blood.	Chart/slide/drawing of design of the heart
	2. <u>Location</u> a. The heart is located in the chest cavity under the sternum and between the lungs. b. The liver and spleen are located below the heart--the liver to the right and center and the spleen to the left. c. Laceration of the lungs, liver or spleen could prove fatal to the patient--the first due to associated breathing difficulties and the others due to severe bleeding since they both have a large blood supply. It is therefore especially critical that the skill learned in this lesson be learned correctly.	Chart/slide/drawing of chest cavity showing ribs, heart, lungs, liver, spleen

Time (Elapsed) Actual	Content	Training Aids
(0:15) 0:05	SIGNS OF CARDIAC ARREST 1. The patient is not breathing--ask a member of the class to give the signs of respiratory arrest. 2. The patient has no carotid pulse--have each class member find his own carotid pulse and that of another student. 3. The pupils of the eye are dilated (enlarged).	
(0:20) 0:50	TECHNIQUE OF CARDIOPULMONARY RESUSCITATION 1. General procedures a. Firm surface. Place patient on a firm surface, such as the ground or a spine board; CPR cannot be performed with the patient in a sitting position. b. Ventilation. Adequately ventilate the lungs with oxygen since compression without ventilation is useless. c. Location of hands. Locate the hands on the lower half of the sternum avoiding the xyphoid process (the lowest 1 to 1-1/2 inches). d. Positioning of hands. Place the heel of one hand on top of the other, with fingers raised so that no contact is made with the ribs. e. Positioning of body. Lean over the patient with your elbows straight so that the weight of your body is assisting in compression of the sternum. f. Rate of compression. Compress the sternum approximately 60 to 80 times per minute. g. Amount of compression. For an adult, compress the sternum about 1-1/2 to 2 inches.	Chart/slide/drawing of location of hands on sternum

Time (Elapsed) Actual	Content	Training Aids
	2. One-man technique--manikin demonstration a. Airway. First assure a clear and open airway. b. Ventilation. Ventilate the lungs 3 to 5 times. c. Compression. Perform 15 compressions of the sternum. d. Alternations. Alternate 15 compressions with 2 quick and full ventilations.	Manikin
	3. Two-man technique--manikin demonstration. (Use class member or assistant instructor as second rescuer.) a. Airway. Ventilator assures a clear and open airway. b. Ventilation. Ventilator ventilates the lungs 3 to 5 times. c. Compression. Second rescuer performs 5 compressions of the sternum. d. Alternations. Ventilator imposes one breath after each 5 compressions. e. Changing positions. Ventilator and compressor effect a smooth change in positions during resuscitation.	Manikin
	4. Children. For children up to 8 or 10 years, only one hand should be used for compression and less pressure should be applied.	
	5. Infants--manikin demonstration. For infants, only the tips of two fingers of one hand should be used for compression.	Infant resuscitation
	6. Signs of effective resuscitation a. A carotid pulse can be felt (when working as a team, the ventilator should feel a pulse with each compression). b. Pupils constrict. c. Skin color improves.	

Time (Elapsed) Actual	Content	Training Aids
	d. There may be spontaneous gasping respirations. e. There may be spontaneous movement of the patient's arms or legs. f. The heart may resume normal beating. 7. Complications a. Review of the structure of the chest cavity and location of organs proximal to the heart. b. Emphasis of the importance of correct performance of the technique and dangers to the patient if it is not performed correctly, that is: 1) Broken ribs 2) Broken sternum 3) Lacerations of the liver, spleen, lungs or heart 4) Damage to the pleura resulting from broken ribs	Chart/slide/drawing of chest cavity showing ribs, heart, lungs, liver, spleen
(1:10) 0:10	TEN-MINUTE BREAK	
(1:20) 1:30	PRACTICE (groups of no more than 5 students per adult manikin and 10 students per infant manikin) 1. Each student should demonstrate the one-man technique of cardiopulmonary resuscitation on both adult and infant manikins. 2. Each student should serve both as a ventilator and compressor in demonstrating the two-man technique on a manikin, and should change positions during resuscitation.	Manikins

Time (Elapsed) Actual	Content	Training Aids
(2:50)	3. The instructor should use the practice period not only for perfection of technique but also for emphasis of all points covered in the lesson	

Time: 3 hrs.

LESSON 5

SHOCK, BLEEDING, AND INJURIES TO SOFT TISSUES

Objectives: Provide the student with sufficient information for him to:

- Describe the design, functions and components of the circulatory system
- Describe the meaning of shock, signs of shock, and techniques for preventing shock
- Describe the meaning of and emergency care for anaphylactic shock
- Describe the signs, symptoms and emergency care for internal bleeding
- Describe the differences between arterial, venous and capillary bleeding
- Describe means of controlling bleeding
- Describe management of open and closed soft tissue wounds

Provide the student with sufficient practice for him to demonstrate proficiency in dressing and bandaging various body parts

Training aids: Equipment/materials:

Triangular bandage (one for each student)
Roller-type bandage (one for each student)
Universal dressing/gauze pad (one for each student)
Paper cup/cone (one for each student)
Stick for demonstrating tourniquet application

Illustrations (chart/slide/drawing):

Design of heart
Circulatory system
Brachial and femoral pressure points
Face of person in shock

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Lesson coverage a. The design of the circulatory system. b. Signs and meaning of shock and techniques for preventing shock. c. Signs of external and internal bleeding and techniques for controlling bleeding. d. Management of patients with injuries to soft tissues. e. Dressing and bandaging injuries to various body parts. 2. Need for lesson a. Severe bleeding and shock are life-threatening emergencies. Proper care may mean the difference between life and death to the patient. b. Soft-tissue injuries will be frequently observed in accident situations. Proper care of wounds can control bleeding, prevent infection, arrest shock and aid in patient comfort and well-being. 3. Lesson objectives. At the end of the lesson, each student will be able to: a. Describe the design, functions and components of the circulatory system. b. Describe the meaning of shock, signs of shock and techniques for preventing shock. c. Describe the meaning of and emergency care for anaphylactic shock.	

Time (Elapsed) Actual	Content	Training Aids
	d. Describe the signs, symptoms and emergency care for internal bleeding. e. Describe the differences between arterial, venous and capillary bleeding. f. Describe means of controlling bleeding. g. Describe management of open and closed soft-tissue wounds. h. Demonstrate proficiency in dressing and bandaging various body parts.	
(0:05) 0:10	MECHANICS OF CIRCULATION 1. System elements and functions a. Heart. The heart is a hollow muscular organ. 1) The left part of the heart receives oxygenated blood from the lungs and pumps it to all body parts. 2) The right part of the heart receives blood from all body parts and pumps it to the lungs to be reoxygenated. b. Arteries. Arteries carry freshly oxygenated blood to the body. c. Capillaries. Each artery divides into smaller and smaller branches and finally forms capillaries. Through the very thin capillary walls, oxygen, carbon dioxide and other substances are exchanged between body cells and the circulatory system. d. Veins. Veins collect deoxygenated blood from the capillaries and carry it back to the heart.	Chart/slide/drawing of: Design of heart Circulatory system

Time (Elapsed) Actual	Content	Training Aids
	2. Pulse. Each time the heart pumps, a pulse can be felt throughout the arterial system. The pulse can most easily be felt where a large artery is close to the skin surface, that is: a. The radial pulse) Demonstrate location of b. The carotid pulse) pulses and have each c. The femoral pulse) class member find his own pulses and those of a neighbor. 3. Blood a. Composition. Blood is a red, sticky fluid that travels through the circulatory system. The normal adult has six quarts of blood. b. Functions 1) Blood carries oxygen to body tissues and removes waste products. 2) It carries cells that combat infection in the body. 3) It has a capability of clotting; clotting normally takes 6 to 7 minutes.	
(0:15) 0:15	SHOCK 1. Definition. Shock is a failure of the circulatory system resulting in insufficient oxygen being distributed to body parts. 2. Causes. Shock is caused by: a. Failure of the heart to pump sufficient blood. b. Severe bleeding so that there is insufficient blood traveling through the system.	

Time (Elapsed) Actual	Content	Training Aids
	c. Breathing problems resulting in insufficient oxygen traveling through the system. d. Lack of muscle tone of the blood vessels so that they enlarge and there is insufficient blood to fill them. 3. Signs and symptoms a. Restlessness and anxiety (these signs may precede all others) b. Weak and rapid (thready) pulse c. Cold and clammy skin d. Profuse sweating e. Pale or cyanotic face f. Breathing shallow, labored, rapid, possibly irregular or gasping g. Eyes dull or lusterless with dilated pupils h. Marked thirst i. Possible nausea or vomiting	Photograph of face of person in shock
	4. Emergency care a. Emphasis 1) Once it occurs, there is no way for the rescuer to reverse a shock state with current emergency care methods; he can only keep the state from worsening--the patient needs medical care. 2) It is especially important that severe shock be prevented in all emergency cases; preventing shock means caring for the whole patient. b. Technique--ask a member of the class how he would care for the whole patient. Critique his comments making sure that the following are included:	

Time (Elapsed) Actual	Content	Training Aids
	1) Restore breathing and heartbeat as necessary. 2) Control bleeding. *3) Administer oxygen. 4) Splint fractures as necessary. 5) Avoid rough handling. c. Body positioning. The following positionings of the body should be utilized in shock: 1) Normally the lower extremities should be elevated. By gravity, this will reduce the blood in the extremities and may improve the blood supply to the heart. If the patient has leg fractures, the legs should not be elevated unless they are well splinted. 2) If there are indications of head injuries, the head should be raised slightly to reduce pressure on the brain. The feet may also be elevated. 3) If there are breathing difficulties, the patient may be more comfortable with the head and shoulders raised, that is, in a semi-sitting position.	
(0:30) 0:05	ANAPHYLACTIC SHOCK 1. Definition a. Anaphylactic shock is an acute allergic reaction to drugs (like penicillin), insect bites, food, dust, or pollens. b. This is an acute emergency where immediate transportation to a medical facility is imperative. 2. Signs a. Skin. The skin may burn or break out. The face and tongue may swell. b. Respiration. Breathing is difficult.	

Time (Elapsed) Actual	Content	Training Aids
	c. Pulse. Pulse is weak or imperceptible. d. Consciousness. Patient may be unconscious. 3. Care. As with all shock, the only care that can be provided is care for the whole patient. The patient needs an injection of drugs to combat the allergic reaction.	
(0:35) 0:05	INTERNAL BLEEDING 1. Seriousness a. Internal bleeding can result in severe blood loss and the patient may die of shock. b. As an example, a fractured shaft of the femur can result in an internal loss of one quart of blood. c. Laceration of the liver can result in severe blood loss and be quickly fatal. d. Loss of one quart of blood in an adult and one pint in a child is serious. 2. Signs a. The signs of internal bleeding are similar to those of shock. b. In addition, the patient may cough up bright red blood or vomit dark blood (the color of coffee grounds) depending on the location of the injury. 3. Emergency care a. The patient suffering from severe internal bleeding is a serious case and the rescuer can do very little for him at the accident scene. b. If bleeding is suspected in an extremity, it may be controlled by a pressure dressing or by application of a splint. c. Fast transportation to a hospital is a must. *d. If available, oxygen should be administered.	

Time (Elapsed) Actual	Content	Training Aids
(0:40) 0:10	EXTERNAL BLEEDING 1. Types a. Artery. Bleeding from an artery spurts and is bright red in color because it is rich in oxygen. b. Vein. Bleeding from a vein is steady and is dark bluish-red in color. c. Capillary. Blood oozes from a capillary and is similar in color to venous blood. 2. Control--description and demonstration a. Direct pressure 1) Direct pressure with the hand over the wound using a universal dressing or gauze pad will stop most bleeding. 2) The dressing should be held in place with a bandage. 3) If the bleeding does not stop, additional pressure should be applied with the hand. 4) Elevation may help control bleeding of an extremity. b. Pressure points. If pressure dressings are not available, pressure points may be used to control severe bleeding in the arm or leg. 1) The brachial artery is pressed against the bone to stop bleeding below the pressure point--have each student demonstrate on another student. 2) The femoral artery is pressed against the pelvis to stop bleeding in the leg--have each student demonstrate on another student.	Chart/slide/drawing of brachial and femoral pressure points

Time (Elapsed) Actual	Content	Training Aids
	c. Tourniquet 1) Use. A tourniquet is used only in a severe emergency when other means will not stop bleeding in an extremity. 2) Dangers. Tourniquets can damage nerves and blood vessels and can result in the loss of an arm or leg. 3) Procedures. If a tourniquet must be used--demonstrate on student: a) Use a bandage 3 to 4 inches wide and 6 to 8 layers deep. b) Wrap it around the extremity twice and tie a knot. c) Place a stick in the knot, twist it until the bleeding stops, and tie it in position. d) Mark TK (with blood) on the patient's forehead and be sure to notify other emergency personnel who take charge of the patient that a tourniquet has been applied.	Triangular bandage Stick
(0:50) 0:10	TEN-MINUTE BREAK	
(1:00) 0:05	INJURIES TO TISSUES AND INTERNAL ORGANS 1. Coverage of section a. Coverage includes all parts of the body with the exception of the skull and chest where injuries typically include fractures--these areas are covered in other lessons.	

Time (Elapsed) Actual	Content	Training Aids
	b. The section starts with a discussion of general procedures to follow in the management of open and closed wounds. c. It is followed by a discussion of specific points associated with wounds to various body parts. d. The student must learn to put the information learned in this lesson together with that learned in previous and subsequent lessons so that, when caring for a person, he is caring for the whole patient.	
(1:05) 0:05	2. Types of injuries. Injuries may be open or closed as follows: a. Closed injuries 1) Closed injuries may range from damaged tissue beneath the skin to severe internal injuries. 2) For minor injuries, blood may collect in the damaged tissue and form a lump; a pressure dressing should be applied in such cases. 3) Care for major injuries is discussed below for the specific body part. b. Open injuries 1) General management procedures. The following procedures apply to all open wounds: a) Control bleeding. b) Prevent further contamination--all open wounds will already be contaminated but a dressing and bandage will prevent further contamination.	

Time (Elapsed) Actual	Content	Training Aids
	c) Immobilize the part and keep the patient quiet. 2) General rules--applicable to injuries in all body parts: a) Preserve avulsed parts--torn off parts should be saved and flaps of skin may be folded back to their normal position before bandaging. b) Do not remove impaled objects--they may be cut if necessary to move the patient but should remain in place until the patient receives hospital care. c) Do not try to replace protruding organs--that is, protruding eyeballs or protruding intestines should be covered as they are and no attempt should be made to replace them in their normal positions within a body cavity; the covering for intestines should be kept moist.	
(1:10) 0:05	3. Face and scalp wounds a. General comment. The face and scalp are richly supplied with arteries and veins and wounds of these areas bleed heavily. b. Emergency care. Control by direct pressure. For cheek wounds, it may be necessary to hold a gauze pad inside the cheek as well as outside. c. Special considerations 1) Suspect brain or neck injuries for any wounds of the head.	

Time (Elapsed) Actual	Content	Training Aids
	2) Check the mouth carefully for any loose objects such as broken teeth that might impair the airway. 3) Check carefully for bleeding into the mouth or throat that might impair the airway.	
(1:15) 0:05	4. Nosebleeds a. General comment. Nosebleeds in an emergency can result in serious blood loss and should not be overlooked. b. Skull fracture. If it is suspected that the patient has a skull fracture, don't attempt to stop the bleeding--this subject will be discussed in more detail in the lesson on skull injuries. c. Other causes. Nosebleeds from any other cause should be stopped by pinching the nostrils or by placing a bandage between the upper lip and the gum and pressing against it.	
(1:20) 0:05	5. Eye injuries a. Emergency care 1) Do not exert pressure directly on a lacerated eyeball. 2) Do not remove penetrating objects--the eye should be covered with a paper cup or cone before bandaging. 3) Do not replace extruded eyeball--as above, the eye should be covered with a paper cup or cone before bandaging. 4) If it is necessary to bandage one eye, cover both to minimize eye movement--explain to the patient what you are doing.	

Time (Elapsed) Actual	Content	Training Aids
	5) For an unconscious patient, close the eyes before bandaging to prevent drying of tissues. Drying of tissues can cause permanent blindness. Closing the eyes allows normal tears to keep eyes moist.	
(1:25) 0:05	6. Neck wounds a. Emergency care 1) Control arterial bleeding by direct pressure. 2) If a large vein is torn, apply pressure above and below the point of bleeding to prevent air from entering the circulatory system--the latter could be rapidly fatal. b. Special considerations. Suspect a neck fracture.	
(1:30) 0:05	7. Abdominal injuries a. General comments 1) Abdomen contains both hollow and solid organs. a) Rupture of hollow organs (organs of the digestive system) spills contents into the peritoneal cavity causing inflammatory reaction. b) Rupture of solid organ (that is, the liver) may result in severe bleeding. b. Emergency care 1) For all abdominal injuries, suspect shock and work to prevent it.	

Time (Elapsed) Actual	Content	Training Aids
	2) Be alert for vomitus. 3) Do not touch protruding organs. Cover them with a sterile dressing and keep the dressing moist. 8. Genitalia a. Emergency care rules for the genitalia are the same as those for all other bodily injuries, that is: 1) Control bleeding by direct pressure. 2) Do not remove penetrating objects.	
(1:40) 0:10	TEN-MINUTE BREAK	
(1:50) 1:00	DRESSING AND BANDAGING--STUDENT PRACTICE SESSION 1. General comments. There are no hard and fast rules for dressing and bandaging wounds as long as the following conditions are met: a. The dressing and bandage should be applied firmly and snugly but should not be so tight as to affect the blood supply to the restricted parts. b. The dressing should adequately cover the wound. c. The bandage should be securely tied or fastened in place so that it will not move. d. There should be no loose ends that could get caught on any other object while the patient is being moved.	

Time (Elapsed) Actual	Content	Training Aids
	2. Student practice. Working in groups of two, each student should practice dressing and bandaging as many of the following body areas as possible. The instructor should critique each student's performance and point out exceptionally good work and errors. a. Arm/leg b. Elbow/knee c. Forehead/scalp d. Neck e. Shoulder/hip f. Eye (with protruding eyeball) g. Ear 3. The instructor should use the practice period not only for perfection of technique but also for emphasis of all points covered in the lesson.	Triangular bandages Roller-type bandages Universal dressing/ gauze pad Paper cup/cone
(2:50)		

Time: 3 hrs.

LESSON 6

FRACTURES AND DISLOCATIONS OF THE EXTREMITIES

Objectives: Provide the student with sufficient information for him to:

- Describe the design of the extremities in layman's terms
- Define fractures and dislocations and their common signs
- Describe procedures for examining a patient for fractures of the extremities
- Describe in his own words the reason for splinting fractures
- Describe procedures for immobilizing all fractures and dislocations of the extremities

Provide the student with sufficient practice for him to:

- Demonstrate proficiency in immobilizing fractures and dislocations of the extremities

Training aids: Equipment/materials:

Upper extremity splints (one set for each 2 students)
Lower extremity splints (one set for each 2 students)
Triangular bandages (four for each student)
Roller-type bandages (one for each 2 students)
Blanket (one for each 2 students)

Illustrations: (chart/slide/drawing)

Design of skeletal system (or preferably actual skeleton)
Angulated fracture of the arm or leg
Dislocated finger
Anterior, posterior and inferior shoulder dislocations

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. <u>Lesson coverage</u> a. The design of the skeletal system, particularly the extremities. b. Meaning and signs of fractures and dislocations. c. Differentiating between fractures and dislocations. d. Examining the patient for fractures. e. Splinting fractures and dislocations of the upper and lower extremities including student practice. 2. <u>Need for lesson</u> a. Various types of fractures will be encountered in highway accidents. Proper care of the fracture patient will improve his recovery time and minimize additional damage to injured tissues. 3. <u>Lesson objectives</u>. At the end of the lesson, each student will be able to: a. Describe the design of the extremities in layman's terms. b. Define fractures and dislocations and their common signs. c. Describe procedures for examining a patient for fractures of the extremities. d. Describe in his own words the reason for splinting fractures. e. Describe procedures for immobilizing all fractures and dislocations of the extremities.	

Time (Elapsed) Actual	Content	Training Aids
	f. Demonstrate proficiency in immobilizing fractures and dislocations of the extremities.	
(0:05) 0:10	THE SKELETAL SYSTEM 1. <u>Functions.</u> The skeleton has the following functions: a. It gives form to the body. b. It supports the body and permits us to stand erect. c. Muscles attached to the skeleton by ligaments, permit motion at most places (joints) where bones join together. d. It protects body organs, that is: 1) The brain is in the skull. 2) The heart and lungs are protected by the rib cage. 3) Much of the liver and spleen are protected by the lower ribs. 4) The spinal cord lies deep within the spinal canal. 5) The bladder lies behind the pelvis. 2. <u>The upper extremity</u>. The upper extremities are designed as follows: a. <u>Shoulder girdle</u>. The upper extremities are attached to the shoulder girdle which is formed largely by the shoulder blade (scapula) and the collarbone (clavicle). b. <u>Arm</u>. The arm (shoulder to elbow) has one bone known as the humerus.	Chart/slide/drawing of design of skeletal system (or skeleton)

Time (Elapsed) Actual	Content	Training Aids
	c. Forearm. The forearm (elbow to wrist) has two bones: the radius on the thumb side and the ulna on the little finger side. d. Hand. The hand has many bones including those of the wrist and fingers. 3. The lower extremity. The lower extremities are designed as follows: a. Hip joint. The lower extremity is attached to the pelvis at the hip joint. b. Upper leg (thigh). The upper leg contains one bone known as the femur. It is the longest, heaviest and strongest bone of the body. Fractures of the femur are serious. c. Lower leg. The lower leg has two bones: the tibia in front and the fibula in back. d. Foot. As with the hand, the foot has many bones. e. Kneecap. The leg also has a bone at the kneecap known as the patella.	
(0:15) 0:15	GENERAL CONCEPTS OF FRACTURES AND DISLOCATIONS 1. Fractures a. Definition. A fracture means a break in a bone. b. Types. Basically, fractures are of two types: 1) Open (compound). The skin has been broken. 2) Closed (simple). The skin has not been broken. Note: Both open and closed fractures can result in serious blood loss. In addition, open fractures have the danger of infection.	

Time (Elapsed) Actual	Content	Training Aids
	c. Signs 1) Deformity. The arm or leg may be angled where there is no joint.	Chart/slide/drawing of angulated fracture
	2) Tenderness. The point of the break may be tender or sore.	
	3) Grating. If the patient moves, there may be a grating sound where the broken ends of the bone rub together. The rescuer should not attempt to confirm this sign since movement of the broken ends could damage nerves and blood vessels.	
	4) Swelling and discoloration. Swelling and discoloration due to fluid in the tissues may not be apparent for several hours.	
	5) Loss of use. The patient will not be able to move the limb or will do so with great pain.	
	6) Exposed fragments. In open fractures, fragments of the bone may protrude through the skin.	
	2. Dislocations a. Definition. A dislocation is the displacement of the bone ends that form a joint.	Chart/slide/drawing of dislocated finger
	b. Location. Any movable joint may be dislocated; those frequently dislocated are the shoulder, elbow, fingers, hip and ankle. c. Signs. Signs are similar to those for fractures, the most important being: 1) Deformity of the joint 2) Pain 3) Loss of movement	

Time (Elapsed) Actual	Content	Training Aids
	3. Sprains a. Definition. A sprain is a partial tear of a ligament. b. Signs. Signs are similar to those for fractures and dislocations except there are never protruding bone fragments and there is no deformity at a joint. 4. Differentiating between fractures, dislocations and sprains a. Differentiating signs. The following signs can be used to diagnose a fracture or dislocation: 1) Fracture--an angle in an arm or leg where there is no joint. 2) Fracture--an open wound with a bone or bone fragments protruding. 3) Dislocation--a deformity at a joint. b. General diagnosis. If the above signs are not present but there is pain or tenderness or loss of movement of an extremity, it should be assumed that there is a fracture and the limb should be treated accordingly. 5. Examining the patient. Procedures are as follows: a. Observe for a deformity or open wound. b. Have the patient try to move each extremity. c. Question and check the patient regarding tenderness or pain.	

Time (Elapsed) Actual	Content	Training Aids
	d. For unconscious patients, feel carefully for deformities. Note: Due to pinching of nerves and blood vessels, there may be numbness, paralysis or loss of pulse below the fracture site. Such patients need speedy definitive care.	
(0:30) 0:15	GENERAL PRINCIPLES OF SPLINTING 1. Reason for splinting a. The primary objective for splinting is to prevent motion of bone fragments or dislocated joints. b. Good emergency care can decrease hospital time and speed the patient's recovery by preventing or minimizing the following complications: 1) Damage to muscles, nerves or blood vessels caused by broken ends of bone. 2) Laceration of the skin, that is, a closed fracture becomes an open fracture. 3) Restriction of blood flow as a result of bone ends pressing against blood vessels. 4) Excessive bleeding due to bone ends. 5) Increased pain associated with movement of bone ends. 6) Paralysis of extremities due to fractured spine--discussed in a subsequent unit.	

Time (Elapsed) Actual	Content	Training Aids
	2. General rules a. Splint the patient before moving him--the patient should be moved only if there is great danger to him in not being moved (that is, danger of a fire, danger of being hit by another vehicle). b. Straighten an angulated fracture before splinting. Exceptions: Never straighten an angulated fracture of the spine, shoulder, elbow, wrist or knee, that is, do not straighten the spine or any angulation at a joint. For the extremities, therefore, angulation should be straightened only in the long bones of the arm or leg. c. Splint the joints above and below the fractured bone. d. For dislocated joints, immobilize the bone above and below the joint--do not attempt to straighten dislocations. e. Control bleeding and cover all wounds prior to splinting; do not replace protruding bones. f. Pad each splint carefully to prevent pressure and discomfort to the patient. g. Apply gentle traction to a lowered extremity while the splint is being applied. h. Wrap the limb and splint with bandaging material making sure that the splint and bandaging do not interfere with circulation in the extremity. 3. Straightening an angulated fracture. The following procedures should be used in straightening an angulated fracture--demonstration on student of application of traction.	

Time (Elapsed) Actual	Content	Training Aids
	a. Cut or tear away clothing so that you have a good view of the fracture site. b. Grasp the extremity gently but firmly with one hand just below the fracture site and one farther down the extremity. c. If possible, have another person provide countertraction by holding the patient in place. d. In applying traction, do not attempt to change the angle forcibly. e. Maintain traction until the extremity is splinted.	
(0:45)	TEN-MINUTE BREAK	
0:10		
(0:55)	SPLINTING THE UPPER EXTREMITY	
0:25	1. Equipment a. Splints. Display and description of upper extremity splints used in the area. Note: The discussion below will not include detailed procedures for applying actual splints because it is assumed that the available splints will vary jurisdictionally. The instructor should demonstrate application of the splint available locally. b. Sling and swathe 1) Use. Most fractures and dislocations of the upper extremity require application of a sling and swathe regardless of whether or not they require other splinting. In some instances, a sling and swathe is a sufficient means of immobilizing the limb.	Upper extremity splints Triangular bandages Roller-type bandages

Time (Elapsed) Actual	Content	Training Aids
	2) Demonstration (on student) a) Apply a sling (triangular bandage) to the extremity in the traditional manner. b) Wrap the swathe (triangular or roller-type bandage) around the extremity and body to immobilize the extremity and hold it close to the body. 2. Fractures of clavicle or upper humerus a. Apply a sling and swathe. 3. Dislocations of shoulder. Care depends on the type of dislocation. a. Anterior (foreward) dislocation 1) Arm is held away from the body. Pain is severe. There is a sharp prominence in front of the shoulder. 2) Splint in the position found. b. Posterior (backward) dislocation 1) Arm, forearm and hand will be across the front of the chest. Pain is severe. 2) Apply loose dressing (padding) around limb. Apply sling and swathe. c. Inferior (downward) dislocation--a rare event 1) Entire arm may be held over head. 2) Tie the arm to the head and neck.	Chart/slide/drawing of anterior, posterior and inferior shoulder dislocations

Time (Elapsed) Actual	Content	Training Aids
	4. Fractures of shaft of humerus a. Straighten any angulation. Apply splint as appropriate--demonstrate on student. Apply sling and swathe. 5. Fractures or dislocations of elbow a. Typically there is severe pain. Deformity is common. Dislocations may be anterior or posterior. b. Splint in exact position in which elbow is found--demonstrate positioning of splint on student. Be extremely careful in order to minimize further damage. Apply sling and swathe. 6. Fractures of forearm a. Usually there is not as much pain as there is for fractures of the elbow and shoulder. b. Straighten angulated fractures. Apply splint as appropriate. Apply sling and swathe. 7. Fractures and dislocations of wrist a. Deformity is common. b. Splint in exact position in which wrist is found. Apply sling and swathe. 8. Fractures and dislocations of hand or fingers a. Apply sling and swathe.	

Time (Elapsed) Actual	Content	Training Aids
(1:20) 0:25	SPLINTING THE LOWER EXTREMITY 1. Equipment. Display and description of lower extremity splints used in the area. Note: As with splints for the upper extremity, it is assumed that available splints will vary jurisdictionally. The instructor should demonstrate application of the splint available locally. 2. Fractures and dislocation of hip a. It is difficult to differentiate a fracture from a dislocation. For a fracture, one leg appears shorter and the foot will be turned outward. For a dislocation, the thigh may be flexed and turned inward. b. Apply a splint--demonstrate on student. 3. Fractures of the shaft of the femur a. These fractures are very painful; the pain is increased by motion. b. The thigh may swell from internal bleeding. c. The patient can go into shock from painful movement or excessive blood loss. d. Straighten any angulation. Apply a splint--demonstrate on student. 4. Fractures and dislocations of knee a. Fractures of the knee are common in car accidents as a result of impact with the dashboard. There is usually swelling at the knee. For dislocations, the knee will be deformed.	Lower extremity splints Triangular bandages Roller-type bandages

Time (Elapsed) Actual	Content	Training Aids
	b. Splint a fracture or dislocation in the position found--demonstrate positioning of splint on student and how splint should be padded. 5. Fractures of lower leg a. Angulation is common. b. Straighten any angulation. Apply a splint--demonstrate positioning of splint on student. 6. Fractures and dislocations of ankle a. Fractures, sprains and dislocations are difficult to differentiate. b. Leave shoe on and apply splint--demonstrate positioning of splint on student.	
(1:45) 0:10	TEN-MINUTE BREAK	
(1:55) 0:55	STUDENT PRACTICE SESSION 1. Working in groups of two or three as appropriate, each student should practice immobilizing the following: a. Fracture of the humerus b. Fracture of the forearm c. Fracture of the shaft of the femur d. Fracture of the lower leg 2. The instructor should use the practice period not only for perfection of technique but also for emphasis of all points covered in the lesson.	
(2:50)		

Time: 2 hrs.

LESSON 7

INJURIES TO THE SKULL, SPINE, CHEST AND PELVIS

Objectives:

Provide the student with sufficient information for him to:

- Describe the design of the skull, spine, chest cavity and pelvis in layman's terms.
- Describe what cerebrospinal fluid is and why no attempt should be made to stop bleeding from the nose or ears when a skull fracture is suspected.
- Describe the signs of a skull fracture and of brain injuries.
- Describe management of patients with skull fractures and with brain injuries.
- Describe the main danger associated with fractures of the facial bones.
- Describe the main danger associated with fractures of the spine and complications that can result from spine injuries.
- Describe how to examine a patient for spine injuries.
- Describe the main dangers and complications associated with chest injuries.
- Describe the signs and management of patients with pelvic fractures.

Provide the student with sufficient practice for him to:

- Demonstrate proficiency in bandaging an open skull wound.
- Demonstrate proficiency in immobilizing a rib fracture.
- Demonstrate proficiency in immobilizing the head and spine of seated patients.

Training aids:

Equipment/materials:

Short spine board or spine splint with associated neck and back supports and straps (one for each five students)

Universal dressing/gauze pad (one for each 2 students)

Triangular bandages (3 for each student)

Blanket (one for each five students)

(continued)

Training aids: (continued)

Illustrations (chart/slide/drawing):

Design of skeletal system (or preferably actual skeleton)

Linear, depressed, open and penetrated skull fractures

Bandaged skull

Bandaged rib fracture

Flail chest

Collapsed lung as result of pneumothorax

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. <u>Lesson coverage</u> a. Design of the skull, spine, rib cage and pelvis. b. Signs, seriousness and techniques of care for patients with injuries to head, spine, chest and pelvis. c. Student practice in bandaging open skull wounds, splinting spine fractures, and immobilizing rib fractures. 2. <u>Need for lesson</u> a. Head, chest, spine and pelvic injuries are common in automobile accidents. b. Head injuries can result in brain injuries, chest injuries can create breathing or circulatory problems, spine injuries can result in paralysis and pelvic injuries can result in rupture of the bladder, among other problems. c. It is important that the rescuer be knowledgeable about the signs, seriousness and management of these patients. 3. <u>Lesson objectives</u>. At the end of the lesson, each student will be able to: a. Describe the design of the skull, spine, chest cavity and pelvis in layman's terms. b. Describe what cerebrospinal fluid is and why no attempt should be made to stop bleeding from the nose or ears when a skull fracture is suspected. c. Describe the signs of a skull fracture and of brain injuries. d. Describe management of patients with skull fractures and with brain injuries. e. Describe the main danger associated with fractures of the facial bones.	

Time (Elapsed) Actual	Content	Training Aids
	f. Describe the main danger associated with fractures of the spine and complications that can result from spine injuries. g. Describe how to examine a patient for spine injuries. h. Describe the major dangers and complications associated with chest injuries. i. Describe ths signs and management of patients with pelvic fractures. j. Demonstrate proficiency in bandaging an open skull wound. k. Demonstrate proficiency in immobilizing a rib fracture. l. Demonstrate proficiency in immobilizing the head and spine of seated patients.	
(0:05) 0:10	ANATOMY AND PHYSIOLOGY 1. Skull. The skull has two main parts: a. Cranium 1) The cranium has a number of broad, flat bones that are fused together in an adult to form a hollow shell. 2) It protects the brain, which is the control center for the body--the brain controls all body functions, voluntary and involuntary. 3) Although the cranium is very strong in an adult, a blow can still cause a break or, even if there is no break, can result in damage to the brain tissue.	Chart/slide/drawing of design of skeletal system (or actual skeleton)

Time (Elapsed) Actual	Content	Training Aids
	b. Face bones 1) The face bones include the cheek, nasal and jaw bones. 2) They give shape to the face and permit the jaw to move. 2. Spine a. The spinal column is composed of many bones known as vertebrae. b. It encloses the spinal cord which consists of long tracts of nerves that join the brain with all body organs and parts. c. Since it protects the spinal nerves, it is especially important that fractures of the spinal column be competently cared for. If a broken spinal column pinches spinal nerves, paralysis can result. 3. Rib cage a. The rib cage includes the ribs, the thoracic vertebrae, and the sternum. b. The ribs are connected to the vertebrae in back and all but two are connected to the sternum in front by cartilage. c. There is some movement of the rib cage associated with breathing. d. The rib cage encloses the lungs and heart and damage to the ribs can result in damage to these organs. 4. Pelvis a. The pelvic girdle is formed by the lower five vertebrae (which are fused together and known as the sacrum) and the hip bones.	

Time (Elapsed) Actual	Content	Training Aids
	b. It contains the sockets of the hip joints that join with the femur. c. It protects the lower portion of the abdominal cavity including the bladder, rectum and internal female sexual organs.	
(0:15) 0:10	INJURIES TO THE HEAD 1. Skull fractures. Fractures of the skull are common in accident victims. Their seriousness depends on the amount of injury to the brain. a. Types. Skull fractures may be of the following types: 1) Linear--line fracture or crack in the skull. Most skull fractures are of this type. 2) Depressed--pieces of the bone are pushed inward pressing on and sometimes causing tearing of brain tissue. 3) Open--the brain may be exposed or parts of it may extrude through bone fragments. 4) Penetrated skull--objects such as a radio knob may penetrate the skull and lodge in the brain--remember, do not remove foreign objects. b. Cerebrospinal fluid 1) The brain and spinal cord are protected by layers of tissue filled with a liquid called cerebrospinal fluid. 2) This fluid provides nutrition to some of the brain cells and serves as a shock absorber. 3) Cerebrospinal fluid and blood may drain from the nose or ears when a person has a skull fracture.	Chart/slide/drawing of linear, depressed, open and penetrated skull fractures.

Time (Elapsed) Actual	Content	Training Aids
	4) Rule of care--do not attempt to stop bleeding from the nose or ears when a skull fracture is suspected. Doing so may cause increased pressure on the brain or an infection around the brain. c. Signs. Signs of a skull fracture include: 1) Deformity of the skull. 2) Blood or clear fluid (cerebrospinal fluid) draining from ears or nose. 3) Black eyes. d. Causes of brain injuries 1) Severe blows to the head can cause bleeding within the skull; resulting blood clots cause pressure on brain tissue. 2) Pressure damages the brain cells and loss of consciousness results. e. Signs of brain damage 1) Victim becoming more confused. 2) Loss of consciousness. 3) Pupils of unequal size that do not react to light. 4) Eyeballs that do not function together. f. Management. Care for persons with suspected skull fractures or brain injury includes: 1) Control bleeding (not drainage). 2) Dress and bandage open wounds--minimize pressure. 3) Position as follows:	Chart/slide/drawing of bandaged skull

Time (Elapsed) Actual	Content	Training Aids
	a) Elevate head and shoulders slightly if possible. b) Place patient on his side with head down to facilitate drainage if there is bleeding in the mouth or throat. 4) Suspect neck injury and treat accordingly--to be discussed below. 2. Facial fractures a. Danger. The main danger of facial fractures lies in airway problems. Bone fragments and blood may obstruct the airway--check the airway carefully. b. Emergency care. Emergency care is the same as for soft tissue injuries, that is, maintain the airway, control bleeding, and dress and bandage open wounds.	
(0:25) 0:15	INJURIES TO THE SPINE 1. Dangers a. It is especially important to provide proper care for patients with suspected spinal injuries since damage to the spinal cord can result in paralysis. b. Therefore, all unconscious accident patients should be treated as if they had spinal injuries and all conscious patients should be carefully checked for spine injuries prior to movement. 2. Signs. The following signs may be indicative of spinal cord injury: a. Pain. The patient will usually be aware of pain in the area of injury. b. Tenderness. Feeling gently over the suspected area may result in increased pain.	

CONTINUED

1 OF 2

Time (Elapsed) Actual	Content	Training Aids
	c. Painful movement. If the patient tries to move, the pain may increase--never try to move the injured area for the patient. d. Deformity. Deformity is rare although there may be an abnormal bend or bony prominence. e. Cuts and bruises. Patients with neck fractures will have cuts and bruises on the head or face. Patients with injuries in other spine areas will have bruises on the shoulders, back or abdomen. f. Paralysis. If the patient is unable to move or feels no sensation in some part of his body, he may have a spinal fracture. 3. Steps for checking signs and symptoms a. Conscious patients 1) Ask--what happened, where does it hurt, can you move your hands and feet, can you feel me touching your hands (feet)? 2) Look--for bruises, cuts, deformities. 3) Feel--for areas of tenderness, deformities. 4) Have patient move--if he can do so comfortably. b. Unconscious patients 1) Look--for cuts, bruises, deformities. 2) Feel--for deformities. 3) Ask others--what happened? 4. Complications a. Persons with neck injuries may have paralyzed chest muscles. Breathing can then be accomplished only by the diaphragm. Inadequate breathing may result.	

Time (Elapsed) Actual	Content	Training Aids
	b. Paralysis of the nerves affecting the size of blood vessels may occur and shock may result. Place the patient in the shock position.	
	5. Emergency care. In addition to caring for life-threatening problems, the most important consideration for a victim with a suspected spine injury is to immobilize him before moving.	
(0:40) 0:10	INJURIES TO THE CHEST	
	1. Types of injuries. Injuries to the chest include rib fractures, penetrating injuries, and injuries to the internal chest organs (heart and lungs). All, of course, may occur together.	
	a. Rib fractures	
	1) A single rib fracture (with no complications) can be very painful.	
	2) Strapping an arm to the chest on the injured side can result in minimizing chest movement and pain. The bandage should be tightened while the patient is exhaling.	Chart/slide/drawing of bandaged rib fracture
	Caution: Do not make bandage too tight as it might result in the fractured rib puncturing the lung.	
	b. Flail chest	
	1) When each of three or more ribs is broken in two places, the resultant portion will not move with the rest of the rib cage when the patient attempts to breathe.	Chart/slide/drawing of flail chest
	2) Immobilizing the ribs should improve respirations. If not, be prepared to use resuscitative measures.	
	c. Penetrating wounds	
	1) These consist of open chest wounds in which the chest wall is torn--typically by a foreign object.	

Time (Elapsed) Actual	Content	Training Aids
	2) The wound must be closed quickly since it can result in air outside the lung in the chest cavity. If available, plastic wrap makes an excellent seal.	
	3) These wounds are typically called "sucking" chest wounds because of the sucking sound heard each time the patient breathes.	
	d. Injuries to heart and lungs	
	1) Air leaking out of a lacerated lung can result in a collapsed lung.	Chart/slide/drawing of collapsed lung as result of pneumothorax
	2) Blood in the chest cavity can result in a collapsed lung.	
	3) Blood in the pericardial cavity surrounding the heart can result in compression of the heart.	
	4) All of the preceding are serious emergencies requiring prompt medical care.	
(0:50) 0:05	INJURIES TO THE PELVIS	
	1. Area of fracture. The most common fracture of the pelvis occurs in the pubic area.	
	2. Dangers. The major danger of a fractured pelvis is damage to the urinary bladder or other abdominal organs.	
	3. Signs. Most patients have pain in the groin which is increased when they try to move their legs or when pressure is applied to the pelvis.	
	4. Care. The patient should be moved carefully. He will usually be more comfortable if his knees are flexed.	
(0:55) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Content	Training Aids
(1:05) 0:45	DEMONSTRATION AND STUDENT PRACTICE 1. The instructor should demonstrate each of the following: a. Bandaging an open skull wound--using a dressing and triangular bandage. b. Immobilizing fractured ribs--strapping one or both arms to the chest with triangular bandages. c. Immobilizing the head and spine of a seated patient--the instructor should describe procedures for supine and prone patients. Note: No specific procedures are described since it is assumed that equipment will vary jurisdictionally. However, instructor should assure the following are demonstrated: . Maintaining head traction . Immobilizing head and neck . Providing appropriate neck and back support . Immobilizing spine 2. Working in groups of 2 to 3 as appropriate, each student should practice the following: a. Bandaging an open skull wound. b. Immobilizing fractured ribs. c. Immobilizing the head and spine of a seated patient. 3. The instructor should use the practice period not only for perfection of technique but also for emphasis of all points covered in the lesson.	Spine boards/splints and accessories Triangular bandages Universal dressings/ gauze pads Blankets
(1:50)		

Time: 1 hr.

LESSON 8

HEART ATTACK, STROKE, DIABETES AND EPILEPSY

Objectives: Provide the student with sufficient information for him to describe the causes, signs and emergency care for the following medical emergencies:

- Heart attack
- Angina
- Heart failure
- Stroke
- Diabetic coma
- Insulin shock
- Epilepsy

Training aids: Illustrations (chart/slide/drawing):

Heart showing blocked artery resulting in heart attack

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Lesson coverage. This lesson describes the causes, signs and emergency care for the following medical conditions: a. Heart attack b. Angina c. Heart failure d. Stroke e. Diabetic coma f. Insulin shock g. Epilepsy 2. Need for lesson a. Heart conditions, strokes, diabetes and epilepsy are common medical conditions; severe cases can be life threatening when not properly cared for. b. The rescuer should be able to recognize these conditions and render appropriate patient care. 3. Lesson objectives. At the end of the lesson, each student will be able to describe the causes, signs and emergency care for each of the medical conditions discussed.	
(0:05) 0:15	HEART CONDITIONS 1. Heart attack a. Definition 1) The heart is a muscle and, like all muscles in the body, is supplied with arteries. 2) When an artery becomes blocked, that part of the muscle which it serves dies and the patient has what is known as a heart attack. 3) A heart attack is also called a "coronary thrombosis," "coronary occlusion," "myocardial infarction" or simply "coronary." All words essentially mean the same thing.	Chart/slide/drawing of blocked heart artery

Time (Elapsed) Actual	Content	Training Aids
	4) The heart will still continue to pump even though part of the muscle dies. 5) If too much muscle is lost, the heart will be unable to pump enough blood; shock and death will result. b. Signs. Typical signs of a heart attack are: 1) Severe pain--usually described as a crushing pressure beneath the sternum, although it may move from the left arm to the neck to the left side of the chest, or may remain in the upper abdomen or back of the chest. 2) Apprehension and sweating. 3) Shortness of breath. 4) Nausea and vomiting. c. Emergency care 1) Place the patient in a sitting position--he will be able to breathe more easily in this position. *2) Administer oxygen if available--oxygen may help some of the damaged muscle to survive. 3) Do not allow the patient to assist in moving himself--he needs absolute rest. 4) Comfort and reassure him. 5) Loosen his clothing and make him comfortable. 2. Angina a. Definition. Angina is a narrowing of an artery in the heart and blood supply to part of the heart is diminished. It is usually brought on by stress or unusual effort.	

Time (Elapsed) Actual	Content	Training Aids
	b. Signs. The patient suffers pain in the chest or arms. It is usually not as severe as the pain of a heart attack. c. Emergency care 1) Patients are usually aware of their condition and have been given medication (nitroglycerine) by their physician to relieve the pain --assist them in taking any prescribed medication. 2) It is usually relieved by rest and lasts less than 5 minutes. 3. Heart failure a. Definition. When the heart does not pump blood efficiently to the body, fresh blood cannot enter the heart from the lungs. Blood and other fluids accumulate in the lungs. b. Signs. Signs include the following: 1) Shortness of breath 2) Anxiety 3) Cyanosis 4) Chest pain 5) Swelling of hands and feet Note: It is possible to have heart failure with no chest pain. c. Emergency care. Emergency care for this patient is the same as that for heart attack patients.	
(0:20) 0:05	STROKE 1. Definition. In a stroke, part of the brain has been damaged due to a blood clot or rupture of an artery. If the damage is extensive, the patient will die. 2. Signs. Signs and symptoms vary depending on the location and extent of the damage. They include:	

Time (Elapsed) Actual	Content	Training Aids
	a. Numbness or paralysis of the extremities. b. Confusion or dizziness. c. Paralysis of the facial muscles, tongue and throat leading to difficulty in speaking and swallowing. d. Diminished consciousness; coma. e. Convulsions. f. Loss of bladder and bowel control. 3. Emergency care. Care will depend on the signs exhibited by the particular patient. Major consideration is calm treatment and careful handling, particularly of paralyzed parts. Note: Even though the patient may not be able to speak and appears unconscious, he may be able to hear what is being said--be careful what you say in front of such patients.	
(0:25) 0:10	DIABETES 1. The condition a. Diabetes is a condition in which the body is unable to use sugar normally. b. Body cells need sugar to survive. c. Insulin in the body permits sugar to pass from the blood stream to body cells. d. If there is not enough insulin, sugar will be unable to get to body cells and they will starve. e. If there is too much insulin, there will be insufficient sugar in the blood stream and brain cells will be damaged since they need a constant supply of sugar.	

Time (Elapsed) Actual	Content	Training Aids
	2. Diabetic coma a. Problem. There is insufficient insulin and therefore too much sugar in the blood and not enough in the body cells. The diabetic: 1) Has eaten too much food that contains or produces sugar, or 2) Has not taken his insulin. b. Signs. The diabetic may have some or all of the following signs: 1) A sweet or fruity (acetone) odor. 2) Dehydrated (dry) warm skin. 3) Rapid, weak pulse. 4) Air hunger--rapid, deep breathing. 5) Varying degrees of unresponsiveness, up to coma. Note: The onset of diabetic coma is gradual over a period of days. c. Emergency care. This patient needs immediate transportation to a medical facility. 3. Insulin shock a. Problem. There is too much insulin in the body; therefore, the sugar leaves the blood rapidly and there is insufficient sugar for the brain cells. The diabetic: 1) Has taken too much insulin, or 2) Has not eaten enough food, or 3) Has exercised excessively.	

Time (Elapsed) Actual	Content	Training Aids
	b. Signs. Signs include the following: 1) Pale, moist skin. 2) Full, rapid pulse. 3) Normal breathing. 4) Dizziness; headache. 5) Fainting; seizures; disorientation; coma. Note: The onset of insulin shock is sudden; it may occur within minutes. c. Emergency care. The patient desperately needs sugar before brain damage and death occur. A sugar cube placed under the tongue of an unconscious patient should arouse him; sugar in any form can be given to a conscious patient. He needs immediate transportation to a medical facility. Note: If the rescuer can't distinguish between diabetic coma and insulin shock and sugar is available, have the patient take it. It can't appreciably hurt the patient in diabetic coma and may save the life of a patient in insulin shock.	
(0:35) 0:05	EPILEPSY 1. Condition a. In epilepsy, the patient convulses due to a sudden abnormal stimulation of a large number of brain cells. b. Most patients are unconscious during the convulsions and remain so for 5 to 10 minutes after the seizure stops. c. They are typically tired and will sleep when the attack is over.	

Time (Elapsed) Actual	Content	Training Aids
	2. Emergency care a. The major requirement of the rescuer is to protect the patient from hurting himself during a seizure. b. The epileptic should not be physically restrained in any way unless he is very wild. c. After an attack, the epileptic should be encouraged to rest since any activity could precipitate another attack.	
(0:40) 0:10	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	
(0:50)	2. Demonstration by members of the class of achievement of lesson objectives.	

Time: 1 hr.

LESSON 9

POISONS AND DRUGS

Objectives: Provide the student with sufficient information for him to:

- Describe the signs, emergency care and cautions associated with ingested poisons.
- Describe the seriousness, care and cautions associated with bites and stings.
- Describe the effects of alcohol and drugs, emergency care and cautions in dealing with alcohol and drug patients.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. <u>Lesson coverage.</u> The lesson covers signs, symptoms, emergency care and cautions in treating patients suffering from: a. Ingested and inhaled poisons b. Bites and stings c. Alcohol and drug abuse 2. <u>Need for lesson.</u> a. Poisons can result in exceptionally serious patient conditions. b. Recognition of a condition and prompt care can save the patient's life. 3. <u>Lesson objectives.</u> At the end of the lesson, each student will be able to: a. Describe the signs, emergency care and cautions associated with ingested poisons. b. Describe the emergency care for inhaled poisons. c. Describe the seriousness, care and cautions associated with bites and stings. d. Describe the effects of alcohol and drugs, emergency care and cautions in dealing with alcohol and drug patients.	
(0:05) 0:10	INGESTED POISONS 1. <u>Signs.</u> Signs are variable depending on the substances. There may be burns, odors or stains about the mouth. Other common signs include:	

Time (Elapsed) Actual	Content	Training Aids
	a. Drowsiness/sleep/unconsciousness b. Convulsions c. Delirium d. Slowed respirations/pulse e. Vomiting/nausea f. Abdominal pain/cramps 2. <u>Emergency care</u> a. The Poison Control Center in the area (give name, address and telephone number) will recommend an antidote or emergency care procedures to follow. b. The Poison Control Center may recommend inducing vomiting (by syrup of ipecac, if available, or warm water and salt) to aid in removing poisons from the stomach. Vomiting should <u>not</u> be induced when: 1) Strong acids or alkalis are swallowed--these injure the esophagus when swallowed and will reinjure it if regurgitated. 2) Petroleum products are swallowed-- a serious pneumonia could result if aspirated into the lungs. 3) Patient is not fully conscious--he might aspirate vomitus into the lungs. 4) Patient has convulsed--vomitus might bring on more convulsions. 5) Patient has heart disease and can be delivered to an emergency room quickly. 6) Patient is pregnant--labor may be precipitated. INHALED POISONS 1. For inhaled poisons, such as carbon monoxide, the major concern is getting the patient fresh air.	

Time (Elapsed) Actual	Content	Training Aids
	2. Pulmonary and cardiopulmonary resuscitation should be administered as required.	
(0:15) 0:05	BITES AND STINGS 1. <u>Seriousness of bite</u> a. Rarely are spider or insect bites and stings deadly; snake bites can be poisonous. b. The patient may suffer great pain, may vomit and may become unconscious. c. Any victim of a bite or sting should be immediately transported to medical attention. 2. <u>Allergic reactions</u> a. The major danger of bites and stings arises when the person has a hypersensitive reaction. b. These reactions were discussed previously under the heading "anaphylactic shock." c. Bee and wasp stings can result in rapid fatal collapse characterized by: 1) Rapid swelling around the eyes and mouth. 2) Hives 3) Difficult breathing progressing to frothing at the mouth and inability to breathe. d. Anaphylactic shock is a true emergency requiring prompt medical attention.	
(0:20) 0:10	ALCOHOL 1. <u>Cause of traffic accidents</u>. Alcohol is a leading cause of traffic fatalities in the United States.	

Time (Elapsed) Actual	Content	Training Aids
	2. <u>Depressant</u>. It is a depressant, not a stimulant. Many people think it is a stimulant since its first effect is to reduce tension and give a mild feeling of euphoria or exhilaration. 3. <u>Effects.</u> Alcohol affects a person's judgment, vision, reaction time and coordination. In very large quantities, it can cause death by paralyzing the respiratory center in the brain. 4. <u>Signs.</u> The signs of alcohol intoxication are familiar to all. Some of them are: a. Odor of alcohol on breath b. Swaying/unsteadiness c. Slurred speech d. Nausea/vomiting e. Flushed face 5. <u>Caution</u> a. An important point to remember is that these signs can mean illnesses or injuries other than alcohol (e.g., epilepsy, diabetes, head injury). b. It is therefore especially important that the person with alcohol on his breath (which can smell like the acetone breath of a diabetic) not be immediately dismissed as a drunk. c. He should be carefully checked for other illnesses/injuries. 6. <u>Alcohol combined with other depressants.</u> When alcohol is taken in combination with analgesics, tranquilizers, antihistamines, barbiturates, etc., the depressant effects will be added together and, in some instances, the resultant effect will be greater than the expected combined effects of the two drugs.	

Time (Elapsed) Actual	Content	Training Aids
	7. Management a. The intoxicated patient should be given the same attention given to patients with other illnesses/injuries. b. The intoxicated patient needs constant watching to be sure that he doesn't aspirate vomitus and that he maintains respirations. 8. Withdrawal problems a. An alcoholic who suddenly stops drinking can suffer from severe withdrawal problems. b. Sudden withdrawal will often result in DT's (delerium tremens). c. Signs include: 1) Shaking hands 2) Restlessness 3) Confusion 4) Hallucinations 5) Sometimes maniacal behavior d. The patient must be protected from hurting himself.	
(0:30) 0:15	DRUGS 1. Types. Drugs are usually classified by their users into two types: a. Uppers--stimulants of the central nervous system. They include amphetamines, cocaine and possibly LSD. b. Downers--depressants of the central nervous system. They include barbiturates, tranquilizers, marijuana, inhaled solvents and opiates.	

Time (Elapsed) Actual	Content	Training Aids
	2. Amphetamines and cocaine a. Amphetamines include benzedrine, dexedrine and methadrine. b. Amphetamines and cocaine provide relief from fatigue and a feeling of well-being. c. Blood pressure, breathing and general body activity are increased. d. Some users take a "speed run" of repeated high doses. Results are hyperactivity, restlessness and belligerance. Such persons need to be protected from hurting themselves and others. Acute cases need medical attention. e. At the end of a "speed run," the user is left exhausted and sleeps. On awakening, he is depressed. 3. Hallucinogens a. These drugs include LSD, mescaline, morning glory seeds, etc. b. They produce changes in mood and sensory awareness; a person may "hear" colors and "see" sounds. c. They can cause hallucinations and bizarre behavior that can make the user dangerous to himself and others. d. Acute cases need medical attention. Patients should be protected from hurting themselves. 4. Marijuana a. Marijuana provides a feeling of relaxation and euphoria. b. Users report distortions of time and space.	

Time (Elapsed) Actual	Content	Training Aids
	c. In some persons, excessive use can result in a reaction similar to a bad LSD trip. 5. Barbiturates a. Barbiturates include Nembutal, Amobarbital, Seconal and Phenobarbital. b. These drugs result in relaxation, drowsiness and sleep. c. Overdoses can produce respiratory depression, coma and death. d. Withdrawal can cause the addict to convulse and exhibit bizarre behavior. 6. Tranquilizers a. Tranquilizers include Miltown, Equanil and Valium. b. They are used to calm anxiety. c. High doses produce the same effects as barbiturates. d. Withdrawal can cause the addict the same problems as withdrawal from barbiturates. 7. Inhaled solvents a. A person who inhales glue or other solvents (gasoline, lighter fluid, nail polish, etc.) experiences effects similar to those of alcohol. b. He can die through suffocation. c. In addition, some inhalants can cause death by changing the rhythm of the heartbeat.	

Time (Elapsed) Actual	Content	Training Aids
	8. Opiates (narcotics) a. Opiates include opium, morphine, heroin, codeine, paregoric and demerol. b. They are used medicinally to relieve pain and anxiety. c. Overdoses can result in deep sleep (coma), respiratory depression, and death. d. The pupils of opiate users are described as "pin-point" in size. e. Withdrawal symptoms include, among others, intense agitation, dilated pupils, increased breathing and body temperature and a strong craving for a "fix." 9. Summary comments regarding care a. Acute cases of drug abuse need medical attention. b. Respirations should be carefully monitored since overdoses of depressants can cause respiratory depression and death. c. Hyperactive patients should be protected from hurting themselves and others. They should be reassured and treated calmly.	
(0:45) 0:05	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	
(0:50)	2. Demonstration by different members of the class of achievement of lesson objectives.	

Time: 1 hr.

LESSON 10

BURNS AND EXPOSURE TO HEAT AND COLD

Objectives:

Provide the student with sufficient information for him to:

- Recognize the difference between first, second and third degree burns.
- Use the rule of nines in estimating the criticality of a burn.
- Describe emergency care for heat and chemical burns.
- Describe the cause, signs and care for:
  - Heat cramps
  - Heat exhaustion
  - Heat stroke
  - General cooling of the body
  - Frostnip
  - Superficial frostbite
  - Deep frostbite (freezing)

Training aids:

Illustrations (chart/slide/drawing):

First, second and third degree burns
The rule of nines for adults and infants

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Lesson coverage. The lesson covers signs, symptoms, emergency care and cautions in treating patients suffering from: a. Burns b. Exposure to heat c. Exposure to cold 2. Need for lesson a. Burns and environmental emergencies can result in exceptionally serious patient conditions. b. Recognition of a given condition and prompt care can minimize the possibility of serious illness injury or death. 3. Lesson objectives. At the end of the lesson, each student will be able to: a. Recognize the difference between first, second and third degree burns. b. Use the rule of nines in estimating the criticality of a burn. c. Describe emergency care for heat and chemical burns. d. Describe the cause, signs and care for: . Heat cramps . Heat exhaustion . Heat stroke . General cooling of the body . Frostnip . Superficial frostbite . Deep frostbite (freezing)	

Time (Elapsed) Actual	Content	Training Aids
(0:05) 0:20	BURNS 1. Classification. Burns are classified by degree of damage to the skin. a. First-degree burns. In a first-degree burn, only the top layer of the skin is burned and the skin becomes reddened. b. Second-degree burns. In a second degree burn there is some damage to deeper layers of the skin and the skin blisters. c. Third-degree burns. In a third-degree burn the entire thickness of the skin is burned. 1) The skin usually is dry, pale or white but may be brown or even charred. 2) There is a loss of sensation in the area due to a destruction of nerve endings.	Chart/slide/drawing of 1st, 2nd and 3rd degree burns
	2. Rule of nines. The rule of nines provides a means of estimating the percentage of the body that is burned as follows: a. Head — Adult 9% — Infant 18% b. Arms — Adult 9% each — Infant 9% each c. Torso front — Adult 18% — Infant 18% d. Torso back — Adult 18% — Infant 18% e. Genitalia — Adult 1% — Infant 1% f. Legs — Adult 18% each — Infant 14% each Adult 100% — Infant 100%	Chart/slide/drawing of rule of nines for adults and infants

Time (Elapsed) Actual	Content	Training Aids
	3. Criticality. The degree of seriousness of a burn can be estimated from the following: a. Degree of the burn b. Percentage of body burned c. Location of burn d. Age of patient 4. Critical burns. The following burns are considered critical: a. Burns complicated by respiratory tract injuries and fractures. b. Third-degree burns involving the critical areas of the face, hands and feet. c. Third-degree burns covering more than 10% of the body surface. d. Second-degree burns covering more than 30% of the body surface. Note: The general condition of the patient must also be considered. For example, a moderate burn in an aged or critically ill person might be serious. 5. Student exercise. Give the students several examples and have them estimate whether the burns described are critical. 6. Management a. The burned area should be covered with a clean dressing. b. If possible, cold wet applications should be used to relieve the pain. Note: Never use grease (e.g., butter, lard, Vaseline) on a burn.	

Time (Elapsed) Actual	Content	Training Aids
	7. Chemical burns. For chemical burns, the patient needs speedy access to water. a. With the exception of lime (which may be brushed off the skin), chemicals in contact with the skin should be washed off with copius amounts of water. b. For chemicals in the eye, the rescuer may need to hold the patient's eye open for him and rinsing should continue for up to 20 minutes. 8. Electrical burns a. Electrical burns can be more serious than they appear since they can penetrate the skin deeply; the burn may even enter in one place and leave the body in another so that there are two wounds. b. A major problem with electrical burns is respiratory and cardiac arrest.	
(0:25) 0:10	EXPOSURE TO HEAT Note: It is expected that this section may be eliminated if inappropriate to the climate of the area. 1. Heat cramps a. A patient may suffer painful muscle spasms in the extremities after strenuous exercise. b. The cramps will usually be relieved if the patient takes a salt solution. 2. Heat exhaustion a. This is the most common illness caused by heat. b. The patient is usually weak, dizzy or faint. Signs include: 1) Moist clammy skin 2) Dilated pupils 3) Normal or subnormal temperature	

Time (Elapsed) Actual	Content	Training Aids
	c. The patient should be treated as if he were in shock and should be transported to a medical facility as soon as possible. 3. Heat stroke a. In a heat stroke, the patient's sweating mechanism has broken down and he is unable to lose body heat through the skin. b. Important signs are: 1) Very hot, dry skin. 2) Appears to have a fever and be very ill. 3) Very high body temperature. c. This condition is a true emergency. If body temperature rises too high, brain cells can be injured and the patient may die. d. The body should be cooled in any way possible (e.g., cold towels, air from a fan) while the patient is transported to a medical facility where they will likely give the patient an ice-water bath to lower the temperature.	
(0:35) 0:10	EXPOSURE TO COLD Note: It is expected that this section may be eliminated if inappropriate to the climate of the area. 1. General cooling of the body a. Exposure to cold, snow or ice can result in a general cooling of the body that can go through the following five stages: 1) Shivering--an attempt by the body to generate heat. 2) Apathy.	

Time (Elapsed) Actual	Content	Training Aids
	3) Unconsciousness with a glassy stare, slow pulse and slow respiration rate. 4) Freezing of the extremities. 5) Death. b. Emergency care. This is an acute emergency requiring immediate medical attention. Emergency care includes: 1) Keep the patient dry--replace wet clothing. 2) Apply external heat to both sides of the patient using whatever heat sources are available including the body heat of rescuers. 3) If the patient is conscious and in a warm cabin, give him hot liquids and a warm bath. 4) Monitor respirations and pulse and provide pulmonary and cardiopulmonary resuscitation as required. 2. Local cooling of the body a. The condition 1) 70% of the body is composed of water. 2) When the body is subjected to excessive cold, the water in the cells will freeze; the resulting ice crystals may even destroy the cell. 3) It may be minor (frostnip), superficial, or deep. Note: Never rub any condition of frostbite; the ice crystals in the tissue can cut and destroy cells.	

Time (Elapsed) Actual	Content	Training Aids
	b. Frostnip 1) There is a sudden blanching of the skin--the patient is usually unaware of it. 2) The skin can be warmed by applying firm pressure with a hand (no rubbing) or other warm body part or by blowing hot breath on the spot. c. Superficial frostbite 1) The skin is white and waxy; it is firm to the touch but the tissue beneath is soft and resilient. 2) Treatment includes providing dry coverage and steady warmth. d. Deep frostbite or freezing 1) The skin is white and feels hard throughout. 2) This patient needs immediate hospital care. He should be kept warm and resuscitated when necessary.	
(0:45) 0:05	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	
(0:50)	2. Demonstration by members of the class of achievement of lesson objectives.	

Time: 1 hr.

LESSON 11

EMERGENCY CHILDBIRTH

Objectives: Provide the student with sufficient information for him to be familiar with procedures to follow in caring for the mother and baby in the event of an emergency childbirth.

Training aids: Film:

Emergency Childbirth (Office of Civil Defense, Medical Self-Help Training Course Lesson 11)

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Lesson coverage. The lesson includes a film and discussion on the birth of an infant. 2. Need for lesson. The rescuer should be familiar with procedures to follow in assisting the mother and caring for both mother and newborn. 3. Lesson objectives. The purpose of this lesson is to familiarize the student with emergency childbirth procedures.	
(0:05) 0:30	FILM: EMERGENCY CHILDBIRTH 1. Introduction to and showing of film. Although the film situation takes place in a home setting, it is included in the course since it shows an actual childbirth and means of caring for mother and baby.	Film
	2. Review of important points a. The mother should lie down with knees drawn up and spread apart. If in an automobile, one foot may be placed on the floorboard. b. The head will usually deliver first with the face down; it will then rotate to face the mother's right or left thigh. c. The head should be supported on your hands and forearm--do not pull. Remember: the body is slippery. Also: the mother delivers the baby; the rescuer only assists. d. If the cord is wrapped tightly around the baby's neck, gently loosen it. e. If the "bag of waters" doesn't break, break it and push it away from the baby's nose and mouth so he can breathe. f. The shoulders and body will follow the head as the contractions continue.	

Time (Elapsed) Actual	Content	Training Aids
	g. The baby should be placed on the mother's abdomen with his head down and to one side to facilitate drainage of mucus; both mother and baby should be kept warm. h. Blood and mucus should be wiped from the baby's mouth and nose with a sterile gauze pad. i. If the baby does not breathe, he may be stimulated by snapping an index finger against the bottom of his feet. j. If the baby still does not breathe, pulmonary and cardiopulmonary resuscitation should be performed as required. k. The afterbirth (placenta) will usually be delivered a few minutes after the baby is born. l. The afterbirth should be saved and sent to the hospital with mother and baby.	
(0:35) 0:10	COMPLICATIONS 1. Breech birth a. In a breech birth, the buttocks presents itself first. b. The buttocks and trunk will deliver spontaneously. c. If the baby's head does not deliver within three minutes of the delivery of his trunk, the baby will need an airway created for him because his umbilical cord will be compressed by his head and he will receive little or no blood and therefore no oxygen.	

Time (Elapsed) Actual	Content	Training Aids
	d. An airway can be created by placing the middle and index fingers of one hand in the vagina until they touch the baby's nose. An airway can be formed by pushing the vagina away from the baby's face until the head is delivered. e. The rescuer should <u>not</u> attempt to pull the baby out. f. If the head does not deliver, the mother should be transported to a medical facility immediately. An airway should be maintained for the baby during transportation. 2. <u>Prolapsed cord</u> a. The term "prolapsed cord" means that the umbilical cord has come out of the vagina before the baby is born. b. As in a breech delivery, the emerging baby will press against the cord and cut off his blood supply and oxygen. c. In the event of a prolapsed cord, the rescuer should place his hand in the vagina and push the baby's head up three or four inches to relieve pressure on the cord. 3. <u>Limb presentation.</u> If only one arm or leg delivers, the mother needs immediate transportation to a medical facility for obstetrical help.	
(0:45) 0:05 (0:50)	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	

Time: 1hr.

LESSON 12

GAINING ACCESS TO THE PATIENT

<u>Objectives:</u> Provide the student with sufficient information for him to understand techniques of gaining access to a patient using simple tools.

<u>Training aids:</u> See note below.

<u>Note:</u> This lesson may be run in the classroom or in a field setting. If run in the classroom, all techniques discussed should be illustrated by slides and all simple tools should be displayed. If run in a field setting, the instructor can demonstrate techniques on an actual wrecked car. In field training, there should be no more than 20 students per demonstration vehicle.

<u>Note:</u> Since car designs vary from year to year, the instructor should check with his local rescue unit prior to teaching the lesson to assure that coverage of techniques is up-to-date.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Lesson coverage. This lesson explains techniques of gaining access to victims in wrecked vehicles using simple hand tools. It should not be considered to be a complete lesson on gaining access. Power and heavy duty equipments used by rescue groups trained in extrication are not covered. It covers only techniques and suggestions that the rescuer can use until rescue crews arrive on the scene. 2. Need for lesson. A speedy access to the patients may mean that their conditions can be stabilized and lives can be saved. 3. Lesson objectives. At the end of the lesson, the student will be able to discuss techniques of gaining access using simple tools. GENERAL RULES 1. When you arrive at the scene of an accident, you may find anything from an individual apparently unhurt standing by his vehicle to multiple vehicles with pinned occupants. 2. You must first size up the situation and summon appropriate help; e.g., fire department, power company. 3. Know what you can and cannot do. You might worsen the patient's condition or become a patient yourself if you try to accomplish what you are unequipped to do.	
(0:05) 0:15	CLOSED UPRIGHT VEHICLE 1. Opening doors. Access to the patient may be made by simply opening one of the car doors. 2. Windows. If the doors are jammed or inaccessible, the best means of gaining access may be through one of the windows.	

Time (Elapsed) Actual	Content	Training Aids
	a. Rear windows are typically made of tempered glass and will shatter when struck; this is probably the quickest means of gaining access to a closed vehicle with jammed or inaccessible doors. b. Both front and rear windows may be removed by removing the molding from around the glass with a screwdriver and lifting out the glass. 3. Prying doors a. In model cars prior to about 1967, a jammed door may be forced opened with a jackhandle. b. In 1967 (approximately) and newer cars, the door cannot be pried open; it must be cut. 4. Cutting a. Any sharp tool and a hammer can be used to cut car metal. b. In 1967 and newer model cars, a cut may be made around the lock to open a jammed door. c. The roof of a car is probably the easiest place to cut. Roll bars in a roof may hamper access. d. Cutting metal, although possible, is time consuming with simple tools. If the rescuer cannot gain immediate access through windows or doors, he should summon the fire department, rescue crew or other service that has the necessary equipment.	
(0:20) 0:10	OVERTURNED CLOSED VEHICLE 1. General rule. The vehicle should be left in the position in which it is found, that is, upside down or on its side. Righting the vehicle could cause additional injuries to the patient.	

Time (Elapsed) Actual	Content	Training Aids
	2. Stability. No attempt should be made to enter the vehicle until its stability is assured. a. It should be shored up if necessary with any available materials, that is, a spare tire, wheel chocks from trucks, timber, rocks, etc. b. A vehicle in a precarious position on a cliff or hillside may need to be tied to a solid object. 3. Opening doors. If a door is opened, it should be tied open. A prop could be knocked out and a slamming door could cause additional injuries. 4. Windows. If the doors do not open, breaking the rear window is probably the fastest means of gaining access.	
(0:30) 0:05	PINNED PATIENTS 1. The appropriate rescue service should be summoned when patients are pinned beneath vehicles. 2. The following simple procedures may be used: a. A jack may be used to raise the vehicle. b. Blocks and a pry bar can be used. c. Many hands (bystanders) can assist in moving a vehicle. Note: It is especially important that the vehicle be shored up as it is moved to make sure it does not fall back down on the patient. Note: A jack cannot be used with a completely overturned vehicle. 3. Patients whose heads, arms or other body parts have been thrown through the windshield or other car window need special attention as follows:	

Time (Elapsed) Actual	Content	Training Aids
	a. The extruded part should be padded as well as possible with bandaging materials. b. A knife or pliers can be used to break or fold away the glass so that the patient part can be freed. Note: The rescuer should wear work gloves.	
(0:35) 0:05	PATIENTS JAMMED INSIDE VEHICLES 1. Power tools may be necessary to free patients who are jammed inside wrecked vehicles. However, certain simple procedures should not be forgotten. 2. If a foot is caught and is uninjured, it may be possible to free it by removing the shoe. 3. The front seat may be moved to give additional working space. 4. The back seat might be lifted out completely. 5. A knife could be used to cut seat belts. If victims are dangling upside down in seat belts, they must be supported as the belt is being cut.	
(0:40) 0:05	ELECTRICAL HAZARDS 1. If there are fallen wires or other electrical hazards, the power company or appropriate rescue group should be summoned immediately. 2. Unless the power company says the power is off, it should be assumed that it is on even though street lights are off. 3. Patients should be told to stay in the vehicle. 4. If there is a fire, they must jump from the vehicle (a child could be thrown from the vehicle). They must not make contact with the vehicle and ground simultaneously.	
(0:45) 0:05 (0:50)	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	

Time: 1 hr.

LESSON 13

MOVING PATIENTS

Objectives:

Provide the student with sufficient information for him to know when accident victims should and should not be moved.

Describe emergency moves.

Provide the student with practice in lifting and moving patients from ground surfaces.

Training aids:

Equipment/materials

Blanket (one for each 3 students)

Note: This lesson may be run in a classroom or field setting.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. <u>Lesson coverage</u>. The lesson describes when accident victims should and should not be moved, types of emergency moves and non-emergency moves. GENERAL CONSIDERATIONS 1. In general, an accident victim should not be removed from a vehicle until he is ready for transportation to a hospital. 2. A victim should be moved only if there is an immediate danger to him or others if he is not moved, that is: a. The vehicle is on fire. b. There has been excessive gasoline spillage. c. Explosives or other hazardous materials are involved. d. It is impossible to protect the accident scene. e. It is impossible to gain access to other victims in the vehicle who need life-saving care. 3. Victims who have been thrown clear of the accident also should not be moved unless one of the above dangers exists. <u>Note</u>: A cardiac arrest patient would typically be moved from the vehicle since cardiopulmonary resuscitation must be performed on a firm surface. 4. If it is necessary to move a victim, the speed with which he is moved will depend on the reason for moving him, for example: a. <u>Emergency move.</u> If there is a fire, the victim will be pulled out of the car and away from the area as quickly as possible. b. <u>Non-emergency move.</u> If a victim needs to be moved to gain access to others, due consideration will be given to his injuries before and during movement.	

Time (Elapsed) Actual	Content	Training Aids
(0:05) 0:05	EMERGENCY MOVES 1. The major danger in moving a victim quickly is the possibility of spine injury--discussed in the lesson on spine injuries. 2. In an emergency, every effort should be made to pull the patient in the direction of the long axis of the body to provide as much protection to the spine as possible. 3. It is impossible to remove a seated patient quickly and, at the same time, provide proection for his spone. 4. If the patient is on the ground, he can be dragged away from the scene by tugging on his clothing in the neck and shoulder area--demonstrate on a student. 5. It may be easier to pull the patient onto a blanket and then drag the blanket away from the accident scene--demonstrate on a student. 6. Such a move is an emergency move only. It does not really protect the spine from further injury. It simply is the best <u>quick</u> move.	
(0:10) 0:35	NON-EMERGENCY MOVES--DESCRIPTION AND STUDENT PRACTICE 1, <u>General comments</u> a, All injured parts should be immobilized as much as possible prior to movement. b. All injured parts should be protected as much as possible during movement. 2. <u>Vehicle moves</u> a. Lifting a patient from a vehicle will require ingenuity depending on the situation. b. Patients may be completely mobile or partially mobile and thus can assist in the move.	

Time (Elapsed) Actual	Content	Training Aids
	c. For completely immobile patients, the rescuer will need to solicit help and move the patient as well as he can under the circumstances. d. The student will have an opportunity to practice moving different types of patients from vehicles in the field training sessions. 3. Student practice. Working in groups of three, four, or five (one student serving as patient), students should practice each of the moves described below. The patient should be lifted from the floor, moved a short distance and replaced on the floor. a. Direct ground lift--no spine injury--two or three rescuers 1) All rescuers line up on one side of the patient. 2) All rescuers drop one knee to the ground (the same knee for each rescuer). 3) The patient's arms are placed on his chest if possible. 4) The head rescuer places one arm under the patient's neck and shoulder and cradles the patient's head. 5) The head rescuer places his other arm under the patient's lower back. 6) A second rescuer places one arm under the patient's knees and one arm above the buttocks. 7) If there is a third rescuer, he places both arms in the waist area and the other two rescuers slide their arms up to the mid-back or down to the buttocks as appropriate.	

Time (Elapsed) Actual	Content	Training Aids
	8) On signal, all rescuers lift the patient to their knees and roll him in toward their chests (the rescuers' backs are now straight and they are supporting the patient by their arms and chests). 9) On signal, all rescuers stand and move with the patient. 10) To replace the patient on the ground or on a low cot, the procedure would be reversed. b. Direct ground lift--spine injury--four or more rescuers 1) General comments a) To move a prone or supine patient suspected of having a spine injury, a long backboard or scoop stretcher is required. b) Such a long backboard is also used as a means of removing patients with various injuries from automobiles. 2) Direct lift a) The previously described lift can be used for individuals with spine injuries if an additional person provides traction to the head of the patient. b) Extreme care must be taken to move the body in one line. c) If at all possible, the patient should not be moved until proper equipment (a long backboard) is available.	

Time (Elapsed) Actual	Content	Training Aids
	c. <u>Extremity lift--no fractures (or all fractures splinted)--two rescuers</u> 1) One rescuer kneels at the head of the patient and one at the side by the patient's knees. 2) The head rescuer places one hand under each of the patient's shoulders while the foot rescuer grasps the patient's wrists. 3) The foot rescuer pulls the patient to a sitting position; the head rescuer assists by pushing the patient's shoulders up and supporting his back and head with his body. 4) The head rescuer slips his hands under the patient's arms and grasps the patient's wrists. 5) The foot rescuer slips his hands under the patient's knees. 6) Both rescuers crouch on both feet. 7) They stand simultaneously and move with the patient.	
(0:45) 0:05 (0:50)	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	

Time: 2 hrs.

LESSON 14

PATIENT EXAMINATION AND TRIAGE

<u>Objectives:</u> Provide the student with sufficient information for him to:

- Define and describe the implications of variations in each vital sign.
- Demonstrate procedures to follow in performing a patient examination.
- Identify cases which would be considered of the highest priority for emergency and medical care.

<u>Training aids:</u> Equipment/materials:

Resuscitation manikin (one for each 5 students)
Blanket (one for each manikin)

<u>Instructors:</u> One instructor for each 10 students for the practice period.

*An asterisk (*) is used throughout this lesson plan to indicate that the information presented may be inapplicable to some jurisdictions.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. <u>Lesson coverage</u> a. Review of the vital signs, their variations and implications of the variations. b. Procedures for performing a patient examination. c. Identification of highest, second and lowest priority patients for emergency and medical care. 2. <u>Need for lesson</u> a. It is critically important that the rescuer know how to check all vital signs and the implications of variations in signs in patient diagnosis and care. b. Performance of a thorough patient examination can reveal injuries that require care before the patient is moved. Providing the care can minimize damage to the patient and shorten recovery time. c. A knowledge of high priority patients will permit the rescuer to assist in triage in the event of a multiple casualty. 3. <u>Lesson objectives</u>. At the end of the lesson, each student will be able to: a. Define and describe the implications of variations in each vital sign. b. Demonstrate procedures to follow in performing a patient examination. c. Identify cases which would be considered of the highest priority for emergency and medical care.	

Time (Elapsed) Actual	Content	Training Aids
(0:05) 0:30	REVIEW OF VITAL SIGNS <u>Note</u>: All of the vital signs have previously been discussed. This session should be conducted as a review exercise in which different students are asked to describe each sign, deviations from the normal and implications of these deviations. <u>Examples are given below</u>. It should be emphasized that <u>all</u> signs are used together with other information (what the patient says, what bystanders say, what the rescuer observes from the scene) in evaluating the nature of a given illness/injury. 1. <u>Pulse</u> a. <u>Rapid, strong:</u> fright, apprehension, heat stroke. b. <u>Rapid, weak:</u> shock, bleeding, diabetic coma, heat exhaustion. c. <u>Slow, strong:</u> stroke, skull fracture. d. <u>None:</u> cardiac arrest, death. 2. <u>Respirations</u> a. <u>Shallow:</u> shock, bleeding, heat exhaustion, insulin shock. b. <u>Deep, gasping, labored:</u> airway obstruction, chest injury, diabetic coma, heart disease. c. <u>None</u>: respiratory arrest due to any number of illnesses/ injuries. d. <u>Bright, frothy blood coughed up:</u> lung damage possibly due to fractured ribs or penetrating objects.	

Time (Elapsed) Actual	Content	Training Aids
	3. Skin temperature a. Cool, moist: shock, bleeding, heat exhaustion. b. Cool, dry: exposure to cold. c. Hot, dry: heat stroke, high fever. 4. Face color (for lightly pigmented people only) a. Red: high blood pressure, carbon monoxide poisoning, heat stroke, diabetic coma. b. Pale/white/ashen: shock, bleeding, heat exhaustion, insulin shock. c. Blue: heart failure, airway obstruction, some poisonings. Note: Blue results from poor oxygenation of circulating blood. For people with dark skin pigmentation, blue may be noted around the finger nails. 5. Pupils of the eyes a. Dilated: shock, bleeding, heat stroke, cardiac arrest. b. Constricted: opiate addiction. c. Unequal: head injury, stroke. 6. State of consciousness a. Confusion: most any illness/injury, fright, apprehension, alcohol, drugs. b. Coma: stroke, head injury, severe poisoning, diabetic coma.	

Time (Elapsed) Actual	Content	Training Aids
	7. Inability to move upon command--an indicator of paralysis. a. One side of body: stroke, head injury. b. Arms and legs: damage to spinal cord in neck. c. Legs: damage to spinal cord below neck. 8. Reaction to physical stimulation--an indicator of paralysis. a. No sensation in arms and/or legs: damage to spinal cord as indicated above. b. Numbness in arms and/or legs: damage to spinal cord as indicated above. Note: No sensation or indication of pain when there is an obvious injury can also be due to hysteria, violent shock, or excessive alcohol or drug use.	
(0:35) 0:20	PATIENT EXAMINATION 1. Stages. A patient examination is performed in two stages: a. Checking for and controlling life threatening problems. b. Checking for and stabilizing injuries/illnesses not threatening to life. 2. Life threatening survey. The procedures for the life threatening survey are accomplished simultaneously not sequentially. For example, the rescuer does not check for breathing first when he notices blood severely gushing from a wound. Demonstrate the following on a manikin as appropriate.	Manikin

Time (Elapsed) Actual	Content	Training Aids
	Note: The rescuer should always check for medical identification symbols. These can alert the rescuer to the nature of the problem and care required. a. Arrested or abnormal breathing 1) Observe chest and feel for exhaled air at mouth and nose. Don't forget the special case of the laryngectomee. 2) As appropriate: a) Clear the airway/open the airway. b) Perform pulmonary resuscitation. c) Seal chest wounds. d) Stabilize flail chest. * e) Administer oxygen to cardiac cases and patients suffering from anaphylactic shock. b. Arrested or abnormal pulse 1) Check carotid pulse. 2) If none, provide cardiopulmonary resuscitation. 3) If rapid and weak, anticipate shock--elevate patient's legs (if there are no head or chest injuries), maintain body temperature, look for and eliminate cause if possible. c. External bleeding 1) Observe for indications of external bleeding. 2) Use direct pressure to control any bleeding (use tourniquet only as last resort).	

Time (Elapsed) Actual	Content	Training Aids
	3) Dress and bandage wound. 4) Preserve avulsed parts. 5) Do not replace exposed organs. 6) Do not remove penetrating objects. d. Internal bleeding/shock 1) Observe skin color, temperature, pupils. 2) Place in shock position, maintain body temperature. 3) Check for and eliminate cause if possible. Note: If there are multiple casualties, check each patient stopping only to administer to those with life threatening problems. 3. Survey of problems not threatening to life a. Skull injury/brain damage 1) Observe for confusion, unresponsiveness, unconsciousness. 2) Check to see that pupils of the eye function together and are the same size. 3) Observe for lacerations and contusions about the face and scalp. 4) Feel gently for depressions in the skull. 5) Look for fluid or blood from ears or nose. 6) If there is evidence of skull injury or brain damage, suspect a neck injury. b. Spinal cord damage 1) Ask the patient if he can move his arms and legs.	

Time (Elapsed) Actual	Content	Training Aids
	2) Touch the arms and legs and ask the patient if he feels the touch. 3) If the patient is unconscious, assume there is a spine injury. 4) Splint the spine as appropriate. c. <u>Fractures and dislocations</u> 1) Observe obvious wounds and deformities (including a leg turned out or in). 2) Ask the patient if he feels tenderness or pain in any area. Proceed systematically, observing for wounds and feeling gently, as appropriate, for deformities in the following areas: a) Neck b) Upper extremities c) Rib cage d) Back and buttocks e) Pelvic girdle f) Lower extremities 3) Straighten angulated fractures of long bones except the spine. 4) Immobilize all fractures and dislocations as appropriate. 5) Do not replace protruding bones. d. <u>Wounds</u> 1) Dress and bandage all open wounds. <u>Note:</u> If at all possible, the patient should not be moved until it is assured that there is no spinal cord damage.	

Time (Elapsed) Actual	Content	Training Aids
	4. <u>Gaining information from the scene</u> a. The rescuer should be alert to the fact that information from the accident scene can assist in making a diagnosis, for example: 1) One might suspect heat or cold injuries in extremes of the environment. 2) A crushed steering wheel might indicate chest injuries, or severe internal bleeding due to a damaged liver. 3) A seat belt in place may indicate internal lower abdominal injuries, pelvic fractures or spine fractures. 4) A damaged dashboard might indicate facial fractures, skull injuries, or neck injuries. 5) The presence of liquor bottles or drugs might indicate alcohol or drug abuse. b. The rescuer can also gain valuable information from witnesses to the accident, for example: 1) They may be able to describe the nature of the crash. 2) They may be able to tell whether patients have been moved from their initial positions following the accident.	
(0:55) 0:10	TEN-MINUTE BREAK	
(1:05) 0:10	TRIAGE 1. <u>Definition.</u> Triage means sorting multiple casualties into priorities for emergency care or for transportation to definitive care. 2. <u>Importance.</u> Although it is not expected that the rescuer will perform a transportation function, he will assist in evaluating patients in a multiple casualty and providing life-saving emergency care.	

Time (Elapsed) Actual	Content	Training Aids
	3. Priorities. Priorities are usually given in three levels as follows: a. Highest priority 1) Airway and breathing difficulties 2) Cardiac arrest 3) Uncontrolled or suspected severe bleeding 4) Severe head injuries 5) Severe medical problems--poisonings, diabetic complications, cardiacs 6) Open chest or abdominal wounds 7) Severe shock b. Second priority 1) Burns 2) Major multiple fractures 3) Back injuries with or without spinal cord damage c. Lowest priority 1) Fractures or other injuries of a minor nature 2) Obviously mortal wounds where death appears reasonably certain 3) Obvious dead	
(1:15) 0:30	STUDENT PRACTICE 1. Each student demonstrates performing a patient examination on a manikin. He should give a verbal account of what he is checking for and what he finds.	Manikin

Time (Elapsed) Actual	Content	Training Aids
(1:45) 0:05 (1:50)	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	

Time: 1 hr.

LESSON 15

CARDIOPULMONARY RESUSCITATION PRACTICE

Objectives: Provide the student with additional practice in the technique of cardiopulmonary resuscitation.

Training aids: Equipment/materials

Resuscitation manikin (one for each 5 students)
Infant resuscitation manikin (one for each 10 students)
Blanket (one for each resuscitation manikin)

Instructors: One instructor for each 10 students.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:50	INTRODUCTION 1. Lesson objectives. The purpose of this lesson is to provide the student with additional practice in cardiopulmonary resuscitation. PRACTICE 1. Each student should demonstrate the one-man technique of cardiopulmonary resuscitation on both adult and infant manikins. 2. Each student should serve both as a ventilator and compressor in demonstrating the two-man technique on a manikin and should change positions during resuscitation. 3. The instructor should use this practice period not only for perfection of technique, but also for emphasis of all points covered in the lesson on cardiopulmonary resuscitation.	Manikins
(0:50)		

Time: 2 hrs.

LESSON 16

THE ACCIDENT SCENE: A SITUATIONAL REVIEW

Objectives: Provide the student with a review and integration of course content.

Training aids: List of situations described in the lesson (one for each student).

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. The lesson includes several accident situations developed to provide a review and integration of course contents. 2. The questions posed for each situation do not necessarily have clear-cut answers; they are designed to stimulate class discussion. Note: 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.	List of situations
(0:05) 0:15	Situation 1 You are the first to arrive at the scene of a two-car collision. Both cars are upright. A quick survey reveals 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 and neck, 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 patient should be treated first and why?	

Time (Elapsed) Actual	Content	Training Aids
	c. What care should be given to each patient? d. When the ambulance arrives, which two patients should be transported first and why?	
(0:20) 0:10	Situation 2 You are following a car that veers suddenly onto the shoulder of a limited access highway, up an enbankment, turns over hard on its left wheels and rolls over onto its roof. You can see two people inside dangling in their seat belts and shoulder harnesses. Questions: a. What should be done first and why? b. You have assured that the vehicle is shored up and stable. You find the door on the driver's side unlocked, and you open it to gain access to the victims. What should you do next and why? c. You find each occupant unconscious. Each is breathing and has no obvious open wounds. How would you remove them from their belts and harnesses? d. From the information presented, what do you think might have happened to the driver?	
(0:30) 0:05	Situation 3 You are patrolling a highway and a violent thunder storm erupts. You come across a car on which some electric wires have fallen. The driver is opening the front door of the car. Questions: a. What should be done and why?	

Time (Elapsed) Actual	Content	Training Aids
(0:35) 0:05	Situation 4 An unconscious patient has been pulled from the burning wreckage by a passerby. He 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 this patient?	
(0:40) 0:05	Situation 5 The left window of the vehicle is smashed and the driver has a large piece of glass penetrating his left cheek and is bleeding profusely from the left cheek and forehead. He is unconscious and fastened in his seat belt. Questions: a. How would you care for the patient? b. What other injuries might you suspect the patient to have and how would you check for them?	
(0:45) 0:05	Situation 6 The car has been traveling slowly when it suddenly veers off the road, grazes a tree and comes to rest against another tree. The driver is barely conscious. He does not speak and appears to have no feeling on one side of his body. Questions: a. What is most likely wrong with the driver? b. How would you care for him?	
(0:50) 0:10	TEN-MINUTE BREAK	

Time (Elapsed) Actual	Content	Training Aids
(1:00) 0:10	Situation 7 You have arrived at the scene of an accident and find a driver and one passenger in the vehicle. Both are fastened in their seat belts. The driver is coughing up bright frothy blood and is barely conscious. The passenger is unconscious, has severe lacerations of the scalp, his respirations are shallow and his pulse weak, blood is dripping from his ears and nose. Questions: a. What is most likely wrong with the driver? b. What is most likely wrong with the passenger? c. Which patient should be cared for first and why? d. What care should be provided for each patient?	
(1:10) 0:10	Situation 8 The driver is unconscious. He is fastened in his seat belt. There is dark red blood oozing from his mouth. The passenger in the front seat has an open fracture of the left tibia and is bleeding profusely at the fracture site. Questions: a. What is most likely wrong with the driver? b. Which patient would you care for first and why? c. How would you care for each patient? d. While you are working on these patients, you hear a moan and discover a child on the floor of the back seat. You have to remove one patient from the vehicle to gain access to the child.	

Time (Elapsed) Actual	Content	Training Aids
	e. Which patient would you move? How would you move him? f. The child is barely conscious and has a closed angulated fracture of the shaft of the humerus. How would you care for him?	
(1:20) 0:05	Situation 9 A car slows down suddenly and comes to a stop at the side of the road. The window is open on the driver's side. The driver's face appears grotesquely swollen and he is barely breathing. Questions: a. What would you suspect might have happened? b. What would you do for the patient?	
(1:25) 0:05	Situation 10 A car has stopped by the side of the road. An unconscious pedestrian is lying near the car. The driver of the car says he stopped his vehicle because he saw the pedestrian jerk violently and then fall down. Questions: a. What would you suspect might be wrong with the pedestrian? b. What would you do for him?	
(1:30) 0:05	Situation 11 You arrive at the scene of an accident and find a vehicle lying on its side. Several bystanders are attempting to right the vehicle. Questions: What would you do and why?	

Time (Elapsed) Actual	Content	Training Aids
(1:35) 0:10	Situation 12 You find an unoccupied vehicle that has hit a guard rail and come to rest against a tree. An unconscious person with no obvious injuries is located several yards down the road. Questions: a. Explain in detail how you would conduct an examination of this individual for life-threatening problems, illnesses and injuries.	
(1:45) 0:05 (1:50)	SUMMARY AND QUESTIONS 1. Class questions or comments on the topic of the lesson.	

Time: 3 hrs.

LESSON 17

FIELD TRAINING I

Objectives: Provide the student with practice in dressing and bandaging wounds and immobilizing fractures in a field setting.

Training aids: Equipment/materials

Vehicle (one for each 10 students)
Triangular bandage (one for each student)
Roller-type bandage (one for each student)
Universal dressing/gauze pad (one for each student)
Paper cup/cone (one for each 10 students)
Upper extremity splints (one set for each 3 students)
Lower extremity splints (one set for each 3 students)
Blanket (one for each 3 students)
Short spine board or spine splint with associated neck and back supports and straps (one for each 10 students)

Instructors: One for each vehicle.

Note: This lesson is designed to be run in a field setting with simulated patients (students) in actual vehicles. The vehicles do not need to be wrecks since gaining access to patients is not considered a lesson objective. The lesson could be conducted outdoors in a parking lot or field or, if desired, indoors in some appropriate facility such as a garage or armory.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:15	INTRODUCTION 1. The lesson provides the student with practice in dressing and bandaging wounds and immobilizing fractures in a field setting. PROCEDURES 1. Ten situations have been developed for the field training session. Note: The instructor should use more or fewer situations if he desires. He should feel free to develop his own situations or to alter any prepared situation as appropriate. 2. For each situation: a. One student serves as the patient. b. One student serves as the law enforcement officer. c. The remaining eight students serve as bystanders. 3. "Patients" in the vehicle are all easily accessible. The vehicle is upright and the rescuer can use either right or left door to gain access. The rescuer may want to move the front seat forward or backward to improve working space. 4. The "patient" will be briefed on his injuries/illness and will be told how to "perform" his role by the instructor. In general, it is expected that most role playing will be simple and pertinent to the injuries at hand; that is, a person with a fractured femur will have extreme pain at the fracture site. 5. The student serving as law enforcement officer should be told the nature of the illnesses/injuries with which he is dealing. All bystanders will also be informed of the illness/injury. The rescuer should proceed as follows:	

Time (Elapsed) Actual	Content	Training Aids
	a. Select the appropriate equipment and supplies needed to render emergency care. b. Select bystanders to assist if necessary and direct their activities as appropriate. c. For those bystanders selected to assist, explain precisely what they are to do. Remember that bystanders can be overly enthusiastic and therefore detrimental to the patient. d. Decide whether the emergency care provided in the vehicle should be of an interim or permanent nature; that is, if a full splint is applied will it be possible to get the patient out of the vehicle? An interim means of caring for the injury may be required until the patient is removed from the vehicle. e. For all conscious patients, explain what you are doing and reassure the patient constantly. Remember that the patient will likely be frightened. Be calm. f. Remove the patient from the vehicle. Note: It will be assumed in each of the situations described below that patients need to be moved in order to gain access to other patients in the car. Note: Removal from the vehicle may range from assisting a patient who is fully mobile to physically lifting the patient from the vehicle. g. Complete emergency care procedures as necessary if procedures in the vehicle were of an interim nature. h. Properly position the patient on a blanket. The patient should be positioned appropriately depending on the nature of his illness/injury. Consideration should be given to maintaining an airway as appropriate and preventing shock.	

Time (Elapsed) Actual	Content	Training Aids
	6. The eight students serving as bystanders should observe all actions and respond to all directions given by the law enforcement officer. Depending on the nature of the illness/injury, some will be actively assisting the rescuer and some will be merely observing. Those selected to assist should pretend ignorance of emergency care procedures and follow all instructions of the law enforcement officer precisely. No horseplay should be tolerated. 7. The situations should be completed one at a time. If the instructor is running short of time, he may wish to run two situations concurrently if he feels he can provide adequate supervision. 8. At the completion of each situation, a general critique should be held. All ten students should participate in the critique. The following elements of the performance should be discussed: a. The care provided within the vehicle, including the selection of appropriate equipment and supplies. b. The manner used by the rescuer in reassuring patients as appropriate. c. The directions given to bystanders whose help was enlisted. d. The care with which the patient was moved from the vehicle. e. The care provided outside the vehicle as appropriate. f. The final positioning of the patient on the blanket depending on the nature of his illness/injury.	

Time (Elapsed) Actual	Content	Training Aids
(0:15) 2:35	SITUATIONS 1. The driver of the car has a closed fracture of the right femur. He is fully conscious and in great pain. 2. A passenger in the front seat has a fractured right knee and multiple lacerations of the scalp. His scalp is bleeding profusely. He is conscious but appears confused and disoriented. A head injury is suspected. 3. The driver is unconscious and draped over the steering wheel. Blood is oozing from his neck. A spine fracture is suspected. 4. A passenger in the front seat has an open fracture of the right humerus and a closed fracture of the right ulna. He is conscious and losing blood rapidly. 5. A passenger in the front seat has an avulsed left eye and a depressed fracture in the front part of the skull. He is unconscious. 6. The driver has two broken ankles. He is conscious. 7. A passenger in the back seat has a dislocated hip. He is elderly and complaining of great chest pain; a heart attack is suspected. 8. The driver has a flail chest. He is conscious and and breathing with great difficulty. 9. The driver has a severe gash extending from his left eye to his left ear, and a deep 7-inch gash in his upper left arm. Blood is spurting from the arm. 10. The driver is breathing with great difficulty. A sucking sound is heard each time he breathes.	
(2:50)		

Time: 3 hrs.

LESSON 18

FIELD TRAINING II

Objectives: Provide the student with practice in dressing and bandaging wounds and immobilizing fractures in a field setting.

Training aids: Equipment/materials

Vehicle (one for each 10 students)
Triangular bandage (one for each student)
Roller-type bandage (one for each student)
Universal dressing/gauze pad (one for each student)
Upper extremity splints (one set for each 3 students)
Lower extremity splints (one set for each 3 students)
Blanket (one for each 3 students)
Short spine board or spine splint with associated neck and back supports and straps (one for each 10 students)

Instructors: One for each vehicle.

Note: This lesson is designed to be run in a field setting with simulated patients (students) in actual vehicles. The vehicles do not need to be wrecks since gaining access to patients is not considered a lesson objective. The lesson could be conducted outdoors in a parking lot or field or, if desired, indoors in some appropriate facility such as a garage or armory.

Time (Elapsed) Actual	Content	Training Aids
(--) 0:10	INTRODUCTION 1. The lesson provides the student with practice in dressing and bandaging wounds and immobilizing fractures in a field setting. PROCEDURES 1. Procedures for this lesson are identical to those for Field Training I (Lesson 17), except that the student serving as patient should simulate pain at any fracture site. For fractures, therefore, the rescuer will need to perform a patient examination. 2. This lesson also includes a patient lying in the road who must be moved.	
(0:10) 2:40	SITUATIONS 1. The driver has a pelvic fracture in the pubic area and a closed fracture of the left elbow. He is fully conscious. 2. The driver has a torn right ear, is bleeding profusely from the right cheek and has a broken rib on the right side. He is barely conscious and breathing with great difficulty. A head injury is suspected. 3. The passenger in the front seat has two fractured knees. He is fully conscious and in great pain. 4. A passenger is sprawled face up on the back seat. He is unconscious and a spine fracture is suspected. Note: The individual serving as prime rescuer should be told not to remove this patient from the car. His removal should await the arrival of the ambulance and long backboard.	

Time (Elapsed) Actual	Content	Training Aids
	5. A passenger has been thrown from the car. He is lying on his back in the road with a closed fracture of the left humerus, a closed fracture of the left fibula, and an open fracture of the right tibia. There are multiple bruises on arms and legs. He is conscious. 6. The driver is conscious but cannot move his legs. A spine fracture is suspected. 7. A passenger in the front seat has a closed fracture of the left humerus and multiple lacerations on the left cheek and shoulder. He is conscious. 8. A passenger in the back seat has a closed fracture of the left femur. An unconscious passenger is seated beside him on his left--select a student to serve as the unconscious passenger. 9. The driver has an open fracture of the right fibula. It is bleeding profusely. 10. The passenger in the front seat is coughing up bright frothy blood. He has extreme pain on the right side of his chest and is barely conscious.	
(2:50)		

Time: 2 hrs.

LESSON 19

FINAL WRITTEN EXAMINATION

Objectives: Test achievement of course objectives.

Training aids: Written test covering major knowledge and skills taught in the course (one for each student).

Time (Elapsed) Actual	Content	Training Aids
(--) 0:05	INTRODUCTION 1. Prior to distributing the test, the instructor should describe the test, test procedures and scoring procedures. a. Test description 1) Number of items 2) Types of items b. Test procedures 1) Time allowed 2) Sequence of test items as appropriate 3) Others as appropriate c. Scoring procedures 1) How test items will be scored, e.g., weight or value given to each test item 2) Specific scoring procedures as appropriate (e.g., right minus wrong)	
(0:05) 1:45 (1:50)	TEST ADMINISTRATION 1. Test distribution and completion.	Written test

Time: 2 hrs.

LESSON 20

FINAL PRACTICAL EXAMINATION

Objectives:

Evaluate student demonstration of the following skills:

- Bandaging the head, eye and extremity
- Cardiopulmonary resuscitation alone and as a member of a team
- 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
- Immobilization of the neck and torso of a sitting patient on a short backboard
- Immobilizing a flail chest
- Bandaging a sucking chest wound

Training aids:

Equipment/materials

Resuscitation manikin (one for each 5 students)
Paper cup or cone (one for each 2 students)
Universal dressings or gauze pads (one for each 2 students)
Upper extremity splints (one set for each 2 students)
Lower extremity splints (one set for each 3 students)
Blanket or mat (one for each 5 students)
Short backboard with neck supports and straps (one for each 10 students)
Triangular bandages (four for each student)
Roller bandage (one for each student)

Time (Elapsed) Actual	Content	Training Aids
(--) 1:50	PROCEDURES 1. Instructors should divide up among themselves the skills to be evaluated. Instructors are advised that certain skills may be demonstrated by all students simultaneously it 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. SKILL EVALUATION 1. 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. 2. 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. 3. Arm Fractures: Working in pairs, one student should demonstrate application of a splint to the humerus. The other student should apply a splint to the ulna. 4. Leg Fractures: Working in groups of three (one student serving as a patient), students should demonstrate application of a splint to immobilize a fracture of the femur. 5. 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.	

Time (Elapsed) Actual	Content	Training Aids
(1:50)	6. 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. Each student should perform both as a ventilator and as a sternum compressor. 7. Patient 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. 8. Immobilization on short backboard: Working in groups of three (one student serving as a patient), each pair of students should demonstrate immobilization of the head and spine on a short backboard. The patient should be seated in a chair. 9. Chest wounds. Working in groups of two, one student should demonstrate immobilizing a flail chest. The other should demonstrate bandaging a sucking chest wound.	

APPENDIX

REFERENCES

American Academy of Orthopaedic Surgeons. Emergency care and transportation of the sick and injured. Chicago: American Academy of Orthopaedic Surgeons, 1971.

American National Red Cross. Drugs and their abuse. Washington, D. C.: The American National Red Cross, 1971.

American National Red Cross. First aid. Garden City, New York: Doubleday and Company, Inc., 1957.

Dunlap and Associates, Inc. Basic training program for emergency medical technicians--ambulance. (Prepared for U. S. Department of Transportation, National Highway Traffic Safety Administration, Washington, D. C.) Washington, D. C.: U. S. Government Printing Office, No. TD-2.208: EM 3 (Concepts and Recommendations, October 1969), No. TD-2.208: EM 3/2 (Course Guide and Course Coordinator Orientation Program, October 1969), and No. TD-2.208: EM 3/3 (Instructor's Lesson Plans, February 1970).

Dunlap and Associates, Inc. Patient handling manual for emergency medical technicians--ambulance. (Prepared for U. S. Department of Transportation, National Highway Traffic Safety Administration, Washington, D. C.) Washington, D. C.: U. S. Government Printing Office, 1971.

Grant, H. and Murray, R. Emergency care. Washington, D. C.: Robert J. Brady Company, 1971.

Ohio Trade and Industrial Education Service. Emergency victim care. A textbook for emergency medical personnel. Columbus, Ohio: The Ohio State Trade and Industrial Education Service, 1971.

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