



# ***Training Emergency Medical Technicians in New Mexico***

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How the victim is handled at the scene of an accident can often mean the difference between life and death. The ambulance drivers and attendants, members of the State police, fire department personnel, and other persons who respond to emergency calls in rural settings frequently need to use skill and judgment seldom required by their urban counterparts.

In northeastern New Mexico a typical ambulance service may serve 15,000 people in an 80-mile radius. Few, if any, medical facilities in the isolated towns are nearby to support the ambulance services. In addition to giving emergency aid at the scene, the ambulance driver and attendants are often required to transport victims of accidents and critically ill persons long distances to obtain needed medical care or special medical facilities.

## **Need for Training**

According to 1970 estimates by the National Traffic Safety Council, New Mexico had the highest vehicular traffic death rate in the nation. The need for advanced emergency medical training

was discovered dramatically in 1969 when staff of the New Mexico Regional Medical Program (RMP) conducted a survey of ambulance services in the State. The survey showed that 85 percent of the ambulance personnel did not have current standard Red Cross first aid training.

To meet this need, a 40-hour course was offered in 1970 through the combined efforts of RMP's Emergency Medical Services Project, the University of New Mexico School of Medicine, and the New Mexico Highway Traffic Safety Commission, Department of Transportation. Prerequisites for the course were kept to a minimum. The only absolute requirement was that the prospective student be currently performing in some capacity within the emergency medical services field. Since the course was designed primarily for ambulance personnel, applicants from ambulance services were selected first. Members of police departments, fire departments, and hospital emergency room staffs were subsequently selected.

The course was first given in Reserve, N. Mex. In 1970, a total of 44 persons were trained in two 40-hour courses, and 97 others took five shorter, less intensive courses. Students in the shorter courses included a University of New Mexico mobile disaster team, with medical, engineering, and pharmacy students, and nurses from the university's college of nursing. Also trained in 1970, in a specially designed course, were 350 State patrolmen, all Albuquerque policemen, and cadets at the Indian Police Academy in Roswell, N. Mex.

During 1971, five 40-hour courses were held in various regions of the State, and 183 emergency medical technicians were trained in these. The 40-hour course was also given on request to 33 persons at the Navajo Police Academy in Window Rock, Ariz., and to 39 members of the Atomic Energy Commission's emergency corps in Los Alamos, N. Mex. Both these agencies funded the courses.

RMP and the New Mexico Highway Safety Commission finance the course, and private and municipal ambulance services contribute by allowing their employees 40 hours off work with pay.

Persons who successfully complete the course are certified as emergency medical technicians by RMP and can use the training to qualify for certification in the National Registry for Emergency Medical Technicians-Ambulance. Thirty-five emergency medical technicians-ambulance have now passed the examinations which qualify them as members of the national registry.

Successful completion of the course also leads to certification at the advanced American Red Cross first aid level. Appropriate cards and certificates attesting to the level of training are awarded each student.

Highlands University, Las Vegas, N. Mex., evaluated the curriculum of this course and granted 2 quarter hours of academic credit to students who wanted to take the course for credit. Six students elected to do so, and paid the necessary matriculation fees and tuition costs. The emergency medical technicians-ambulance training course is now officially recognized at the college level.

### **Course Purposes, Goals, and Content**

The purpose of the course was to provide specialized medical training in emergency procedures and life-saving techniques beyond that normally provided by standard and advanced American Red Cross first aid courses. It was specifically aimed at meeting the needs of ambulance service personnel who have access to certain basic items of specialized medical equipment, and the instruction parallels the Dunlop Basic Training Program for emergency medical technicians-ambulance.

The objectives and goals established for the course were as follows:

1. To have each ambulance attendant be able to establish priorities of care at the scene of an accident or when responding to an urgent medical situation at an office or home.
2. Be cognizant of the value of vital signs as a useful tool in evaluating a patient's condition.
3. Be able to perform all phases of the life-saving steps such as establish airways, stop hemorrhages, treat shock, and give emergency treatment of fractures.
4. Have a basic understanding of the physiological changes taking place in a patient with a life-threatening emergency.
5. Be able to recognize victims with airway problems and cardiac arrest and to perform cardiopulmonary resuscitation.
6. Be able to assist a mother during emergency childbirth and to manage the initial care of the infant.
7. Be familiar with extrication techniques and the use of backboards.
8. Familiarize attendants with special situations they might encounter.

Areas of greatest deficiency identified by a test given the first day were as follows: control of

hemorrhage, care of unconsciousness, care of cardiac patients, and evaluation of environmental emergencies. (See box for course content.)

### How Training Saves Lives

An example of the care and judgment exercised by the graduates is the treatment of an accident victim by Nevins Flowers, owner of an ambulance service, and his assistant, Patrick Martinez. A 19-year-old boy was injured in a car accident in Cimarron Canyon, about 30 miles from Springer,

N. Mex. The boy was rushed by ambulance to the 24-bed Springer hospital where he was diagnosed as being in serious condition, including severe brain injury.

The Springer ambulance drivers immediately began transporting him to Albuquerque, 200 miles away. Just outside of Santa Fe—two-thirds of the way—the drivers observed that the youth was having great difficulty breathing, and they knew he could not survive another hour to reach Albuquerque.

## Content of Basic Training Course for Emergency Medical Technicians (Ambulance)

**General information and orientation (2 hours)**—Ambulances and their equipment; objectives of training; responsibilities to patient, family, religions; police and news media; public relations; control of scene; handling of the deceased; triage (sorting) in multiple casualties situation; defensive and emergency driving; communications; reports and records.

**Anatomy and physiology (4 hours)**—Description, using visual aids, of anatomical structures as should be understood by emergency medical technicians; physiology of respiration, circulation, nervous, osseous, and muscular systems; evaluation of vital signs.

**Life-threatening problem, pulmonary (1-hour lecture and laboratory)**—Necessity to establish and maintain airway. Methods: mouth-to-mouth ventilation; other methods of artificial ventilation; bag-mask resuscitation units and manually triggered units. Suction equipment and airways.

**Life-threatening problem, heart attack, cardiac arrest (1-hour lecture and demonstration)**—Recognition of arrest (standstill and fibrillation); external cardiac compression. Film: "Pulse of Life." Demonstration using inflatable manikins.

**Practice session, cardiopulmonary resuscitation (3-hour laboratory and evaluation)**—Review of techniques of providing and maintaining an open airway, artificial ventilation, use of oxygen, external cardiac compression. (Students

divide into groups depending on number of inflatable manikins available, but no group is larger than 10 per emergency care instructor and manikin.)

**Life-threatening problem, bleeding and shock (1-hour lecture, demonstration, and 2-hour laboratory)**—Recognition and control of bleeding; pressure dressing; limited use of tourniquet; measures to overcome shock; general discussion and demonstration (actual performance training during in-hospital sessions).

**Fractures and dislocations of long bones and pelvis (2-hour lecture and demonstration)**—Anatomy and X-rays. Terminology of fractures, how to suspect fractures, reasons for splinting, splinting equipment and its use. Demonstration.

**Spinal fractures and head injuries (1-hour lecture and 4-hour laboratory practice in dressings, bandaging, and splinting)**—Danger of spinal fractures; reasons for protecting the spine against movements; extrication, including use of backboards; dressings, and splinting prior to movement. Significance of head injuries, including handling of the unconscious accident victim.

**Chest, abdominal, special organ injuries (2 hours)**—Care of eye injuries, protective dressing, care of thoracic cage injuries, including fractures, crushed chest, flail chest, and sucking wounds. Care of evisceration and blast injuries of the abdomen. Protection of

genitalia and transportation of avulsed genitalia parts.

**Wounds, burns, environmental injuries (1-hour lecture, 1-hour laboratory)**—Soft tissue injuries; thermal, electrical, and radiation injuries. Practice dressings, wounds, burns, and special injuries.

**Acute medical problems (3-hour lecture and demonstration)**—Stroke, diabetes, contagious disease, allergic reactions, convulsive disorders, unruly patient, nosebleed, poisonings, exposure to heat and cold, heart failure, pulmonary edema, emphysema, and unconscious states.

**Emergency obstetrics and care of infants (1-hour lecture, 1-hour laboratory)**—Physiology of childbirth; how to deliver infant, protecting it and the mother; ligation of the cord; afterbirth; care of infant, including transportation of the premature infant. Film.

**Movement of patients (1 hour)**—Lifts, carries; use of litters, stretchers, including difficult movement of patients. Presentation and demonstration. In-hospital training sessions.

**Extrication (1 hour)**—Surgical principles, presentation and demonstration.

**Practice session (2 hours)**—Lifts, carries; use of litters, stretchers, including difficult movement of patients. Extrication, including care of patient, dressing, bandaging, and splinting prior to movement.

**Examination (1 hour)**—Written and practical.



*Students carefully secure "victim" to stretcher before moving from area*

They turned around and headed back to the Santa Fe hospital where they were met by a physician at the emergency room entrance. The physician performed an emergency tracheotomy on the boy. Once his condition stabilized, he was transferred by ambulance the rest of the way to Albuquerque where he received treatment for the other injuries, and he is alive today.

There are other examples of how RMP-trained graduates have prevented death and disability. Sanford D. Chandler, a school teacher and part-time employee of a funeral home and ambulance service in Carlsbad, N. Mex., was camping with young boys from a Baptist church organization. One 15-year-old was standing on the top of a high ledge throwing rocks into a gorge when he lost his balance and fell 30 feet. He was knocked unconscious, had various bruises and lacerations and a fractured femur.

Chandler, who had taken the ambulance drivers course in Las Vegas, devised a stretcher and stabilizer by using a large piece of plywood from the back of his camper truck. With pillows and blankets around the leg to steady it on the plywood, the boy was transported 65 miles over rutty unpaved roads to a hospital. The boy is fine, but had he been improperly moved he may have lost a leg.

A member of a road crew was buried in a cave-in accident which occurred between Embudo and Taos, N. Mex. The man was not breathing when he was uncovered. An RMP-trained State trooper gave him mouth-to-mouth resuscitation until his breathing resumed.

In Grants, N. Mex., another trained State patrolman encountered the victim of a highway accident, who had a gearshift lever through his belly. The patrolman did not try to remove the gearshift, but carefully transported the victim to the hospital, and the man survived.

Lt. James Boyce of the Artesia, N. Mex., Fire Department and Ambulance Service completed the 40-hour course in Las Vegas. When examining a worker who had fallen off the back of a lumber truck, Boyce determined that the man had little movement in his left arm and left leg. Boyce



*Student and teammate practice mouth-to-mouth resuscitation on manikin*

immediately suspected a neck injury and kept the man immobile on a stretcher until he got him to the small Artesia hospital 4 miles away. There the diagnosis of a neck injury was confirmed—the third and fourth vertebrae were broken. Boyce then had to keep the injured worker immobile while he drove him 180 miles to a Lubbock, Tex., hospital where he could be treated.

An Albuquerque policeman put his RMP training to work when he gave mouth-to-mouth resuscitation to a boy who had stopped breathing because of an overdose at a drug party. He saved the boy's life.

An elderly man in Carlsbad is alive today partly because a trained ambulance driver knew how to give external heart massage compressions. The ambulance service of a funeral home was called to his home when the old man became comatose. He was taken to a hospital, and the diagnosis was a heart attack. A physician ordered X-rays, but when the patient was placed in a sitting position for a posterior-anterior X-ray, his breathing became labored. When he was laid on a cot, he ceased breathing and his heart stopped. The ambulance driver gave him external heart massage compressions and his breathing resumed.

The attitude toward graduates of the RMP training courses is summed up by the statement of

an official of the funeral home. "The striking thing about all this is not so much that the life was saved or that we were responsible, but that no fuss was made about the whole episode.

"The doctor and hospital staff considered it as routine as we did. It is common knowledge that our men are trained for this sort of thing and it was taken for granted by all that we knew what to do and would do it."

In turn, students evaluating the course have recognized their increased skill and job knowledge, increased confidence in ability to perform official duties in a more effective and professional manner, and increased personal pride in their work.

### Plans to Reinforce Training

Dr. Irvin E. Hendryson, who heads the RMP emergency medical services training program in New Mexico, is also chairman of the American Medical Association's Commission on Emergency Medical Services. He is working toward a long range goal of training all emergency personnel in New Mexico to qualify as emergency medical technicians. In 1972, Hendryson plans to follow up the 40-hour training courses with 1-day refresher seminars and conferences which will be held periodically in communities throughout the State.

*Jim Boyce (right) gingerly lifts manikin as RMP instructor Beckman (left) shows proper technique*

