

Texas EMS

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COVER PHOTO:
Amarillo's Scott Trunkhill won the recent EMS Photo Contest, black and white category, with this photo.

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Educators reject additional hours

From This Side

The Texas Emergency Medical Services Advisory Council recently took what I feel was a giant step into the future of emergency medical service education. Their actions were in regard to a complete set of new proposed rules for EMS education. While the majority of these draft rules were editorial changes there were some major controversial points. The major controversy revolved around recommended increases in the number of training hours for initial EMS training and also an increase in the number of hours for continuing education. After much discussion TEMSAC decided to pass the majority of the proposed rules from their Education Committee, but to reject the three controversial rules. The rejected rules were: EMS Training Program and Course Approval, EMS Refresher Courses and Course Approval, and Continuing Education.

The exciting factor from TEMSAC regarding these education rules was some of the discussion regarding their future plans. There seemed to be some agreement among the members that adding hours to EMS training courses was not necessarily the best solution to some of the educational problems. They further discussed some potential new programs such as accreditation of educational programs and competency based education for emergency medical service. Some of these new programs have been discussed in the past but never in a serious fashion. We hope that in the future our Bureau staff here can work with the members of TEMSAC to develop a master plan for our EMS educational system that contains some new and innovative solutions.

The Trauma Technical Advisory Committee recently hosted a meeting with representatives of twenty-four organizations committed to the care of trauma patients in Texas. Ray Mason, chairman of the Trauma Technical Advisory Committee, has explained trauma systems as the process that insures that the right patients get to the right hospital within the right amount of time. As this committee

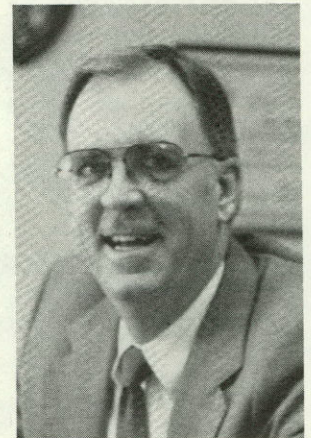
develops a trauma designation system for our state, local emergency medical service will be one of the major benefactors. Within a trauma system it will provide a much improved and organized transport system for EMS. By designating facilities and developing regional trauma treatment protocols, local emergency medical service can more efficiently serve their areas.

We need to publicly thank Laerdal Medical Corporation and California Medical Products, Inc. Recently we experienced a medical emergency in our office here at the health department. Since that time we have been working to develop a first responder team and to secure some first aid equipment. Ron Zaring with Laerdal Corporation was extremely helpful in assisting us to put together equipment for our team. We really appreciate Ron's assistance and technical advice. We also want to thank Mark BeDell of California Medical Products for assisting us to secure a suction device for our first responder program.

It was recently reported in a newsletter of the National Association of Emergency Medical Technicians that the Department of Transportation is requiring the contractor for the new EMT curriculum to do a complete job analysis for the EMT. This job analysis is supposed to:

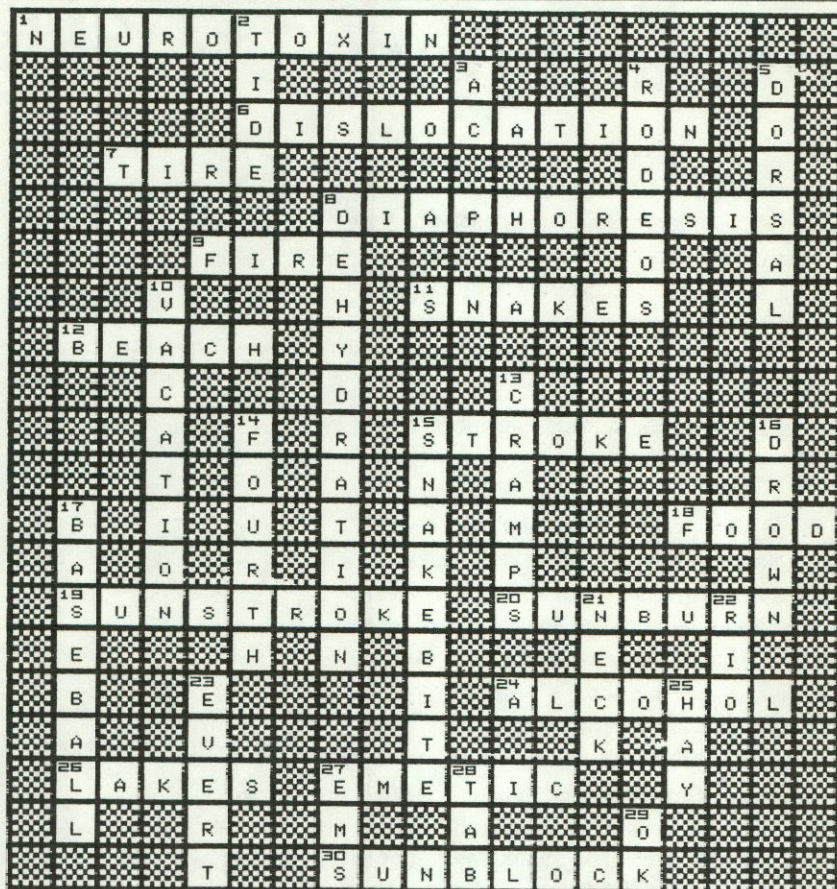
1. Determine exactly what activities and responsibilities are common to EMTs across the country.
2. Identify the knowledge and skills an EMT must have to effectively perform the duties of an EMT.

Since in Texas the legislature has decided that the Emergency Care Attendant will staff emergency ambulances, perhaps before we make changes to the curriculum of the ECA training program we should follow the lead of the Department of Transportation and perform a job analysis. Then we can make changes to the curriculum based on documented facts and related directly to job performance.



*Gene Weatherall
Chief
Bureau of
Emergency
Management*

Local and Regional EMS News



Albany, LaPorte EMTs win crossword puzzle drawing

Rick Tarver, an EMT from LaPorte who works for DuPont, and Rose Henry, an Albany EMS EMT, won complimentary registrations to the Texas EMS Conference in our crossword puzzle contest last month. Everyone who entered the contest managed to work through our clue that confused "hypothermia" and "hyperthermia," and we were generous with the answers to the clue "damages nerves." "Neurotoxins" was our answer, your answers included "exhaustion" and "heatstroke," which actually are more Summer Heat oriented. And they fit. Congratulations to all who submitted puzzles. Thanks for playing.

Fort Worth firefighters cross-trained

All 700 Fort Worth firefighters will soon be certified as CPR instructors, according to Fort Worth fire academy EMS instructor Charlie Johnson. Johnson is training twelve firefighters a day as CPR instructors and estimates that the training will be completed within the next three months. The instructor certification makes it possible for fire personnel to teach CPR classes to the public. Fort Worth Fire Department is first responder for MedStar, the local EMS service, and all firefighters are certified as EMTs.

Russell Black Scholarship Fund established

An educational fund has been established as a memorial to Russell Black, a 26-year-old paramedic and EMS instructor who died on August 4. The fund will benefit minority and other deserving students applying to EMS and other medical fields of study. Contributions may be made to Russell Black Scholarship Fund, c/o Lifeline Ambulance, P.O. Box 90368, Austin, Texas 78709-0368.

Black was an instructor at Austin Community College. His mother, Maxine Black, is the past president of Region 6 Texas Association of EMTs.

Texas EMS Registry

State Summary of EMS Personnel As of July 23, 1990

	ECA	EMT	EMT-I	Paramedic	Total
Non-EMS	4,435	9,161	541	1,191	15,328
EMS	5,906	12,091	1,640	4,998	24,635
Total	10,341	21,252	2,181	6,189	39,963

Non EMS individuals are not associated with an EMS organization; examples are trainers, citizens, wellness staff, corporations, school nurses, some government agencies.

EMS individuals are either paid or volunteer staff of an EMS organization or EMS first responder group.

1,866 individuals were added to the Texas EMS Registry in June, 1990. In the first ten months of FY90, 11,734 people were registered - an increase of 26% over the same time last year.

Texas EMS Registry is a program of the Texas Department of Health, Bureau of Emergency Management. Staff members are Pam Price, Program Administrator; Susan Kollath and Calvin Blackman, program specialists; Mattie Larry and Lovie Walker, administrative staff.

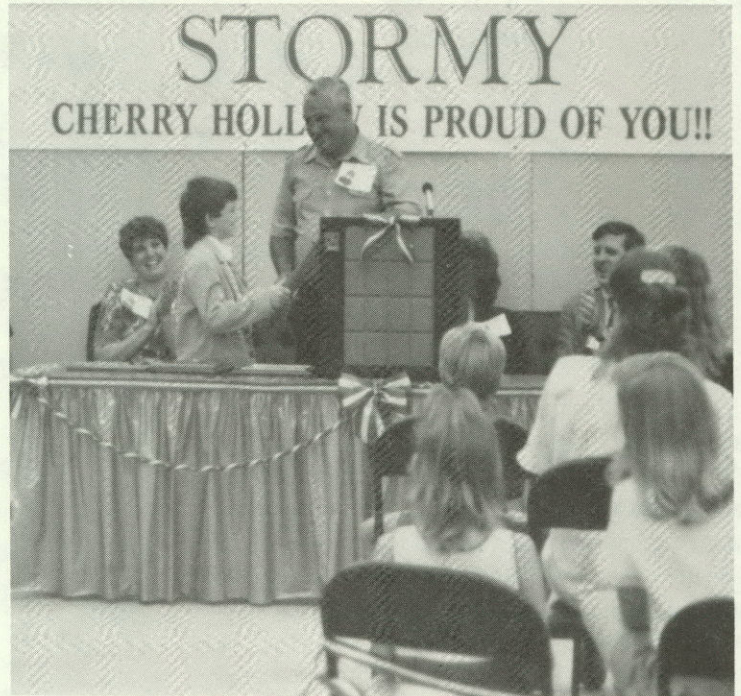
Local and Regional EMS News

10-year-old rescues victim of diving accident

Jimmy "Stormy" Bennett, Jr., a resident of Cherry Hollow in Travis County, swam into water over his head in the East Bernard River in Montgomery County this summer to save a family friend, 31-year-old Randy Howard. Howard, a military recruiter, had injured his neck in a dive and was unable to swim to shore.

In a community ceremony honoring young Stormy on August 1, Howard told local, county, and state representatives present that he owed his life to Stormy, and he told Stormy during the ceremony that there was not enough that he could do to repay the young man for his quick action.

Cherry Hollow residents Beverly Patton and Gale Couchman organized an Open House and Awards Ceremony for Stormy which included recognition from the Travis County Commissioner's Court, Travis County Sheriff's Department, Governor William Clements, Texas Department of Health, Leander Independent School District, Sandy Creek Volunteer Fire Department, and the Cherry Hollow Community.



Treasure Hunters and CPR

As an EMT-I and CPR Instructor, I am alert to achievements for EMS by the "layman." Charles Garrett of Garland, Texas is one of those "laymen" who has gone the extra mile. For those of you who have never dabbled in metal detecting or treasure hunting, Mr. Garrett is the owner of Garrett Metal Detectors and author of several good books, and some excellent videotapes. In 1988 he combined two interests, treasure hunting and the saving of human lives. The efforts of this man have to date saved four very valuable treasures.

The Garrett CPR Contest began in January 1988 and went through December 1988 when Mr. Garrett challenged metal detecting clubs across the United States to certify their members in CPR. He promised to give the first club that certified half its members the metal detector of its choice and copies of his books and videos. It gives me great pleasure to say that our fellow Texans led the pack in this contest. The East Texas Historical Research and Recovery Society

certified 63 percent of their members. They took all the prizes.

In speaking with Dick Stout of Garrett Metal Detectors, I learned there are approximately 150 clubs in the United States. Of the 150 clubs, sixty participated and thirty-two clubs certified 50 percent of their members.

I feel, as I am sure many other EMS people will, that Mr. Garrett deserves a big Texas pat on the back for his efforts to save lives. I would like to encourage the people at Garrett Metal Detectors and other businesses to continue or create more contests like this. There is no way to explain how wonderful it feels to have someone hug you and thank you for saving their life. It is a feeling that I want more people to share.

I know that I want one of those citizens that learned CPR to be with me in the event that I happen to find one of those rare gold coins because I'm going to need their help.

— Contributed by Sandra Hawkins who is an EMT-I with Citizens EMS in Clyde, Texas.

Protect Yourself

by Sherrie Wilson

It was a warm sunny day in August, unseasonably cool for Texas. The alarm went off at the station, and our fire unit was dispatched to assist with a medical emergency. The ambulance was responding from a distant location and their response would be another couple of minutes. We arrived, I stepped off the engine wondering what kind of problem our patient was having, and as soon as my feet hit the ground, a man appeared from the door and said "she's not breathing." Being the only paramedic on the engine, I ran to assess the patient while requesting the resuscitator from a co-worker.

I found an eighty-year-old female who had no pulse, no respirations, and a little bluing around the lips lying on the floor in the den. As I turned to look for my co-workers and equipment, I couldn't understand what was taking them so long. The few seconds I waited seemed endless. I turned to my patient and, without another thought, I opened her airway and delivered a couple of breaths, mouth-to-mouth.

As a paramedic, firefighter, EMS instructor, and American Heart Association Faculty, I have discussed and taught the legal and moral ramifications of CPR and mouth-to-mouth many times. Having performed mouth-to-mouth before in the field, I even felt satisfied with the decision I made. I wasn't prepared, however, to be inundated, criticized, or orally reprimanded for having performed a life-saving technique on another human being. This shows just how far the AIDS concern has come. I could have avoided delivering the breath of life a few more seconds and made everyone happy. But what about clinical death verses biological death? And what about dedication to doing the very best in the field? Why was I reaping grief for doing what I am dedicated to do?

Sherrie Wilson, a paramedic/firefighter with Dallas Fire Department, teaches EMS courses in the Dallas area. Wilson joined Dallas Fire Department in 1977 as its first female cadet and became Dallas' first female paramedic in 1979. She will teach workshops on trench rescue and personal power at the Texas Department of Health EMS Conference in September. Wilson was recently featured in an article about women in EMS in Emergency Medical Services magazine.

I spent many hours pondering the situation and my motivation. I discussed the problem with leaders and close friends who are in the EMS field and whose opinions I respect. There are many good arguments out there as to why one would and would not expose themselves to disease, but to come to a decision, I had to ask myself these questions: Where does my dedication to saving lives end and my commitment to my family and friends begin? How do I protect them while living with me should I contract a disease or, worse, how do I avoid taking it home to one of them?

The problem with EMS is we don't always see the involvement of disease, so we take extra precautions if available to us and make a personal decision if not.

For the first time in Dallas, we have had a health care worker document exposure and contract the deadly HIV virus.

The Dallas Fire Department has now issued individual mouth barriers to all employees. I carry a mouth barrier in my purse and bike bag, and I carry a bag-valve-mask in my vehicle first aid kit. The American Heart Association requires all instructors to teach the use of barriers as needed. As an instructor, I make mouth barriers available to students at the end of each CPR or first responder course. Mouth barriers are inexpensive, lightweight, and easy to use. Most importantly, I can fulfill my moral obligation to the citizens of this community without compromising my commitment to my family and friends.

As EMS personnel, we need to look ahead and make a decision as to our actions in situations such as the one I was faced with on that sunny August day. Being prepared is the best defense. As truly good medics, we can exercise good judgement and good patient care without sacrificing our commitment to family and friends.

AIDS Update in the AAOS Manual

The following pages are from **Emergency Care and Transportation of the Sick and Injured 4th ed.**, copyright American Academy of Orthopaedic Surgeons, 1987, and are reprinted with permission. These pages will be in the 1991 version of **Emergency Care and Transportation of the Sick and Injured**. They are not in the current version of the manual.

Acquired Immune Deficiency Syndrome

Acquired immune deficiency syndrome (AIDS) is caused by the human immunodeficiency virus (HIV), which was discovered in 1983. HIV attacks and destroys certain white blood cells of the immune system, the T4 lymphocytes. The loss of these cells makes the HIV-infected individual prone to further infection by organisms which do not commonly cause disease in humans (opportunistic infections). The virus does not survive outside of the body in sufficient numbers to cause infection and is easily killed by drying and most commonly used disinfectants.

Epidemiologic studies since 1981 have shown that HIV is transmitted by direct contact with HIV-infected blood, semen, or vaginal secretions; it can also be transmitted across the placenta to offspring of HIV-infected mothers. In addition, it is likely that cerebrospinal, pericardial, joint, and amniotic fluids are capable of transmitting HIV infection. There is no scientific documentation that HIV infection is caused by contact with tears, sweat, saliva, sputum, urine, feces, vomitus, or nasal secretions, *unless* those fluids contain grossly visible blood. AIDS is *not* transmitted by handshaking, kissing, toilet seats, telephones, hot tubs, swimming pools, or mosquitoes. It is possible, but unlikely, that a human bite could transmit HIV infection. However, the Centers for Disease Control (CDC) advises EMTs who come in contact with body fluids in situations where distinguishing fluid types is difficult to "treat all body fluids as potentially hazardous."

AIDS is clinically described in stages, depending on how the immune system is affected by the disease. Once HIV infection has occurred, the body begins to produce antibodies to the virus. These antibodies can be detected by the ELISA blood test 6 to 12 weeks after infection. In some cases, the ELISA test is incorrectly positive for HIV infection: a false-positive. Therefore, a positive ELISA test should be confirmed by another test, the Western Blot Test. Another test, an antigen test, is designed to directly detect the virus and is pending FDA approval. Combined with the ELISA and Western Blot tests, this antigen test should yield more conclusive information.

The CDC has divided HIV infection into four clinical classes:

- Group 1 Acute Infection:** Individuals experience a flu-like illness and the ELISA and Western Blot tests subsequently become positive ("sero-positive");
- Group 2 Asymptomatic Infection:** Individuals are "sero-positive" and have changes in T4 cell counts;
- Group 3 Persistent Generalized Lymphadenopathy:** Patients have swollen lymph glands at two or more sites which persist for more than three months; and
- Group 4 Other Illnesses:** Patients experience one or more of the following: mental disorientation (dementia), muscle wasting and weakness (myelopathy), peripheral nerve numbness and weakness (neuropathy), fever, and/or diarrhea for more than one month, and/or more than 10 percent weight loss.

Over 95 percent of all AIDS cases are found among intravenous (IV) drug users who share needles, homosexual and bisexual men, and sexual partners of HIV-infected persons. Other high-risk groups are hemophiliacs, those who have received transfusions of HIV-contaminated blood, and those born to HIV-infected mothers. According to the CDC's statistics on health care workers exposed to AIDS, the maximum chance of contracting HIV infection from a known AIDS patient by occupational exposure (needle stick) to blood is 0.5 percent. As of May 1989, only one paramedic has become HIV infected as a result of occupational exposure; that case

is listed in the "undetermined" risk category by the CDC. EMTs who observe the CDC's recommended "Universal Blood and Body Fluid Precautions" for infection control are at minimal risk. However, a completely risk-free environment is impossible.

Universal Precautions is a new concept in health care and infection control. It stresses that all patients should be assumed to be infectious for HIV and other blood-borne disease-causing organisms (pathogens). The precautions include:

1. Wear gloves when handling all patients. When cleaning contaminated equipment, general-purpose utility gloves (e.g., rubber household gloves) are recommended. Heavy leather or "bunker gloves" are recommended for use where broken glass and sharp edges are likely to be encountered, such as when extricating persons from automobile accidents.
2. Wear protective eyewear and mask when body fluid splatter is anticipated.
3. Do not recap, cut, or bend used needles; place them directly into a puncture-resistant container designed for "sharps."
4. Follow cleaning and infection control protocols closely.
5. Wear gowns when uniforms may become extensively soiled with body fluids.
6. Change contaminated clothes and wash exposed skin thoroughly.
7. Use face shields, pocket masks, or other airway adjuncts.
8. Wash hands following glove removal as a means of self-protection. Change gloves between patients.

If contact with a patient's high-risk body fluids occurs on an unprotected area of the body, inform the responsible medical authority and follow appropriate local protocols. These protocols should include: (1) submitting an incident report; (2) notifying the appropriate medical advisor; (3) obtaining counseling for the pre-HIV test and informed consent for baseline testing; (4) retesting at 6 weeks, 12 weeks, and 6 months; and (5) obtaining post-test counseling.

The most problematic aspect of this disease is that there are no outward markers. A patient with AIDS looks no different than any other patient suf-

fering from a chronic debilitating illness. The EMT cannot discriminate against any patient, because to delay or refuse care is not only unethical but is gross negligence, abandonment, and malpractice. With Universal Precautions, there should be little fear of increased risk in caring for HIV-infected patients.

ACTUAL RISK AND PREVENTION PROCEDURES

Consideration of the hepatitis virus and HIV clearly leads one to the conclusion that exposure to blood puts the EMT at risk. The importance of hand-washing and careful handling of blood-related problems cannot be overemphasized. Blood-contaminated equipment and work areas should be cleaned as a first step in infection control. Blood-covered areas should be cleaned with a fresh solution of one part bleach to 100 parts water (1:100). Gloves should always be worn during cleaning.

TABLE 34.2 Common Childhood Diseases

Disease	Signs and Symptoms	Mode of Transmission
Bacterial Meningitis	fever, severe headache, stiff neck, sore throat	direct contact with oral, nasal secretions
Chickenpox (Varicella)	fever, rash, cutaneous vesicles	airborne, direct contact with vesicle drainage
German Measles (Rubella)	fever, rash	airborne, direct contact with oral secretions
Hepatitis A	fever, loss of appetite, jaundice, fatigue	direct contact with urine, stool, or oral ingestion of virus
Measles (Rubeola)	fever, rash, bronchitis	airborne, direct contact with secretions
Mumps	fever, swelling of salivary glands (parotid)	airborne, direct contact with saliva
Whooping Cough (Pertussis)	violent cough at night, whooping sound when cough subsides	airborne, direct contact with oral secretions
Scarlet Fever	fever, headache, nausea, vomiting	airborne, direct contact with oral secretions

TABLE 34.3 Common Adult Diseases

Disease	Signs and Symptoms	Mode of Transmission
AIDS	fever, night sweats, weight loss, cough	sexual contact, blood, needles
Gonorrhea	discharge from urethra or vagina, lower abdominal pain, fever	sexual contact
Hepatitis B	fever, fatigue, loss of appetite, nausea, headache, jaundice	blood, oral secretions, sexual contact
Hepatitis Non A-Non B	fever, headache, fatigue, jaundice	blood
Malaria	cyclic fever, chills, fever	blood-mosquito vector
Mononucleosis	fever, sore throat, fatigue	mouth-to-mouth kiss
Pneumonia	fever, cough	airborne
Syphilis	genital and cutaneous lesions, nerve degeneration (late)	sexual contact, blood
Tuberculosis	fever, night sweats, weight loss, cough	airborne

Routine rescue vehicle cleaning is an essential part of the prevention and control of infectious/communicable disease. Cleaning will remove surface organisms and should be accomplished after each run and on a daily basis. "High contact areas" are those which were in direct contact with the patient's blood/body fluids or those which the EMT touched after contact with the patient. These areas must be cleaned after each run.

Cleaning solutions recommended by the CDC are either an Environmental Protection Agency (EPA)-approved germicide which is effective against the tuberculosis (TB) bacterium or a 1:100 solution of household bleach. Avoid the use of aerosol spray products. A solution in a bucket or a pistol-grip spray bottle is recommended. Alcohol is not a recommended cleaning solution.

Contaminated disposables (paper sheets, needles, dressings, and other infectious waste) should be handled in strict accordance with local health department procedures. Hospital infection control personnel or the local medical director should be consulted, and written protocols should be followed. EMTs should be aware of the local infection control regulations and procedures.

Handwashing is extremely important. It should be completed as soon as practical. While it is recommended that a waterless antiseptic hand cleanser should be kept on responding units to use when handwashing facilities are not available, handwashing with soap and water should be accomplished as soon as practical after every patient contact.

Knowledge of disease processes and the consistent following of infection control protocols remain the best defenses for the EMT against communicable disease. Tables 34.2 and 34.3 summarize this information for common childhood and adult diseases.

YOU ARE THE EMT . . .

1. Malaria is a vector-borne disease that is transmitted to humans by mosquitoes. Identify three other modes of transmission of communicable diseases. Give an example of a disease spread by each mode.
2. You have just suffered a needle stick injury in the field. What should you do?
3. You just found out that one of the patients you transported yesterday has serum hepatitis. You're not worried, though, because you have followed all the steps to protect against exposure. What are they?
4. AIDS is not only a serious disease; it is also a controversial social issue that is at the forefront of media attention. What are the *facts* concerning the mode of transmission of this disease? How can you protect yourself against infection from an AIDS patient?

HIV/AIDS Workplace Policies, A Requirement for EMS Providers

The Texas Board of Health has proposed new rule 97.21 regarding Model Policies for the Handling, Care and Treatment of HIV/AIDS Infected Persons under the Supervision of Emergency Medical Services.

Local policies must include periodic education of each employee concerning HIV infection and infection control procedures and supplies, and include provisions for the transport of HIV/AIDS persons, personnel with HIV/AIDS, occupational exposure to a communicable disease and documentation that personnel have been informed of the confidentiality policy and that failure to adhere to the policy may result in both criminal and civil liability. HIV/AIDS education must be based on current, accurate scientific information provided by the United States Department of Health and Human Services, United States Public Health Service, Centers for Disease Control, United States Surgeon General, Texas Department of Health or other recognized authorities on public health.

The EMS Provider Licensing rules

require that all EMS vehicles be equipped with one box of latex gloves and two pair of protective goggles. In addition, ALS and MICU vehicles shall carry puncture proof containers for the disposal of sharps.

A curriculum for the education of employees, titled **A Curriculum Guide for Public-Safety and Emergency-Response Workers, Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus**, February, 1989, is available free of charge from the National Institute of Occupational Safety and Health at (513) 533-8287 in Cincinnati Ohio.

Guidelines which supplement the curriculum, titled **Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Health-Care and Public-Safety Workers** Stock number 4-166, is available free of charge from the Texas Department of Health, Warehouse, 1100 West 49th, Austin, Texas 78759-3199.

Copies of the proposed rule are available from the Public Health Region EMS Offices.

Although there has been no documented transmission of HIV/AIDS through saliva, many other diseases are transmitted through saliva: chick- en pox, diptheria, Haemophilus influenza infection, influenza and flu-like illnesses, meningitis, meningococcal infections, mumps, pertussis, polio, psittacosis, Q fever (pneumonia), rabies, rubella, and tuberculosis.

Universal Precautions recommend the use of a pocket mask or similar device in mouth-to-mouth resuscitation.

Health Officials Recommend Flu Shots for Health Care Workers

Although flu season is a few months away, officials at the Texas Department of Health are issuing an early reminder for health and medical workers to protect themselves and their high risk patients from this potentially deadly disease.

"Influenza kills about 20,000 individuals in the United States each year - most of them in high-risk categories," said Robert D. Crider, Jr., director of TDH's immunization division. "Fewer than 30 percent of Americans in high-risk groups receive the recommended annual injections of influenza vaccine," he added.

Those with increased risk for influenza-related complications are:

- Persons 65 years old and older.
- Residents of nursing homes and other facilities treating chronically ill patients of any age.
- Adults and children with chronic disorders of the pulmonary or cardiovascular systems, including children with asthma.
- Adults and children who have required regular medical follow-up or hospitalization

during the preceding year because of chronic metabolic diseases, renal dysfunction, hemoglobinopathies or immunosuppression.

- Children and teens (6 months to 18 years old) who are receiving long-term aspirin therapy and therefore may be at risk of developing Reye syndrome after influenza.

"We are asking administrators of all health-care facilities and agencies to take the extra effort to help make this winter a light flu season. They should start by offering the vaccine to all their staffs-especially those who care for high-risk patients."

Influenza vaccine, made from egg-grown viruses that have been inactivated, must be tailor-made to match the influenza viruses believed likely to circulate in the upcoming winter. The vaccine for the 1990-91 season will include A/Taiwan/1/86-like(H1N1), A/Shanghai/16/89-like (H3N2) and B/Yamagata/16/88-like antigens.

Annual vaccination is necessary because immunity declines with time. Because the vaccines differ from year to year, only the vaccine for the current season should be used.

Did You Read?

...in the June 1990 issue of **Emergency** where Arcadian Ambulance Service out of Lafayette, Louisiana has purchased a hot air balloon to be used as a moveable billboard for the company? In addition to being used as a marketing device for Arcadian, it will be available for community fund raising projects. The balloon is staffed by licensed pilots.

...in the same publication where the NAEMT has approved a position statement on the "Role of the Registered Nurse in the Prehospital Environment?" The NAEMT does not support any process whereby R.N.s can circumvent the educational process of the EMT nor the Paramedic. Copies of the statement are available by writing to the NAEMT headquarters, 9140 Ward Parkway, Kansas City, Mo., 64114 or you can call 1-816-444-3500.

...the quote at the end of the article in the May 1990 issue of **Emergency Medical Services**, titled "The Other Side of Terror?" The article was written by a New York Police Department officer, Stuart Goldstein, who is also an EMT, and is the story of EMS assistance to Goldstein's own father who died of a heart attack. At the end of the article Officer Goldstein says, "To live and let live is good. Live and help live is better."

...in the Spring issue of **Currents in Emergency Cardiac Care** about Rapid Zap? This is a program developed by Dennis Murphy of the Springfield, Oregon Fire Department. The goal of the program is to ensure that all fire equipment in the country is equipped with a defibrillator. This, says Murphy, will improve the service to the community, as well as protect the firemen, as almost 40% of the firefighter fatalities are due to heart attacks.

...the article, "Trauma Care in the Elderly," in the April 1990 issue of **Emergency Medical Services**? The author, Margaret Knudson, M.D., FACS, made this statement: "Geriatric patients who arrive with blood pressure in the normal range may actually be in shock if they are accustomed to hypertension."

...and in the same publication about rescuing persons from air bag equipped GM cars in an accident where the air bag was not deployed? General Motors has a complete pamphlet on the procedure. The pamphlet is titled, "Air Bags in GM Cars in Emergency Rescue Situations." It was produced by GM Service Technology Group, GM Public Relations, April, 1990.

...in the June/July 1990 issue of the **Communicator**, published by Eastern New Mexico Region III EMS, that the Food and Drug Administration tested over 300 samples of rubber gloves? They found that between 14% and 18% of the examination gloves tested had defects. Surgical gloves had between 3% and 16% defects. These defects expose the wearer to such viruses as HIV.

...in the July 1990 issue of **Emergency Magazine** where pharmacist and author David B. Levy stated in his article, "Naloxone: Negating Narcotics" states, "Across the country, urban EMS systems are encountering heroin and other narcotic overdoses on a routine basis."? Levy feels that Naloxone can be used to counteract narcotics through its displacement of narcotics in brain receptors and as a diagnostic tool for unconscious patients, where the cause of their unconsciousness is unknown.

...and in the same publication in the article, "A Vested Interest in Safety" by Jeffrey Goldstein, EMT-P, of Washington D.C.'s Fire Department? 85% of the 27 cities surveyed across the country have EMS personnel who wear soft body armor. Twenty-five percent of those 27 cities issue soft body armor.

...in the June 1990 issue of **EMS Insider** where Veteran's Memorial Hospital and Meriden-Wallingford Hospital, both located in Meriden-Wallingford, Connecticut are requiring the ED nurses to ride out on ambulances on an occasional basis? They're also trying to get the ED docs to do the same. Hospitals, nurses and paramedics say that the experience is beneficial.

Geriatric patients who arrive with blood pressure in the normal range may actually be in shock.

Across the country, urban EMS systems are encountering heroin and other narcotic overdoses on a routine basis.

85% of the 27 cities surveyed across the country have EMS personnel who wear soft body armor.

Continuing Education

Who says it has to be difficult?

By Rick Murray

Those of us who were involved in EMS during the years before continuing education training was recognized, remember all too well sitting through a refresher class once every two years. Many times this was the only chance we had to really step back and review our skills performance. We often did not realize how much information we had forgotten until we were handed the dreaded course pre-test on the first night of class.

Many field personnel operate under the assumption that once they have completed their training course, they are free to go out and practice their trade for four years without ever opening a book or returning to a classroom. Those of us who are involved in EMS education know all too well that field personnel cannot remain competent by just reviewing the information every four years. Studies have shown a steady decline in both skill and didactic knowledge occurs as soon as six months after completion of a training course. This is where continuing education can play a vital role in knowledge retention.

The theory behind continuing education is to provide information on a continuing basis thereby stabilizing the knowledge base between refresher classes. Therefore, continuing education should not be viewed as a replacement for formalized classroom training, but as a supplement to the training program.

Those who argue against the benefits of continuing education often compare the written or skills exam results of students who have not had continuing education. It should

not be surprising that similar exam results occur for those without continuing education as they have just completed a comprehensive review of the material before testing. The real test would be to compare knowledge levels before students completed a refresher course or at any time during their certification period.

Granted, continuing education programs will not be effective unless they are closely controlled and monitored. But the benefits are clearly evident where there is structured monthly training combined with formal classroom instruction. The majority of the problems cited with continuing education appears to be with the manner in which it is regulated and not with the idea itself. Efforts to correct the problems should be aimed at the problem areas and not by eliminating the program.

The Arlington Fire Department began such a program of providing monthly continuing education in April of 1988. Prior to this we relied totally on offering a refresher course to our EMTs and paramedics once every two years. The positive results of continuing education programs had been demonstrated by other professions and was rapidly becoming a requirement in the fire service.

Beginning a continuing education program for your department can really be a simple and inexpensive project. If you have access to any one of the EMT textbooks or an EMS magazine subscription, you are well on your way to developing a continuing education program. As we designed our EMS continuing

Rick Murray, a paramedic, is the training coordinator for Arlington Fire Department

education program, we decided to offer both structured monthly training and a formal refresher class to obtain benefits associated with each. Our program is centered around a four segment C.E. program which is followed by a 40 hour refresher course.

A monthly continuing education assignment is provided to each of Arlington's 14 fire stations outlining the activities for the month. The monthly assignment is divided into three separate parts that provide one half hour of credit each. These three parts are: Reading Assignment, EMS Training Film, and EMS Class.

Reading Assignment

Each fire station receives a copy of the **Journal of Emergency Medical Services, JEMS**. Articles are selected for assigned reading and personnel may choose a given number of the assigned articles to read. This allows personnel to pursue topics of personal interest or those providing information on an area in which they may feel weak.

EMS Training Film

Each fire station is connected to our training academy through a closed circuit television network. This allows training classes or films to be broadcast simultaneously to all 14 fire stations. Each month a film from the **Emergency Medical Update** series or one from our film library is broadcast for viewing. To allow for vacations, emergency responses, or other activities, films are broadcast on at least three days for each shift and repeated 7 times during the shift. In addition, special classes are broadcast for topics of a timely nature such as: revised burn treatment protocols, infectious disease procedures, and new equipment orientation.

EMS Class

Each month, a chapter from the text **Emergency Care** by Brady is assigned for review. A person is chosen by each station to present a class to his shift. The review includes the objectives for the assigned chapter as well as terminology and skills covered in the chapter.

Skill Sessions

An additional segment is being added in

the summer of 1990 that will cover skills exclusively. Each station will report to the fire training academy for a four hour skills class every six months. Topics will include skills practice, testing and review of any changes or new information.

This program can be provided for a surprisingly low cost and with a minimal amount of staff time to organize. The yearly cost for the **JEMS** and **Emergency Medical Update** subscriptions comes to approximately \$900.00. When divided by the number of personnel we train, our annual cost is only \$3.35 per person for 26 hours of continuing education from those two sources.

During an EMT's four year certification period, he will accumulate more than 104 hours of continuing education in addition to completing a 40-hour refresher course before State testing. We believe continuing education is critical for an EMS system from both a quality assurance and liability perspective. The money and time spent on training are well worth the effort when compared to the cost of one medical malpractice claim.

Emergency Medical Update video magazine is available through the TDH Film Library. Each module of videotape, outline, and exam earns one hour of CE. Contact the Film Library at (512) 458-7260 for video topics.

Contact TDH's EMS Education Program at (512) 458-7550 for more information on CE credit from **Emergency Medical Update**, **JEMS** magazine, and other EMS media available from TDH.

Arlington Fire Department EMS Continuing Education For the month of July 1990

I. Reading Assignment: read any 5 of the following articles from the May 1990 issue of **JEMS**.

- | | |
|-------------------------------|--------------------------------------|
| 1. Inside EMS pp. 14-19 | 5. Cellular Technology p. 46 |
| 2. Current Research pp. 20-22 | 6. EMS Enters the 21st century p. 59 |
| 3. Vital Signs p. 26 | 7. Clinical Q & A pp. 73-76 |
| 4. Documentation p. 31 | 8. Teacher Talk pp. 87-90 |

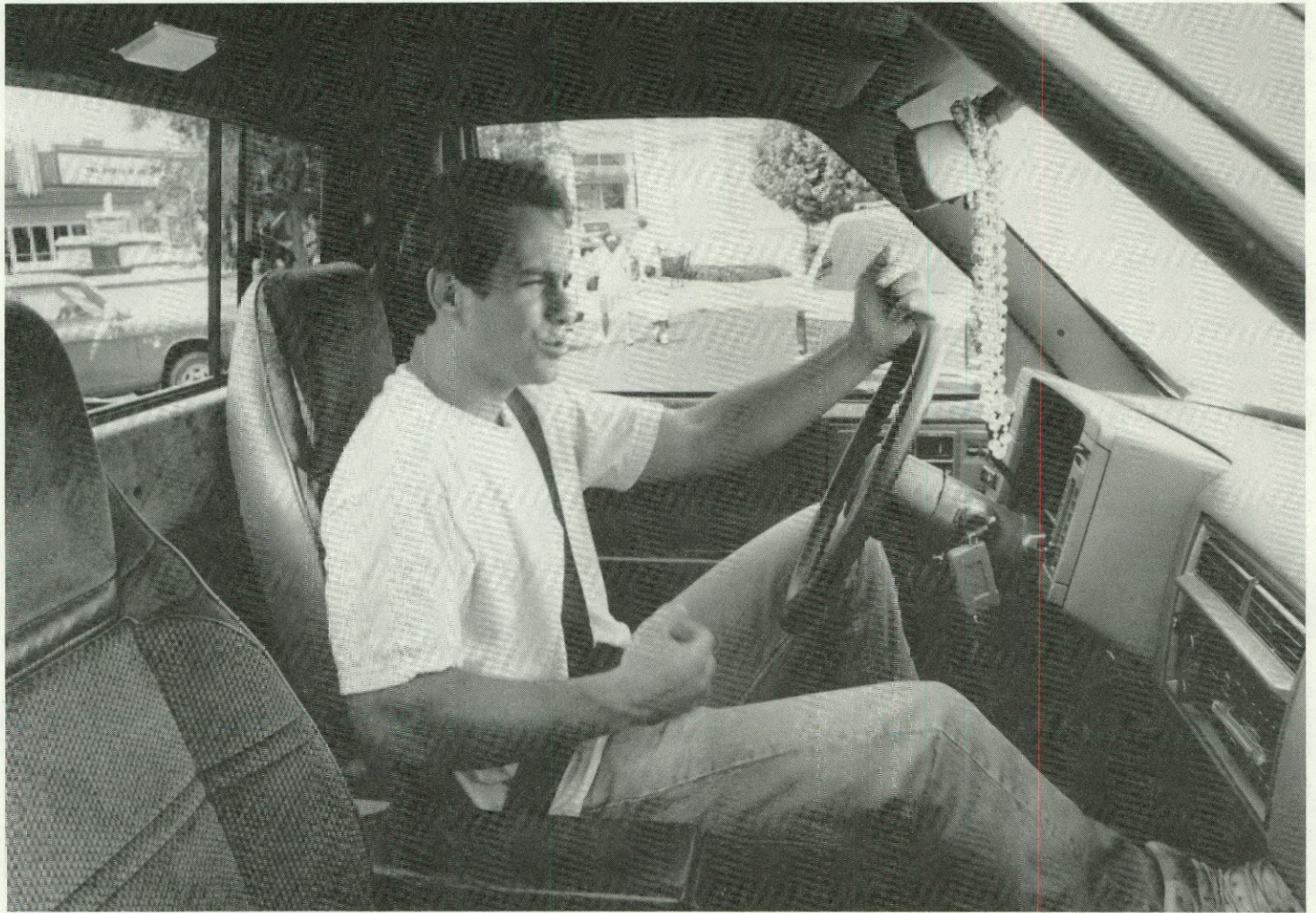
II. EMS Training Film: **Emergency Medical Update** - Volume III, Number IV View the training film on B-Cable during one of the following dates:

- A-Shift - July 9, 12, 24, 27
- B-Shift - July 10, 13, 25
- C-Shift - July 11, 23, 26

Broadcast times: 0900, 1000, 1100, 1300, 1400, 1500, 1600

III. EMS Class: Complete the following textbook assignments: **Emergency Care**, 4th Edition, Chapter 27 - Communications and Reports, Answer the objectives listed on page 545.

Total Continuing Education Hours for the month: 1 1/2



Dave Careless, the driver who plays along with the radio and speeds up with the music, is just one target of the State Department of Highways and Public Transportation's new traffic safety campaign. The highway department identified high-risk drivers for this campaign as men between the ages of 16 and 30. Thirty-three percent of all vehicle crashes involve this group, with crashes peaking for 18 and 19-year-olds. DWI, unsafe speeds, and failure to wear seatbelts are the leading causes of traffic deaths in Texas. Drive safely. Don't wreck your life.

TEMSAC adhoc Committee on Licensure

Have an opinion on licensure? Send it to:

Tommy Nations, Chair
217 West McKinney Street
Denton, Texas 76201

Leslie Madden
Route 2 Box 2010 A
Boerne, Texas 78006

Guinn Burks
606 22nd Street
Crane, Texas 79731

Nancy Polunsky
2708 Briargrove Lane
San Angelo, Texas 76904

Want to be a consultant to the Licensure Committee? Send your letter of interest and resume to: Bureau of Emergency Management, Texas Department of Health, 1100 West 49th, Austin, TX 78756-3199.

For more information call Harold Broadbent at (512) 458-7550.

T E M S A C

Texas EMS Advisory Council tables action on increased hours

Controversy surrounding hours required for EMS certification courses caused the Texas EMS Advisory Council to table action on several proposed certification rules during the council's August 17 meeting in Austin.

As the state EMS council considered recommendations from the educators committee, which had met all day the previous day to come to agreement on rule proposals, TEMSAC chair David Prentice, M.D., asked Houston Community College's Joe Tyson, head of the educators committee, to identify in the proposals the areas of controversy. According to Tyson, the hotly debated issues included increasing the hours in the current Emergency Care Attendant and Emergency Medical Technician courses.

Also at issue, according to Tyson and other members of the educators committee, were new topic areas in the ECA course, required transports for EMT certification, and intubations for advanced certification.

The educators committee recommended to TEMSAC that all rules dealing with hours be discussed further before any action is recommended.

In other business, Prentice reported on the executive committee's legislative recommendations, appointed an adhoc committee on EMS licensure, and TEMSAC heard committee reports on public information and education and on paramedic testing.

Based on comments from the EMS public during the Legislative Forum this spring, TEMSAC's executive committee will recommend to the Board of Health's emergency and disaster committee legislative action on these issues: licensing of all EMS providers, including industry and transfers; confidentiality of EMS run records; funding for trauma; and erection of an EMS monument.

Prentice appointed an adhoc committee of advisory council members Tommy Nations, Leslie Madden, Nancy Polunsky, and Guinn Burks to consider the issue of licensing for EMS personnel. This issue is seen by some as licensure vs. certification and by others as lifetime testing vs. periodic re-testing. Members of the EMS public who want to serve as consultants to the adhoc committee should send a letter of interest and a resume to the Bureau of Emergency Management. The first meeting of the licensing adhoc committee will be in December. Prentice requested that comments on this issue be directed to licensing adhoc committee members.

Dr. Donovan Butter reported on the work of his two committees - paramedic test item review and paramedic exam review. Evaluation of the database items has been completed and work is beginning on setting knowledge objective priorities based on occupational relevance. Butter, who has received comments that the paramedic test is easier now, said that vagueness and confusion had been removed from the test and his committee would begin work on more challenging items.

At the public information and education committee's first meeting, chair Virginia Scott set two broad goals: to educate the EMS community about TEMSAC and the health department and to develop a source list of injury prevention programs that can be used by EMS personnel. Her committee proposed using tools such as orientation letters to newly registered EMS personnel, posters, and an audiovisual presentation.

The next meeting of TEMSAC is December 7 in Austin.

— Alana S. Mallard

- David Prentice, MD, Chair
Houston
James Atkins, MD
Dallas
Fidencio Barrera
Pharr
Gustavo Barrera
Falfurrias
R. Donovan Butter, DO
San Antonio
Guinn Burks
Crane
William Donahue
San Antonio
Fred Falkner
Fort Stockton
Barbara Gehring
El Paso
Joe Huffman
Dallas
Jay Johnson
Tulia
Leslie Madden
Boerne
Tommy Nations
Denton
Nancy Polunsky
San Angelo
Kenneth Poteete
Georgetown
Virginia Scott, RN
Houston
Faye Thomas
Corsicana
Josiah Tyson
Houston

A Trauma System for Texas

Ray Mason delivered this speech to hospital administrators in July. Mason, administrator of Levelland Hospital, is chair of TDH's Trauma Technical Advisory Committee.

"An average of 17 Texans die every day as a result of unintentional injuries!

"If you add intentional injuries (suicides and homicides), the total jumps to 30 per day.

"Staff in the Emergency Medical Services Division of the Texas Department of Health have made injury projections for 1990 based on the following American College of Surgeons' guidelines for determining the number and category of injuries based on population:

- a. 5% of all injuries fall in the severe category (immediately life-threatening),
- b. 10-15% of all injuries fall in the urgent category (not immediately life-threatening but many become so or result in significant disability),
- c. 80% of all injuries fall in the non-urgent category (not immediately life-threatening and do not present a risk of permanent disability),
- d. 1,000 severe injuries annually per 1 million population.

"The Texas Department of Health Population Data System projects the population to be 17,641,350. Therefore, Texas will face the following injury categories and projected incidence by Public Health Region in 1990:

1990 Injuries

Region	1990 Population	Severe	Urgent	Non-Urgent
1	1,746,040	1,746	5,238	27,937
2	807,356	807	2,422	12,918
3	1,213,596	1,214	3,641	19,418
4	4,668,842	4,669	14,007	74,701
5	4,645,620	4,646	13,937	74,330
6	1,622,450	1,622	4,867	25,959
7	1,320,951	1,321	3,963	21,135
8	<u>1,616,495</u>	<u>1,616</u>	<u>4,849</u>	<u>25,864</u>
State	17,641,350	17,641	52,924	282,262
Total Injuries				<u>352,827</u>

"Many of the injury deaths may be preventable. Some estimates suggest that the number could be as high as 70%! Howard Champion and Marcia Mabee, in a recently published monograph, **An American Crisis in Trauma Care Reimbursement**, state that after one year of implementation, regional trauma systems in at least three metropolitan areas reduced the preventable death rate by 50 percent. They go on to assert that if the average trauma patient (a 20-22 year old male) when seriously injured, receives expert trauma care in time, he has about an 80% chance of surviving and returning to full time work or school activities. This is the goal of a trauma system. Many dedicated individuals around our state have worked for years to try to establish such a system in Texas.

"On May 25, 1989, the Texas Legislature passed House Bill 18, also known as the Omnibus Health Care Rescue Act. This bill contains many important aspects relating to rural health issues and will have considerable impact on communities such as yours. Today I am going to discuss one part of that bill—Section 29, which calls for the Bureau of Emergency Management of the Texas Department of Health to develop and monitor a statewide emergency medical services and trauma care system. I will talk to you about what a trauma system is and how we envision the Texas system working, about why we need such a system, and about what has been accomplished towards establishing our statewide system in the past year.

"What is a trauma system? House Bill 18 defines it as an arrangement of available resources that are coordinated for the effective delivery of emergency health care services in geographical regions consistent with planning and management standards. To

put it more simply, a trauma system helps get the right patient to the right hospital in the right amount of time.

"Key features of a trauma system include:

"1. Access to the system

"This includes 9-1-1 or a single access number to activate local emergency personnel. Currently 22 counties, or about 60% of Texans have access to 9-1-1 with more areas coming on-line almost daily. The 1987 9-1-1 legislation requires all communities with a population less than 120,000 to have a 9-1-1 system in place by 1995, however, most Texans are expected to have access to 9-1-1 emergency telephone service by mid-1992! Access also implies knowledge of the public in the use of the system. This will be accomplished through public information and education efforts through the Emergency Medical Services Division, the Highway Department, and individual Emergency Medical Services firms throughout the state.

"2. Pre-hospital care

"Prehospital care includes three components: triage, treatment and transport. Triage in this context means the appropriate identification of the severely and urgently injured in order to activate the trauma system. This activation can include such things as bringing in an advanced life support team, calling for rapid transportation vehicles, notification of the hospital, etc.

"The treatment phase includes immobilization (colloquially known as packaging) and the application of advanced life support techniques, such as intubation and IV therapy by pre-hospital personnel.

"Transport means prompt transfer to the most appropriate hospital. For the majority of injury victims, this does not mean a Level I or II trauma center; they can be treated at local community facilities. But in order for Emergency Medical Services personnel and medical control to choose the most appropriate place, they must know the capabilities of the health care facilities in their locality. Some method must be utilized to identify those hospitals which have the personnel, resources, desire, and commitment to institute and maintain a trauma service that meets established standards. This will happen in Texas through the designation process.

"3. Trauma Centers

"Texas will be designating four levels of trauma hospitals. The following names are being considered by the Trauma Technical Advisory Committee:

- a. Level I Comprehensive Trauma Center
- b. Level II Major Trauma Center
- c. Level III General Trauma Facility
- d. Level IV Basic Trauma Facility.

"The committee is developing Texas Trauma Hospital Criteria for each of the four levels of hospitals. For levels I, II, and III, the American College of Surgeons' guidelines are being closely followed as required by the legislation.

"4. Rehabilitation

"Trauma is a disease of the young, of persons just at the beginning to the middle of their productive years. This final component is often neglected in trauma systems. However it is very important to have acute inpatient and outpatient rehabilitative care, as well as home care, to provide trauma patients with maximum opportunity to regain productive functioning.

"You may be thinking that all of this planning and system design doesn't really matter to you because your hospital is going to get all the trauma patients in your area anyway. And that is true. Initial triage will likely be to your hospital because there is no other one near enough.

"But the trauma system is going to be very beneficial to you in a number of ways. First, your hospital may choose to be designated. In that case, your commitment to quality care of injury victims will allow your hospital and personnel to be well-prepared to treat a trauma patient within your capabilities. Second, the lead hospital in your region will be available to you for consultation. Third, if the patient cannot be managed in your facility, a higher level of trauma hospital will accept the patient when you call. There will be no hunting for a hospital to take a critically injured victim. And finally, but perhaps most importantly, there may be some reimbursement for uncompensated trauma care to designated hospitals at all levels.

"There has been much accomplished towards establishing the Texas trauma system since passage of House Bill 18 a little over a year ago.

To put it more simply, a trauma system helps get the right patient to the right hospital in the right amount of time.

There will be no hunting for a hospital to take a critically injured victim.

"1. Trauma Technical Advisory Committee

"Appointments were made to the Trauma Technical Advisory Committee in November of 1988 by the Board of Health. Currently there are twelve regular and two ex officio members. The membership is diverse, representing trauma surgeons, hospital administrators, emergency nurses, anesthesiology, family practice, and the legal profession.

"The group is very enthusiastic and anxious to proceed. To date there have been five meetings. The full committee has been broken into two subcommittees: Hospital Designation and Trauma Registry. Much of the work is being accomplished by these two groups.

"A Trauma Registry is being developed for the collection of statewide data. The committee will be dealing with the confidentiality issue as well as deciding appropriate time frames for implementation. Implementation, of course, will be dependent upon the dedication of resources.

"2. Reorganization of the Emergency Medical Services Division

"The Emergency Medical Services Division has been reorganized to emphasize trauma system development. Two programs, the EMS/Trauma Systems Development Program and the EMS/Trauma Registry Program, are working to set up parameters for trauma systems in Texas.

"3. National Highway Safety Administration assessment

"In January 1990, an in-depth assessment of Texas' Emergency Medical Services system was conducted by a national team sponsored by the National Highway Safety Administration. The resulting report provided recommendations that support our direction in planning for EMS/Trauma System development.

"4. Uncompensated Cost Study

"When the legislature passed the trauma legislation, they requested a report on the costs and causes of uncompensated trauma care in Texas. Funding was obtained from the Highway Department to conduct such a study. The project has been contracted out to Udell Research Associates and some of you have probably been contacted by that firm. I encourage your support of this effort. The resulting report will be part of a comprehensive paper to the 1991 Legislature

outlining the need for monies for uncompensated trauma care and for trauma system development. Your support could impact on the amount of funding that the legislature appropriates.

"5. TEXEMS

"TEXEMS is a computerized prehospital data collection system that was developed by the LBJ School of Public Affairs. It is currently in the pilot stage. The data collected will provide prehospital information to the trauma registry and when combined with provided hospital data, will assist in quality assurance activities, allowing for evaluation from a system perspective. The ultimate goal, of course, is research of the data that will lead to improved patient care and intervention strategies.

"6. Research

"Extensive research of current trauma literature and into other state systems is being conducted by staff to allow us to extract the good pieces of other systems when working to develop the Texas system. Important contacts have been made in other states. We're working from a couple of old adages: **Learn from the mistakes of others and It is not necessary to reinvent the wheel.**

"7. Public information activities

"The Public Information and Education program will play an important role in the development of our state system. The **Texas EMS Messenger** is currently being utilized as a vehicle for dissemination of trauma system development information. A mass mailout to all hospitals in Texas was recently conducted to invite subscription to this publication. This was not done in an attempt to increase subscriptions for the newsletter. It is a sincere attempt to keep facilities informed about trauma activities.

"A brochure entitled "A Drive to See the Bluebonnets Should Not Be Fatal" is currently being developed. When printed, it will be available to all interested parties. Other ideas being generated to educate the public about our trauma system include: press conferences with the Trauma Technical Advisory Committee, news releases, posters, displays, etc.

"Let me talk about plans for the future for a few minutes.

The ultimate goal, of course, is research of the data that will lead to improved patient care and intervention strategies.

We're working from a couple of old adages: Learn from the mistakes of others and It is not necessary to reinvent the wheel.

"1. Specify trauma service areas (regionalization)

"The state will be broken up into regions or trauma service areas that reflect normal patient flow patterns. Each region will have a number of designated trauma hospitals of varying levels. The highest designated hospital will be the lead hospital in the region. If there is more than one hospital at the highest designation level, they will work together.

"The lead hospital will have a number of responsibilities including providing consultation to other hospitals in the service area and review of that area's trauma care to include prehospital activity. A multidisciplinary advisory committee within each service area will develop a regional trauma plan specific to that area's needs.

"2. Prepare 1991 Legislative Report

"In order for a trauma system to work in our state, funding for uncompensated trauma care must be addressed by the legislature. The cost study that is currently being conducted will provide figures on the magnitude of the problem in Texas. The resulting report will be part of a larger paper which will also include prehospital and rehabilitation cost figures, as well as strategies for generating a pool of funds for reimbursing uncompensated trauma care. Some of these strategies could include:

- motor vehicle violations fees
- taxes on firearms, bullets, alcohol, etc.
- increasing minimum insurance levels.

"3. Address confidentiality issues

"Maintenance and improvement of a trauma system requires an effective quality assurance program. For this to work, we need stronger legislation in Texas to protect all aspects of reporting, including committee work. Some states have very stringent laws which protect all data. We're hoping to get the same for our state during the next legislative session.

"4. Draft trauma system rules

"House Bill 18 calls for the Board of Health to adopt rules to implement the trauma system, to provide for the designation of trauma facilities, and for triage, transfer, and transportation policies. Staff will be working with the Trauma Technical Advisory Committee to draft these rules for approval by the board. A positive aspect for you in this process is that these rules come under the

auspices of EMS policy, therefore the public will have a 90 day comment period, rather than the usual 30 days for other Board of Health rules. The draft rules will be well-publicized so that you will be aware of all the issues. During the comment period, there will be a public hearing as well.

"5. Pilot trauma registry

"The trauma registry will be implemented in phases. Currently three phases are being proposed. Phase 1 will probably begin with 3 to 4 hospitals to determine if the registry processes are functioning as hoped. Then the program will likely proceed to an entire trauma service area in Phase 2. Phase 3 then would entail implementation around the state. The registry is being designed to be as convenient and valuable as possible for facility personnel.

"6. Designation of hospitals

"The actual designation process has yet to be decided. The Trauma Technical Advisory Committee will work out the details of this procedure and it will be presented for your comments as part of the rule packet.

"7. Assist with trauma service area plans

"Once the trauma rules have been approved by the Board of Health and the state has been broken into trauma service areas, advisory committees will begin working on their area plans. Membership on these committees should be representative of the area's health care team. All persons or facilities dealing with trauma patients in a region should have input into the area's plan.

"The plan will include such things as bypass protocols, triage criteria, transfer procedures, etc. The format and content of area plans across the state will probably vary widely as each area addresses its own specific needs. EMS Division staff will be available to help the area councils with their plans. These plans will be very important because they will allow all entities dealing with trauma patients in a specific region to know exactly what to do in a particular situation. It is also likely that reimbursement for uncompensated trauma care will be tied to the plan in some way.

"The current situation in Texas is difficult for both trauma victims and the people who take care of them. There are pockets of excellence and dedicated individuals across the state. What we hope to accomplish is to increase the quality of care for all injury patients to the highest level possible."

In order for a trauma system to work in our state, funding for uncompensated trauma care must be addressed by the legislature.

Maintenance and improvement of a trauma system requires an effective quality assurance program.

Paramedic and Intermediate Exam Subscale Averages April - June 1990

These test results include initial and refresher training testing for groups of eight or more.

The paramedic subscales are:
Subscale 1: Assessment, Airway, Shock, Pharmacology (30 questions);
Subscale 2: Trauma, Burns, Rescue (30 questions);
Subscale 3: Cardiovascular (60 questions);
Subscale 4: Medical (45 questions);
Subscale 5: OB/GYN, Pediatrics, Geriatrics, Behavioral (25 questions);
Subscale 6: Prehospital Environment (10 questions).

The critical subscales are 1 - 5. Subscale 6 is non-critical. The test has 200 questions; no more than 15% are basic level questions.

The Intermediate subscales are:
Subscales 1: Patient Assessment and Initial Management;
Subscale 2: Airway Management and Ventilation;
Subscale 3: Assessment and Management of Shock; and
Subscale 4: Prehospital Environment.

The critical subscales are 1-3. Subscale 4 is non-critical and the test has 100 questions.

—Compiled by
Saleem Zidani

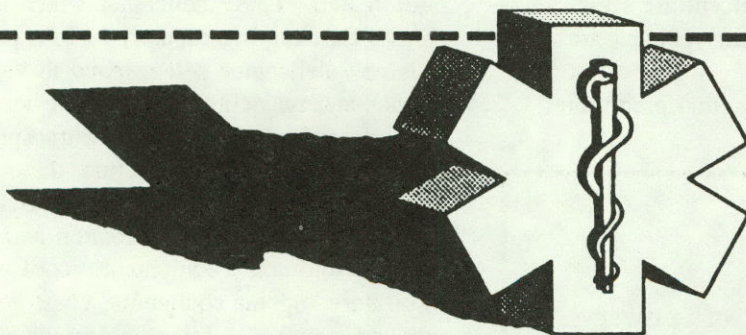
		<u>Paramedic Courses</u>					Averages by Subscale					
PHR City	Coordinator	Class Type	Class Size	Class Average	1	2	3	4	5	6		
PHR 1												
Temple	Moshinski	Initial	19	89.55	89	92	89	87	93	91		
Austin	Montgomery	Initial	09	93.44	94	94	93	92	96	93		
PHR 2												
Amarillo	Croy	Initial	22	89.09	89	91	86	87	95	94		
Amarillo	Croy	Refresher	16	85.63	85	92	82	85	88	91		
PHR 3												
El Paso	Brown	Initial	13	85.46	88	89	86	83	83	85		
Odessa	Howard	Initial	13	90.11	90	89	90	89	94	98		
Midland	Davidson	Initial	13	84.19	85	87	82	85	84	87		
San Angelo	Butler	Initial	13	90.38	95	91	88	89	90	95		
PHR 4												
Pasadena	Bowling	Initial	08	98.81	89	90	83	88	86	94		
Houston	Brant	Initial	22	87.43	88	91	85	86	91	92		
Texas City	Waites	Initial	10	86.45	89	88	84	83	92	91		
Houston	Hatch	Initial	08	89.87	93	93	90	87	90	81		
Houston	Stevenson	Refresher	27	90.96	91	93	89	90	94	94		
PHR 5												
Dallas	Goodykoontz	Initial	36	90.43	90	90	90	91	95	92		
Denison	Vansant	Initial	12	84.33	86	88	80	82	89	92		
McKinney	Duggan	Initial	09	89.89	89	93	89	88	93	89		
Farmers Branch	Tobin	Initial	12	87.04	87	91	85	86	90	87		
Hurst	Smith	Initial	18	88.39	89	92	86	86	93	94		
Hurst	Smith	Refresher	23	91.96	91	96	90	91	94	95		
Orvilla	Pickard	Initial	15	87.47	87	88	86	86	92	92		
Winters	Wright	Initial	09	82.11	83	84	76	80	92	96		
PHR 7												
Tyler	Gandy	Initial	15	88.50	90	91	86	88	91	86		
PHR 8												
Corpus Christi	Rodriguez	Initial	15	87.73	90	89	85	85	93	95		
Statewide Averages					89.48	90	92	88	88	91	93	
		<u>Intermediate Courses</u>										
PHR 1												
Mexia	Nichols	Initial	13	89.23	89	88	87	95				
College Station	Kitzmilller	Initial	11	90.18	88	92	90	92				
PHR 2												
Amarillo	Croy	Initial	12	83.50	85	82	83	86				
PHR 3												
El Paso	Brown	Initial	12	86.00	87	86	87	83				
PHR 4												
Houston	Brant	Initial	19	86.42	85	86	87	88				
Pasadena	Bowling	Initial	10	81.20	84	77	82	83				
Port Arthur	Pitts	Initial	11	88.09	87	90	88	87				
Houston	Stevenson	Initial	22	84.86	85	84	87	83				
PHR 5												
Denison	Vansant	Initial	14	82.79	82	84	80	87				
McKinney	Duggan	Initial	13	89.54	90	92	89	86				
Graham	Bradshaw	Initial	19	83.68	83	82	85	85				
PHR 7												
Crockett	Divin	Initial	13	82.15	86	81	81	81				
Nacogdoches	Gandy	Initial	10	81.40	87	75	86	77				
Tyler	Gandy	Initial	11	88.18	85	88	91	88				
PHR 8												
Gonzales	Reger	Initial	09	92.33	94	91	90	99				
Victoria	Reger	Initial	08	92.50	92	91	95	92				
Statewide Averages					85.71	86	85	86	87			

Top 10 EMT Classes
April - June 1990

Includes only initial and refresher testing of classes of ten or more.

Location/Coordinator	Number Tested	Average Grade
1. Fort Worth/Kirk	10	92.90
2. Odessa/Martin	11	91.73
3. Dallas/McMullen	21	90.10
4. Dallas/McMullen	12	89.50
5. San Antonio/Garoni	10	89.40
6. Fort Stockton/Falkner	19	89.32
7. College Station/Tilson	13	89.31
8. Houston/Brant	15	88.80
9. Waco/Morrison	17	88.65
10. Temple/Moshinskie	18	88.56

A total of 2,637 students tested, average grade 84.47.
 There were 68 schools of 10 or more students.



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An Interview With John Murray

STARFlight Supports Ground EMS in 28 Counties

Shock Trauma Air Rescue, STAR Flight, is the emergency medical helicopter service based at Brackenridge Hospital in Austin. The service is a cooperative effort among Travis County, Brackenridge Hospital, and the City of Austin Emergency Medical Services Department and has been in existence since May, 1985. Of the 1,200 flights per year, approximately seventy percent are scene response and the other thirty percent are transfers.

This adjunct to the ground prehospital

emergency medical service in the central area of the state, serves twenty-eight counties surrounding Travis county. A pilot, flight paramedic, and registered nurse specially trained in critical care and emergency medicine staff each of the two choppers and each craft can carry two patients. STAR Flight expects to take delivery soon of a new \$ 3.9 million Bell 412 SP helicopter which increases the carrying capacity to four patients. This new helicopter will respond to vehicle crashes and incidents with multiple victims in need of medical care and quick transport.

Besides oxygen and suction, these airborne respiratory and cardiac resuscitation craft carry endotracheal intubation and cricothyroidotomy equipment, ventilator and respiratory support equipment, chest decompression supplies, a full complement of IV fluids and emergency medications, IV infusion pumps, digital blood pressure monitors, antishock pants for both adults and pediatric patients, spinal immobilization equipment, splints, dressings and some rescue equipment. Any specialized equipment required by a given patient or circumstance can be secured and placed on board ready for takeoff within minutes. Communications is through a multi-channel radio. Night scene illumination is accomplished by a 30 million candle power flood light system.

John Murray, the administrator of the STAR Flight program said, "Prior planning is probably the one most important factor in setting up a successful helicopter adjunct service. This is an extremely expensive undertaking and all supporting organizations

Typical Safety Precautions:

Landing area (60' X60') must be clear of power lines, trees, vehicles, trash, and signs. The surface must be smooth and level.

- Do not use flares to mark the landing area.
- No Smoking within 100' of the helicopter.
- No running near the helicopter.
- Never approach the aircraft unless signaled to do so by the pilot.
- Always approach from the front and keep clear of the tail section at all times.

Flight crews are responsible for the loading and unloading of equipment, and they will direct the loading and unloading of patients. Assist only when directed to do so by the flight crew.

should be intimately aware of their share of the costs prior to start-up of the undertaking." The aircraft alone runs well over a million dollars and that up-front expense does not include personnel, supplies or maintenance. STAR Flight currently charges \$200 for lift-off and \$16 per mile from the scene of the rescue to the hospital. "However," Murray pointed out, "in many instances much of this charge is paid for by some entity other than the patient. Medicare and Medicaid pay only that amount of money as if the service was groundservice."

Safety

Besides expense, Murray identified two other factors to consider in the development of a helicopter system: safety and support by ground EMS systems.

Safety is affected by a number of things such as weather training, management, and even staff clothing. With the STAR Flight organization, no one makes the decision to fly in any weather, but the pilots, according to Murray. He said this is the pilot's particular area of expertise and that no one should be making this decision for them, certainly not management. During training, the crews should be kept aware of the safety factor, not to the extent that they become afraid of flying, but to the extent that the right as well as the wrong way of doing the job is stressed. "As an example, STAR Flight's crews wear uniforms made of Nomex, a flame retardant material that could be invaluable in the case of fire," Murray stated. It's interesting that even in this area, crews are advised of the correct fit of their uniforms for safety's sake. Nomex is designed to be worn loosely and tailoring of these uniforms to be form fitting can defeat the fire retardant qualities of the fabric.

Ground EMS Relationship

Another factor of importance is coordinating with ground EMS and developing rapport with all services in the operating area. Murray said that a helicopter service is an adjunct service which works best in cooperation with the EMS ground organizations. STAR Flight makes an effort to develop an effective rapport with the ground EMS in their service area, stressing that they are an adjunct service, designed to complement ground services through the advantages of speed of delivery and advanced life support flight staff. This is a decided advantage for

BLS ground crews who are faced with multi-system trauma or cardiac arrest situations.

Drawbacks? Cost and Weather

Cost and weather are probably the two strongest drawbacks. Crew fatigue can also be a limiting factor. This is the reason that except for very unusual circumstances, STAR Flight uses the twelve hour shift. Murray said that after 12 hours the level of efficiency drops and the chance for fatigue-induced error becomes greater.

To learn how to better use the helicopter service in your area of the state, contact the organization to set aside some planning time, as there are specific requirements which you should be aware of such as the size of the landing space, crowd control, and the type of patients who can best be helped by flight EMS. If you live in the area served by STAR Flight, contact John Murray at 512/473-9367.

If you do not know which flight service could coordinate with you in your area, contact your Public Health Region EMS office.

Tom Ardrey is a Bureau employee on the Messenger staff.

Patient considerations for helicopter evacuation

- Multisystem trauma
- Head or spinal cord injuries
- Blunt or penetrating trauma to the chest or abdomen
- Traumatic amputations
- Two or more proximal long bone fractures
- Near drowning
- Major electrical burns or electrocutions
- Major burns or smoke inhalation
- Mechanism of injury leading to a high probability of severe injury:
- High speed head-on collision
- A fall from a height of greater than twenty feet
- A fatality having occurred in the same vehicle
- Acute myocardial infarction
- Symptoms of clinical or anaphylactic shock
- Continuous seizures
- Unconsciousness for any reason
- Unstable stroke patients
- Respiratory and cardiac failure
- Pediatric emergencies
- Other acute conditions

Role of the Helicopter in an EMS System

In Texas with its vast distances and large metropolitan areas, use of a helicopter may be a solution to rapid transport of seriously ill or injured patients.

A helicopter as part of an EMS system enhances service particularly where time and distances are factors for definitive care, and when advanced personnel are needed. However, a helicopter cannot replace a primary response by EMS personnel and vehicles. In rural areas where both time and distance may be factors for access to definitive care, the first step to definitive care may be stabilization at the nearest appropriate facility and helicopter transport to a specialized care facility.

Studies show that motor vehicle accidents in rural areas have a higher mortality rate and patients sustain more severe injuries. Because time becomes a critical element in the successful treatment of seriously injured patients, rapid transport by advanced level EMS to a specialized care facility is essential and can have direct benefit by decreasing the length of hospitalization and minimizing complications and long term disabilities.

In the urban setting, the helicopter is effective when time becomes a critical issue such as during the rush hour when parts of the city become gridlocked.

— Mary S. Campbell

Funds Available for EMS Local Projects

The Texas Department of Health through a contract with the State Department of Highways and Public Transportation is accepting applications for local EMS projects to improve the quality of emergency medical care to reduce death and disability as a result of motor vehicle crashes. A total of \$210,309 is available to fund a minimum of ten projects for the period beginning January 1, 1991, through August 31, 1991.

The Texas Department of Health announced in the August 24, 1990 issue of the **Texas Register** that it will implement a program to provide funding and technical assistance to local EMS providers, local governments, or other local EMS sponsors to upgrade or expand EMS services. Participation in the TEXEMS data system will be required of all successful contractors. Projects must include at least one task designed to improve EMS personnel or victim safety. Projects may also focus on efforts designed to reduce response times or on-scene times. Contracts will not be awarded for primary EMS personnel training or equipment purchases.

The Texas Department of Health will provide direct management technical assistance and funding to selected EMS providers to assist in upgrading or expanding current

emergency medical services, with emphasis on systems development and highway safety. The focus will be on the management of EMS and the impact the local provider has on the community, particularly in relation to death and disability as a result of motor vehicle crashes.

The Texas Department of Health reserves the right to accept or reject any or all proposals submitted. Funding of projects is contingent on availability of funding to the Texas Department of Health. Each application will be evaluated independently and selections will be made to accomplish geographic representation. Proposals will be reviewed by Texas Department of Health and the State Department of Highways and Public Transportation.

Application packets are available from Texas Department of Health Regional Offices or from Billy G. Sladek, Planning and Resources Coordinator, Emergency Medical Services Division, Texas Department of Health, 1100 West 49th Street, Austin, Texas 78756, (512) 458-7550. Completed proposals must be received in the Emergency Medical Services Division in Austin not later than the close of business on October 31, 1990.

— Billy Sladek

by Kathryn C. Perkins

An Introduction to ALS in Texas

Paramedics, deservedly, have become folk-heroes to many due to the helping nature of their work and extensive coverage by the media, both in the fictional and real-world formats. But what do they really do? What kind of patients are they treating? How often do they perform their special skills? This kind of information is important to EMS. It can be used to determine equipment usage, to plan educational curricula, to help devise and implement EMS systems, and to address quality assurance issues. EMS firms may utilize this information to compare their skill usage and success rates to state-wide averages. It may also be used by individual EMTs to check out their personal success rates.

EMS managers realize the importance of evaluation to assess the quality of the care being administered to patients. However, the first step in any evaluation process is the determination of the current situation. Then future studies may be done to evaluate improvement or decline. The purpose of this project is to take that first step and investigate how often and with what degree of success Advanced Life Support skills are used in Texas. These skills include airway management, medication and fluid administration, and cardiac management. Method of physician instruction and special equipment usage are also covered.

The information in the study was collected from a stratified sample of sixty-two of

the 1100 EMS provider firms in Texas in 1988 and 1989. These sixty-two providers participated in the Bureau's EMS run record-keeping program which was then called Emergency Medical Information System (EMIS) and submitted a total of 25,139 emergency run reports. Of the 25,139 BLS run reports submitted, 8,472 reports indicated at least one ALS procedure was performed. During 1988 and 1989, from 500 to 700 ALS forms were submitted each month.

This was the first study done of the ALS information. Because of the volume of forms available, a limited study of ALS runs was done covering the time period of April through June 1989. All forms submitted were included in the study unless the run report ID number or the date were not entered.

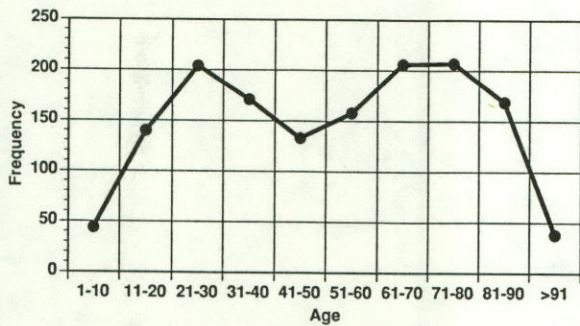
During the three-month period of the study a total of 1,528 forms were submitted by eighteen firms, four rural and fourteen urban. Eight of the firms were rated as ALS; the remainder as BLS. Seven of the eight Public Health Regions were represented. Only PHR 3, which comprises the western part of Texas, did not have a participant.

There were some problems encountered when pursuing this study. Major difficulties included a lack of completeness in filling out the forms, a lack of standardization in the data entered on the forms, problems with the design of the form itself, and the fact that the BLS and ALS forms were not linked.

Kathy Perkins, on staff with the EMS Division's EMS/Trauma Development Program, has worked in the Bureau's Emergency Medical Information System program and now has primary responsibility for working with the Trauma Technical Advisory Committee to implement parts of House Bill 18, the Omnibus Rural Health Rescue Act.

Figure 1

Frequency Distribution of ALS Run Age Groups



1988 Injury vs. Illness ALS

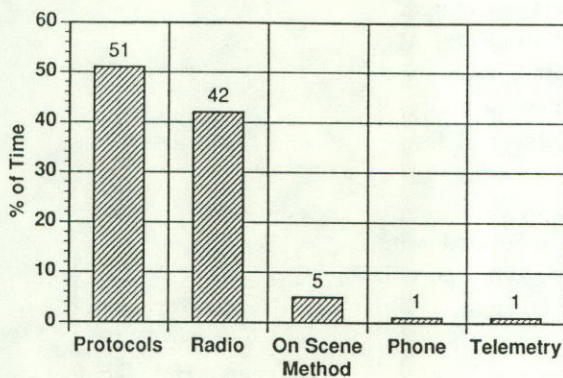
Emergency Runs

Initial Diagnosis	Number	Percentage
Illness	6122	72.3%
Injury	1792	21.2%
Both	329	3.9%
None Indicated	229	2.6%
Total	8472	100.0%

Figure 2

Figure 3

Method of Physician's Instructions



Primary IV Sites

Site	Percentage
Right Forearm	12.8%
Left Forearm	32.3%
Right Antecubital Fossa	9.9%
Left Antecubital Fossa	18.1%
Right Hand	8.7%
Left Hand	17.8%
Jugular	.4%
Total	100.0%

Figure 4

Advanced Life Support Statistics

Age. The average or mean age of patients receiving ALS treatment was 52. The range extended from 1 month to 104 years. However, the most often occurring or mode age was 18. Note the bimodal character of this series: there are two peaks, one at ages 18 to 20, the second at ages 77 to 81 (Figure 1).

It can be theorized that the first peak represents trauma and the second peak, illness. However, since the data are not linked to the original BLS run forms, it is not possible to substantiate this observation. Analysis of emergency ALS runs for the 1988 stratified sample shows the following breakdown of injury vs. illness (see Figure 2).

Method of Physician's Instruction. EMS personnel perform their skills under physicians' orders. These can take the form of standing orders or protocols or direct orders by radio, telephone, or in person. Figure 3 depicts the percentage of time each method was used. More than one method can be utilized on a run. Standing orders or protocols were used a majority of the time (51%), with radio communication a close second (41%). On 20 percent of the runs, no specific method was indicated. Of particular interest is the fact that a physician was on the scene 5 percent of the time. Note also that telemetry is rarely used.

Intravenous Therapy. IV cannulation was the most frequently performed ALS skill. Eighty-one percent of the runs show an IV was attempted. The success rate was 87%; the average number of actual IV attempts per patient was 1.4. However, the range of the number of IV attempts extended up to 5. More than 31 percent of the attempts were greater than one; 8 percent (98 cases) were greater than two.

The most routinely used sites for IV cannulation were the forearms (45%), specifically the left forearm (see Figure 4). The right antecubital fossa was the chosen site for second attempts. Note that the jugular vein was used on five of the runs; in each case it was the primary site.

The most commonly used IV fluids included: D₅W (44%), Normal Saline (34%), and Lactated Ringer's (21%). A large majority (74%) of the IVs were run at a rate to keep the vein open only. Approximately 12 percent of the drip rates were set wide open.

Times Given	Drug
98	Epinephrine 1:10000
73	Atropine
109	D ₅₀
17	Ipecac
69	Narcan
20	Nitroglycerin
52	Nitrostat
41	Lidocaine
76	Other:
6	Epinephrine 1:1000
2	Calcium Carbonate
11	Lasix
4	Morphine Sulfate
13	Nitronox
3	Valium
12	Lidocaine Drip
14	Sodium Bicarbonate
1	Bretolol
10	Other

Figure 5

Medications. At least one medication was dispensed on 23% of the runs. The most commonly administered medication was D₅₀, a glucose solution usually given to counteract insulin shock or in cases of coma of unknown origin. The cardiac medications: epinephrine, atropine, nitrostat, and lidocaine as well as narcan (given to counteract a drug overdose) were also given with some regularity (see Figure 5).

Airway Management. While IVs are the most often performed ALS procedure, airway management is the most important. There is a variety of equipment available to EMTs to help ensure that a patient is adequately ventilated. By far, the most often utilized procedure was simple head and neck positioning to assure that the airway is open (see Figure 6). Endotracheal intubation was attempted on 7 percent (110 attempts) of the runs. Of those attempts, 92 percent were evaluated as successful by the EMT performing the procedure.

Airway Type	Percentage*
Type	
Head/Neck Positioning	54%
Oropharyngeal Airway	1%
Nasopharyngeal Airway	0%
Esophageal Obturator	1%
Endotracheal Tube	7%
None Indicated	39%

Figure 6

* Percentages may add up to more than 100% because at times more than one airway type may have been indicated.

Ventilation Method	Percentage*
Method	
Self-Ventilation	22%
Bag Valve Mask	5%
Demand Valve	5%
Mouth to Mouth	0%
Nasal Cannula/Face Mask	76%
None Indicated	5%

Figure 7

* Percentages may add up to more than 100% because at times more than one method of ventilation may have been indicated.

Participating Providers

	Designation	PHR	
		Urban	Rural
1. Abilene	ALS	Urban	5
2. Beaumont Rd	BLS	Urban	4
3. Belton	BLS	Urban	1
4. Copperas Cove	BLS	Urban	1
5. Cypress Creek	ALS	Urban	4
6. Frio County	BLS	Rural	6
7. Hamlin	BLS	Rural	5
8. Honey Grove	BLS	Rural	5
9. Killeen	ALS	Urban	1
10. La Porte	ALS	Urban	4
11. Los Fresnos	ALS	Urban	8
12. Merkel	BLS	Urban	5
13. Nolanville	BLS	Urban	1
14. North Channel	BLS	Urban	4
15. Ralls	BLS	Rural	2
16. St. Michael's	ALS	Urban	7
17. St. Michael's	ALS	Urban	7
18. Temple	ALS	Urban	1

The most popular method of delivering oxygen to a patient is the nasal cannula or face mask. These methods were used on almost 80 percent of the runs (see Figure 7). Mouth-to-mouth resuscitation was not indicated as being used at all.

Electroshock. Electroshock was attempted on 3 percent of the runs. This took the form of defibrillation only; cardioversion was not indicated as being used on any of the runs. A shock was administered an average of three times. The success rate, defined for the purpose of this study as conversion of fibrillation to a perfusing rhythm before arrival at an emergency department, was 27 percent.

Special Equipment. Special equipment was not used extensively on these ALS runs. MAST were applied 2% of the time, a thumper was used 1% of the time, dextrostix were used 3% of the time, and other equipment was used 7 percent of the time.

Conclusion

This study is only a beginning step in understanding the utilization of Advanced Life Support procedures in Texas. It has revealed some interesting information, such as the number of IVs being started, the success rate and range of IV attempts, the administration of D50 to many patients, the success rate of electroshock therapy, and the bimodal aspect of the series.

A major conclusion is that more information is necessary. It is critical to link the ALS and BLS data in order to include vital information such as probable cause of injury; field assessment; response, scene, and transport times; and BLS care administered. This information is important in order to get a feel for which types of runs (cardiac, injury, etc.) are requiring the more advanced levels of care; to determine whether the advanced procedures being done are prolonging scene times in areas such as critical trauma; and to know exactly what care a patient has received. This linkage would also allow access to hospital emergency department data, providing the opportunity to conduct meaningful quality assurance and outcome studies.

A second conclusion is that EMS personnel need to become more aware of the importance of filling out patient care forms carefully and completely. This is important for a multitude of reasons including:

1. to assure that all care given is documented for future caregivers of a particular patient,
2. for effective billing purposes,
3. to record every detail of an ambulance run, particularly patient care information, as accurately and completely as possible in case of a lawsuit,
4. to help in system development by recording important information (i.e. numbers and types of patients being transported; response, scene, and transport times; procedures being done; triage protocols followed; etc.).

Around The State

October 5, 6, 7, **13th Annual Wilderness Rescue.** Stan Irwin at 512/684-8268 or write to : TAEMT Region 3, 10356 Mt. Evans, San Antonio, 78251.

October 9 - 11, 1990, **Second Annual Industrial Rescue Competition,** Sweeny, TX Kay Roop, Baton Rouge, LA 1-800-647-7626.

October 12 - 14, 1990, **20th Scientific Assembly,** Chicago, IL. Emergency Nurses Association, 230 E. Ohio, Suite 600, Chicago, IL 60611; 312/649-0297.

October 18, **Trauma Technical Advisory Committee meeting,** Austin, 1:00 pm, Harold Broadbent 512/458-7550.

October 19, **Haz-Mat Recognition and ID,** Texarkana \$10. Kathy Jordan 214/838-4541

October 26, **Emergency Care Seminar.** Texarkana \$30. Kathy Jordan 214/838-4541

October 27 - 28, **Basic Vertical Rescue,** \$60, MCC Waco 817/750-3512.

November 1, 2 & 3, **Advanced Vertical Rescue,** \$110, MCC Waco 817/750-3512.

November 1-3, **Annual Alaska Symposium,** Anchorage Alaska. Karen Lee, Southern Region EMS Council, Inc., 6130 Tuttle Place, Anchorage, AK 99507. 907/563-7440.

November 14-15, **PHTLS Course,** Texarkana \$125. Kathy Jordan 214/838-4541.

November 15 - 17, 1990, **10th Annual Trauma Symposium,** Marriott Hotel, El Paso, TX Wendy Younger, 217 Vista Rio Circle, El Paso 79912-2125.

November 8 - 10, 1990. **Critical Incident Stress Debriefing** for emergency services personnel. Beaumont Civic Center. Open to EMTs, nurses, police officers, firemen and mental health personnel.

December 6, **Public Hearing on Certification Rules,** Austin, contact Harold Broadbent, 512/458-7550.

December 7, **Texas EMS Advisory Council meeting,** Austin, contact Harold Broadbent, 512/458-7550.

December 8 - 9, **PHTLS-Basic Course,** Texarkana. Kathy Jordan 214/838-4541.

April 16 - 19, 1991, **Industrial Fire World Exposition,** Houston, TX Tammy Randermann, 409/693-7105. Fax 409/764-0691.

Prof. Liability available to EMS organizations, Contact Bert Peterson at 713/622-7161 or 1-800-537-7497

EMT-I, EMT-Ps needed offshore: \$795/week + overtime. Texas or Nat'l Certification. Resume: OPI, Health Services, 96 W. Front St, Orange, TX 77630.

EMT-I/Paramedic: TX Dept. of Corrections. \$1622/mo. Texas certification EMT-I/Paramedic. TDC, Box 99, Personnel, Huntsville, TX 77342 409/294-2755.

Paramedic: Firefighter trainee, EMT-P. Resumes: Houston Fire Dept, Personnel Dept., Selection Services Div., 500 Jefferson, Houston 77002.

Assoc. Medical Director: Coordinate ALS training/CE for EMTs. Paramedic, RN. ACLS cert. Exp. in paramedic educ. & EMS operations. Dept of Surgery, Texas Tech Univ, RAHC, 4800 Alberta Ave., El Paso,

TX 79905. Sandra Mendez 915/545-6860.

Paramedics: Offshore oil production. Texas or National Registry. ACLS, BTLs. Resume: Medic Systems, P.O. Box 690928, Houston, TX 77269.

EMT Training Coordinator. UTSW Medical Center. Vitae to Debra Cason, 5323 Harry Hines, Dallas, TX 75235-8890. 214/688-3131.

Paramedic Instructor: UTSW Medical Center. Vitae to Debra Cason at 5323 Harry Hines, Dallas, Tx. 75235-8890. 214/688-3131.

EMTs, EMT-Ps: Resumes: Offshore Emergency Medical Systems, Chris Hardage, 5919 Charles Schreiner Tr, Austin, TX 78749.

Huntsville EMS Administration: State correctional system. \$34,032/benefits. Resume: TDCJ, Box 99, Personnel Annex, Huntsville 77342. 409/294-2755.

LifePac5 monitor, defibrillator, 512/449-1902.

Resusci Anne, manikin repair supplies, 484-8382.

Horton Modular Ambulance, 814/226-7276.

3 Motorola Mx-340 Radios, 512/729-2112.

1988 Collins Ambulance, 512/776-0025.

Thumper, Resuscitator, 713/466-6159.

Liteguard 6-B, defib/monitor, 817/236-8044.

Two Laerdal defibrillators, 713/922-1108.

1980 Collins type II Ford Ambulance. 214/897-5357.

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