

# EMT'S TEAM UP WITH E.D. STAFF

*EDITOR'S NOTE: Many Emergency Medical Technicians in Region IV are currently working several hours a week as volunteers in hospital emergency departments. EMT-Volunteer programs are underway at Peninsula General Hospital in Salisbury; Memorial Hospital in Easton; Union Memorial Hospital in Elkton; Dorchester General Hospital in Cambridge; and Edward McCready Hospital in Crisfield. The goals and operation of the various programs are similar to those of Peninsula General Hospital, which has the longest-running program and is described in the following article.*

Thirty Emergency Medical Technicians (EMT's) from Wicomico, Worcester, and Somerset counties and Sussex County in lower Delaware are participating in the EMT-Volunteer program at Peninsula General Hospital (PGH) in Salisbury. Working side by side with emergency department nurses and physicians, the EMT Volunteers gain broad clinical experience while providing skilled assistance to emergency department staff.

Working only under the supervision of a nurse or physician, EMT Volunteers assist in such duties as: administering cardio-pulmonary resuscitation (CPR), establishing an airway, applying splints and slings, treating burn patients, taking blood pressure, moving and lifting patients. (EMT's do not administer medications or intravenous solutions.)

All EMT's in PGH's program have current CPR and EMT certifications. They have also attended orientation sessions briefing them on hospital protocols and have successfully completed approximately 35 medical procedures accomplished under the supervision of and evaluated by a supervising nurse.

Scheduling of the EMT Volunteers is determined on the basis of



*The Reverend Joseph Bastick, an EMT Volunteer, assists a PGH Emergency Department nurse. (Photo: Betty Ann Smith, PGH)*

four-hour shifts. According to his or her availability, one EMT is assigned to each shift with the exception of week-end shifts which generally have two EMT's on duty.

According to Betty Turner, assistant director of nursing in the Inservice Education Department at PGH and one of the coordinators of the program, this is the first time that EMT's are actively involved in the emergency department. (Several years ago when Edith Johnson, now associate director of nursing, taught

EMT's from the Snow Hill Fire Department, EMT's "observed" in the emergency department as part of their EMT training.)

Ms. Turner traces the idea for the innovative program that began last March to EMT's from Pocomoke Volunteer Fire Company who requested work experience in PGH's emergency department. Ms. Turner, who designed PGH's EMT-Volunteer program, says that following their requests it was a mat-

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# EMS NEWS

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ter of her talking with PGH administrators and emergency department nurses and physicians to gain their approval and smooth out details; of determining what training the EMT's had and how they could assist the E.D. staff; and "putting the program under the bonnet of hospital volunteers—but a special kind of volunteer, since they would assist in clinical procedures." (EMT's in the program report to Betty Ann Smith, Director of Volunteers, who records their hours and handles scheduling; they wear the hospital volunteer uniform, distinguished from other volunteers only by their EMT patches and name tags.)

Although EMT Volunteers differ in background and experience, they seem to agree that the program is extremely beneficial and that they are gaining first-hand clinical experience that supplements their EMT training at the same time they are maintaining their EMT skills.

Howard L. Cartwright, a volunteer with the Headquarters Company in Salisbury who has belonged to a fire company "20 some years," has attained more than 150 hours in PGH's EMT-Volunteer program. An EMT for the past two years, he has assisted PGH doctors in such things

as doing spinal taps, treating trauma patients, and reviving patients clinically dead. He has also performed the more usual tasks; in fact, he "has become quite proficient in helping to set limbs and make casts." An electronic engineer with the C & P Telephone Company, Mr. Cartwright is also a CPR instructor and continues his volunteer work three days a week by being on call to provide emergency medical care for children injured while playing on local football teams.

To the Reverend Joseph Bastick, a minister at St. John's Methodist Church in Fruitland for the past two years and an EMT for the past four years, the EMT-Volunteer program has a "two-fold advantage." "It gives me an opportunity to keep my hand in first-aid and also serve the community and broaden my ministry." (Although he works at PGH in his role as EMT, he has occasionally been asked to talk in his role as minister to a patient or staff member needing counseling.)

Certified as an EMT last March, Sandy Hastings has used her EMT training as a volunteer with the Sharptown Volunteer Fire Department, as well as in coping with her four-year-old daughter's "Calamity Jane accidents." A secretary for the Fire Marshal in Salisbury, Ms. Hastings cites the EMT-

Volunteer program at PGH as "providing valuable cross-reference experience"; for example, "in the hospitals you are observing and assisting an experienced doctor or nurse make decisions regarding an injury," while in the ambulance, "you are the one with the responsibility to recognize the injury and treat it correctly." Working with PGH's emergency department has increased her confidence when treating patients in the field. In addition, she emphasizes the knowledge she has gained by the willingness of the medical staff to explain why they are performing certain procedures.

In opening its emergency department doors to EMT's, PGH seems to have taken a step in strengthening the cooperation between emergency department staff and EMT's in the field. Ms. Turner mentions that not only are "the staff in the emergency department delighted with the additional help," but the medical staff also has more confidence in many of the preliminary diagnoses they receive from many EMT's because they have worked personally with and now know the skills of those EMT's. According to Ms. Turner, the EMT-Volunteer program has "opened up communication between emergency care in the field and emergency care in the hospital."



Howard Cartwright, an EMT Volunteer, wheels a young patient to the X-ray Department.



Checking a patient's blood pressure is Howard Cartwright, an EMT Volunteer, while Dr. Louis Himes, an Emergency Department physician at PGH, watches. (Photos: Susan Thompson, PGH)



**DR. NAGEL**

**JOINS MARYLAND EMS COMMUNITY**

Heart-monitoring equipment and defibrillators used in on-site pre-hospital care by cardiac rescue technicians or "paramedic types" seem almost ordinary today. But in 1969, they made headlines in Miami. That was the first time in the U.S. that a person was successfully defibrillated in the street by Fire Department personnel under the advice of a remote physician.

That success was due in large part to the pioneering efforts and work of Eugene Nagel, M.D., who is now chairman of the Anesthesiology Department at Johns Hopkins Hospital. Although he has resided in Maryland less than six months, many EMS providers have already met him at EMS meetings throughout the State.

During the past 13 years, while holding several teaching appointments, he worked in Miami's highly developed EMS system and later at California's Harbor General Hospital (the model for Rampart Hospital in the TV series "Emergency"); he has also authored more than 80 articles and abstracts and accumulated an impressive listing of committee and other appointments. Yet the soft-spoken Dr. Nagel is modest and still as enthusiastic about his work as a newly trained EMT.

In fact, Dr. Nagel says that if he had to introduce himself he would stress the fact that although he has been active in "this resuscitation/rescue EMS field since roughly 1964" and has been concerned with operational research in health-care delivery "involving lots of night classes at fire stations and lots of riding in rescue vehicles," he thoroughly likes his work.

Dr. Nagel's interest in the EMT field goes back as early as

1960 and was partly rooted in and nourished by the work of Marylanders. He recalls "hearing of the outstanding work of the Baltimore Fire Department and Chief Marty McMahon's name came up repeatedly." Furthermore, if he "had to name a patron saint," he surmises that "Jim Jude would be it and that, of course, has its roots here in Maryland." Dr. Jude, "kind of the father of cardiopulmonary resuscitation" and the head of cardiovascular surgery at the University of Miami School of Medicine, sponsored Dr. Nagel's membership on the American Heart Association CPR committee. He suggested that they "work together to try to organize resuscitation services at Miami's Jackson Memorial Hospital which is about a 1300-bed, general care, teaching hospital." In addition, while attending meetings of the American Heart Association CPR committee, he "immediately became acquainted with two cardiologists from the Maryland area, Dr. Leonard Scherlis and Dr. Don Dembo," who were interested in spreading the new knowledge on resuscitation and encompassing all specialties.

It was not until 1964 at a meeting of the International Rescue and First Aid Society, however, that Dr. Nagel became aware of the degree of pre-hospital care being given. Being a "do-it type person rather than a thinker, planner type," he soon began to teach CPR to the Miami Fire Department. Wanting to increase the number of lives being saved "on the streets," he became intrigued with how he could modify pre-hospital care to add the dimension of medical personnel and the use of drugs, IV fluid support, and defibrillation if needed. He and his colleagues began experimenting with telemetry equipment, and a few years later in 1967 telemetry became operational in Miami's Fire and Rescue Service. The first attempt to defibrillate a patient was successful in June 1969.

Dr. Nagel notes that there were some obstacles in those inter-

vening years. First, they were building equipment they were not sure they could use. "The legality and restraints of practicing medicine in the streets was something that had never been tried." In addition, he coped with the understandable doubts of other people. For example, he recalls his Fire Chief "poked me in the chest one day with his finger and said, 'Doc, what are you trying to do? We're a Fire Department. You're not trying to make doctors out of our firemen are you?'" But there were also encouragements to his work, such as the doctor/nurse teams riding in ambulances as early as 1966.

Two years ago Dr. Nagel moved to California to be chairman of Harbor General Hospital's Department of Anesthesiology and vice-chairman of the UCLA School of Medicine's Department of Anesthesiology. There he worked with paramedics in an advisory capacity. During that period, he also advised the "Emergency" TV staff on a show utilizing the shock trouser and sat in on "rap sessions" to generate ideas for new shows.

Commenting on the status of emergency medical services, Dr. Nagel sees "EMS over the nation as a checkerboard of capability," and notes that "within a given area, the people's expectations must be realistically developed." To do this, he stresses the need for strong public education programs. In fact, he would like to see "an awareness of EMS even at the grade-school level," where fourth- and fifth-graders are eager to learn how to access the EMS system and how to recognize and do certain things like establishing a good airway. He praises Maryland's initiation of CPR instruction in the high schools as a step in this direction.

Although he assumed his post at Johns Hopkins Hospital only a few months ago, Dr. Nagel indicates a willingness to be of service to Maryland's EMS system if needed. Maryland most certainly will offer him many opportunities to do the "work he thoroughly enjoys."

# INITIATING BURN TREATMENT

*Burns* - the word conjures up horrible images in most minds: excruciating pain, disfigurement, family crisis, abandoned careers, long hospitalizations, multiple surgical procedures, years of rehabilitation. No other injury has such a far-reaching, dehumanizing potential.

Many burn injuries and deaths could be prevented. In Maryland, over 50% of the 185 deaths from burns recorded in 1975 were attributable to mishandling of smoking materials. Of this 50%, two-thirds involved alcohol. Although burn accidents are not limited to one specific environment, most burn accidents occur in the home, usually in the kitchen or bedroom.

Emergency care of the severely burned patient involves the following steps:

### 1. Stop the burning process.

Roll the victim on the ground or in a blanket to extinguish flames. Remove metal and smoldering clothing from body. Lavage and dilute chemical burns with copious amounts of water. In electrical injuries, separate the victim from the source of electricity, taking care to protect yourself from injury by using non-conductive equipment (leather belt around a leg, wooden stick to break contact, wooden-handled axe).

### 2. Ensure an adequate airway.

Tilt the head and provide pulmonary resuscitation as required (mouth-to-mouth, esophageal, or endotracheal intubation). Burns involving head and neck or those occurring in enclosed spaces may result in airway obstruction. If there are signs of airway obstruction or smoke inhalation, such as hoarseness, air hunger, excessive drooling, or retractions, an endotracheal tube should be immediately inserted if possible. Avoid

tracheostomy as an initial measure except in cases of proven cervical spine injury. Otherwise, pulmonary infection and increased morbidity could result, especially if the tracheostomy is performed through burned skin.

The burn injury doubles the oxygen requirement of vital organs; four liters of oxygen flow per minute is needed for most burned patients prior to and during transfer.

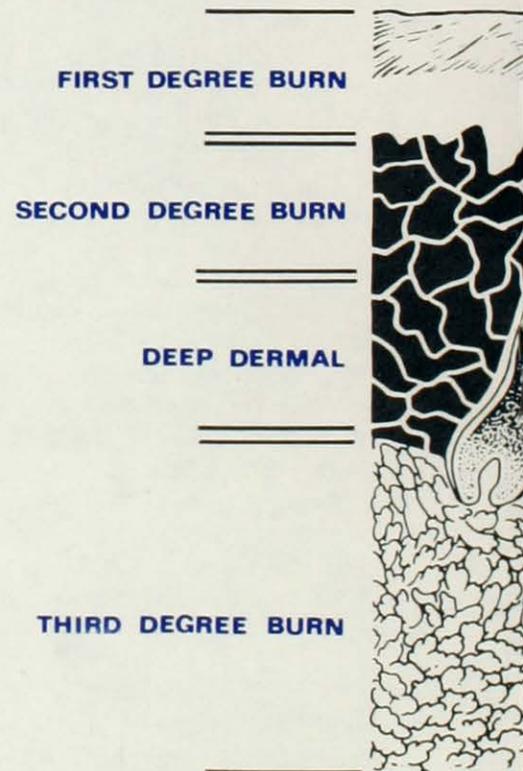
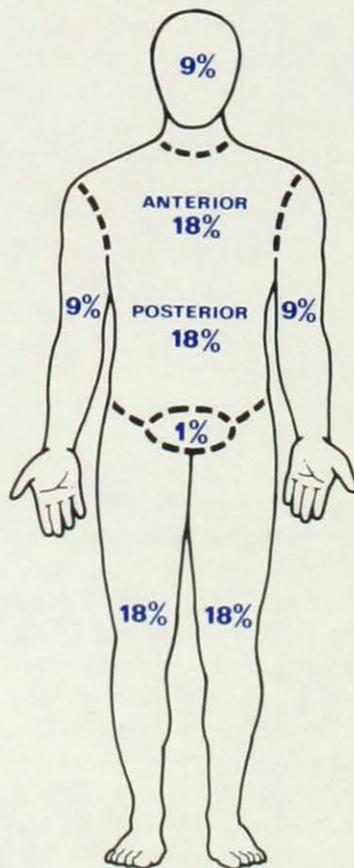
### 3. Establish circulation.

Ventricular fibrillation and respiratory paralysis are the principal causes of death in electrical injuries. Associated trauma with burns may also cause cardiac failure. In these cases, cardiac massage must be instituted immediately and sustained until efforts at defibrillation can be made.

Shock is usually a later development in the burn victim as compared to the trauma patient, but a burn patient trapped in a vehicle may have underlying associated injuries causing shock; therefore, check for abdominal injury and fractures. Observing sterile technique, establish an intravenous line using Ringer's Lactate through a large bore 8-inch catheter (18-gauge in adults) into the most accessible site. As a general guideline, second- or third-degree burns of 20% or greater body surface area (15% in children) will require fluid resuscitation. Plasma volume can be reduced by half in the first two hours postburn.

### 4. Obtain history and perform physical examination.

Communication with the burn victim may deteriorate rapidly as edema develops and pain medications are administered. Obtain as adequate a history as possible and record the findings. Communication may become impossible as hours pass. Important components



of the history are (1) nature of the injury, (2) time and place of accident, (3) previous treatment, (4) tetanus immunization, (5) other medical conditions, (6) allergies, and (7) family phone number. A thorough physical assessment is necessary. Rarely does a patient die immediately of his burn but a missed pneumothorax or cervical spine fracture may cost him his life. **TREAT THE PATIENT—NOT THE BURN.**

Estimate and chart the percentage of second- and third-degree burns using the Rule of Nines (see diagrams). It is usually accepted that an area equivalent to one side of the hand is about 1% of the adult body surface. In the case of a large area burn, it may be easier to calculate the area *unburned* and subtract.

#### 5. Begin fluid resuscitation.

Fluid requirements are based upon body surface area burned and weight. The method most frequent-

ly used is the Parkland formula [% Burn (2nd + 3rd degree) x weight (kg) x 4cc = fluid requirements for first 24 hours]. Half of this amount is administered in the first 8 hours; the balance is administered in the remaining 16 hours.

For example, a computation of the fluid required for a 180 lb. (82 kg) man burned 50% second and third degree would be:

$$\begin{aligned} 50 \times 82 \text{ kg} \times 4\text{cc} &= 16,400\text{cc}/24 \text{ hrs.} \\ \frac{1}{2} \times 16,400 &= 8,200\text{cc}/1\text{st } 8 \text{ hrs.} \\ 8,200 \div 8 &= 1,025\text{cc}/\text{hr.} \end{aligned}$$

All cases require observation of vital signs, clarity of the sensorium, ease of respiration, and a urine flow rate of 1 ml/kg/hr (approximately 50cc/hr in adults).

A Foley catheter to monitor fluid therapy and a nasogastric tube to relieve gastric dilation and aspiration should be inserted in all burn patients requiring fluid resuscitation. Diuretics should be used only for electrical injuries.

#### 6. Treat the burn wound.

Many care-givers mistakenly give wound care first priority. Pre-hospital wound care consists of covering the patient with a sterile or clean, dry dressing. Gross contaminants should be removed from the wound using sterile technique. Do not soak the patient with cold or ice water. Thermo-regulation is a problem for burn patients; therefore, the hospital examination should take place in a warm room free from drafts. If the patient is to be transferred to a burn center, wound cleansing, debridement, and applying topical ointments should be done there. Otherwise, ointments will have to be removed—a painful process—for re-evaluation of the burn wound.

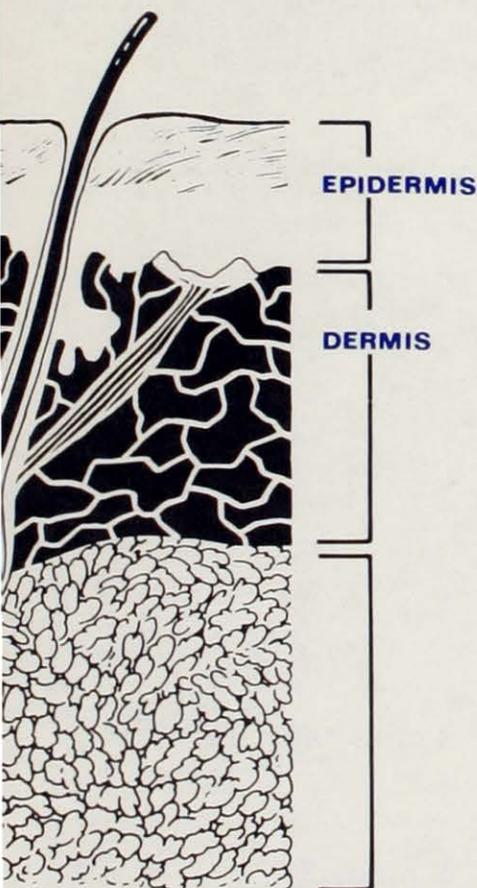
Tetanus prophylaxis is essential. You may elevate the head 30 degrees if the patient is not in shock and there is not suspicion of cervical spine injury. To minimize edema and circulatory embarrassment, elevate arms and legs higher than heart level.

#### 7. Relieve pain.

Protecting nerve endings from exposure to drafts by covering the patient minimizes pain. *Small* burn areas (4 x 4cm) may be submerged in cool water (not ice) for relief of pain. No analgesics should be administered until neurological and abdominal injuries have been ruled out and the patient has produced ½cc/kg of urine for ½ hour after initial Foley catheterization. No medication should be given intramuscularly or orally; it will not be absorbed due to poor peripheral perfusion and paralytic ileus. Much can be accomplished by a calm, organized approach to the patient. Fear of the unknown accounts for much anxiety. Emotional support and involving the patient in his own care decreases anxiety. The Burn Victim Aid Society of Maryland (396-5650) is one of the community resources that can be utilized for patient and family support in the acute and chronic phase of care.

#### 8. Transfer to burn center if indicated.

Maryland is fortunate to have the resources of an emergency medical services system and availability of two burn centers. Candidates for transfer to a burn center include those with chemical or electrical burns; those with second- or third-degree burns of the face, hands, feet, or genitalia; and adults with second- or third-degree burns of greater than 20% of the total body surface (10% in the elderly or children under 10). Patients are transported to a burn center after the initial resuscitation measures are accomplished, including the production of 50cc an hour of urine. The transport should be conducted in a comfortable and orderly manner for both the reassurance of the patient and the safety of the care-givers. The Baltimore Regional Burn Center and the Washington Hospital Center Burn Unit may be contacted for transfer or consultation via SYSCOM at 1-800-492-0610.



## NURSING WORKSHOPS SLATED



*DEMS nursing coordinator Sally Sohr, R.N., emphasizes a concept during a burn workshop.*

Four new workshops on the emergency care of the neonate, child abuse in the hospital setting, blood gases and ventilation, and orthopedic emergencies are now included in the DEMS continuing education program for emergency/critical care nurses. The new workshops are one-day sessions.

The total workshop series consists of 11 workshops. Continuing education units for each workshop are approved by the Maryland Nurses Association or other appropriate agencies.

A brochure and further information on the workshops can be obtained by calling a DEMS regional coordinator or the DEMS' Director of Nursing, Elizabeth Scanlan (528-6846).

## MD. D.O.T. FUNDS AMBULANCE, RESCUE EQUIPMENT

During the fiscal period July 1, 1975 to September 30, 1976, the Maryland Department of Transportation awarded a total of \$170,000 to 21 fire departments and ambulance and rescue organizations. The funds were awarded under Standard 311 of the Highway Traffic Safety Program for improvement of ambulance and emergency care equipment.

The Regional EMS Councils have established priorities for the Expression of Anticipated Requirements received for the fiscal period October 1, 1976 to September 30, 1977. These "expressions" are currently being processed by the Transportation Safety Division of the Maryland DOT.

Further information on Maryland DOT funding can be obtained from the regional coordinators.

Recipients of Maryland DOT funding during the fiscal period ending September 30, 1976 are as follows:

**Volunteer Fire Depts.:**  
Huntington; Bel Air; Waldorf; Bryan's Road; Grasonville.

**Volunteer Fire Companies:**  
Chesapeake City, No. 1; Ocean City; Greensboro; Singerly; Joppa-Magnolia; Snow Hill.

**Fallston Volunteer Fire/Ambulance Co.;** Tri-Towne Ambulance & Rescue Services; Frostburg Area Ambulance Service; Charles County Rescue Squad; Anne Arundel County, Prince George's County, and Baltimore City Fire Depts.; Clear Spring Ambulance Club, Inc.; Montgomery County Dept. of Fire & Rescue; Lavale Volunteer Rescue Squad.

## HEW FUNDS TOP \$1 MILLION

Through the efforts of the Division of Emergency Medical Services, the five Maryland Regional EMS Councils, and the Metropolitan Washington Council of Governments, \$1,367,229 in HEW 1203/1204 EMS funds has been awarded to Maryland for second-year EMS project continuation.

This HEW funding includes \$580,496 in 1203 funds and \$526,593 in 1204 funds for use throughout Maryland's five EMS regions, and an additional \$260,140 in 1203 funds provided for use in Region V through a Metropolitan Washington Council of Governments HEW 1203 award.

The second-year 1203 project funds are being used in Maryland's

EMS Regions I, II, IV, and V to continue and supplement the Division's efforts in establishing a basic life-support capability in the regions' respective counties. Specifically these funds are being used to initiate a cardio-pulmonary resuscitation (CPR) program in the State's secondary-school system; to provide further manpower and additional ambulance, hospital, communications, and training equipment; and to cover renovating costs for various emergency facilities which will facilitate the delivery of high-caliber emergency care.

The second-year 1204 project funds are being used in EMS Region III to supplement the State's effort in the establishment and expansion of an advanced life-support system within Metropolitan Baltimore. Funds are being used to support the State Helicopter Neonatal program (\$17,000), the Baltimore City Hospital Burn Center (\$187,110), and the three Neonatal Specialty Care Centers at Johns Hopkins, University of Maryland, and Baltimore City Hospitals (\$50,615). In addition, funds were allotted to provide regional manpower resources and communications equipment (this includes telemetry, microwave, and test equipment for Region III's Emergency Medical Services Communications System).

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## EVALUATION PROGRAM UNDERWAY

The Division of Emergency Medical Services is charged to ensure that Maryland's citizens have the best emergency medical services that its resources can provide. In order to meet that charge, it is essential that the Division work with all service providers—ambulance companies, hospitals, physicians, nurses, county governments, and the like—to assess services now being delivered, identify gaps and needs, and then obtain the resources to augment and improve service. Thus there is the Division's Program Evaluation effort.

The purpose of the evaluation program is not to rate and "gig" providers. Rather, the program is to help providers learn where improvements in their system can be made and to identify exemplary services that could be replicated elsewhere. Once worthwhile improvements can be specified, various offices in the Division can assist providers to provide training, secure equipment, obtain funding, etc., to implement them.

The DEMS evaluation program has three basic components. The first is an *inventory* of the State's system—manpower, facilities, and equipment. Regional Coordinators and the Regional EMS Councils are working with ambulance companies, central alarms, and hospitals to collect and keep current these data.

The second component is "process information"—how the system works. This includes such data as response time of ambulance runs, distribution of emergency department patient visits, and other measures of the *operation* of the system. The "Uniform Ambulance Runsheet," being jointly developed by the DEMS and the State's ambulance providers, will be one essential means to collect process data. The Maryland State Police Automated Accident Reporting System,

emergency department records, and logs kept by EMS communication operators are others.

The last component—and the most difficult to collect and analyze—pertains to the *outcome* or quality of patient care. Questions posed include "Are mortality and morbidity being reduced," and "Are patients receiving the best care we can provide?" The DEMS is utilizing a consultant to develop means by which answers might be revealed. Although there is no definitive agreement on what constitutes "quality care" or how it can be measured, the Division is tackling this problem to gain insight on how it is progressing toward its goal of delivering quality emergency medical care to Maryland citizens.

Inventory, operations, outcome—the key measures in program evaluation. Questions and comments should be directed to Paul Dorrett, Chief, Program Evaluation Branch at the DEMS central office.

### EVALUATION: THREAT OR SERVICE ?

In my travels around the State, I continue to encounter fear of the DEMS and, in particular, about the Division's Program Evaluation effort. I hear words like "It's a State takeover," "It's none of their business," "What do they need that for?"

The fear of a "takeover" or a rigid imposition of regulations is understandable. Examples of such by local, state, and federal government agencies abound. In fact, although it never left a preliminary stage, you may recall the ill-conceived proposal to regulate ambulances put forth by the Department of Health and Mental Hygiene before the DEMS was formed. So it is not without cause that fears are voiced.

But does the three years of DEMS operation bear out these fears? Certainly not. To the contrary, Dr. Cowley has often expressed basic DEMS policy to pro-

vide assistance to, and obtain *voluntary* cooperation among, local EMS providers. The DEMS, for example, is not making any demands on ambulance companies except to take reasonable care of the equipment, as we install \$4,500 worth of radios in each of your ambulances. The Division has yet to propose one restrictive regulation or law to gain control over providers, and the DEMS program evaluation effort is NOT a start in that direction!

As noted elsewhere in the article on evaluation, the DEMS has a responsibility to assist providers in identifying areas where improvements can be made and then to assist them in implementing the improvements—all on a *voluntary and cooperative basis*.

Statewide ambulance runsheets are a current cause of concern. Although the Department of Health and Mental Hygiene has the legal authority to collect such data, providers rightfully ask why the DEMS is embarking upon the project. The only purpose is to help you—the service provider—give better service to your community. In Garrett County, for example, the Division assisted the Regional EMS Council and local providers to identify a portion of their region with a poor ambulance response time due to distance (the type of data obtained on runsheets). DEMS then assisted in obtaining training and an ambulance to establish a new company and solve the problem. Similar assistance was recently given to Calvert County.

This is evaluation properly applied—it is the intention of this Division to keep it that way. Voluntary cooperation to improve service. So please think twice when questioning the DEMS program evaluation effort, including ambulance runsheets. Is it a move toward a state takeover, or is it yet another tool that *you* can use to provide better care to the citizens of your community?

—Charles W. Garrett,  
Deputy Director

## EMSCS COMPLETION NEARS

Development of the Maryland Statewide Emergency Medical Services Communications System (EMSCS) is nearly completed. Both in the Metropolitan Baltimore area where the existing EMSCS is being improved and expanded, and in the remainder of the State where the EMSCS is being installed for the first time, significant progress toward completion of the system has been made.

In the Metropolitan Baltimore region, a contract was let with the General Electric Company to re-crystal and modify the base stations and the portable radio units to make them compatible with the statewide EMS frequency plan. This includes the addition of the statewide EMS calling frequency (CALL-1) that will permit any ambulance in the State to communicate with the Metropolitan Baltimore Emergency Medical Resource Center when traveling through the Baltimore region. Twenty-five new telemetry and ECG interface units have been added to the Metropolitan Baltimore system, resulting in 53 of the region's 135 ambulances now having the capability for ECG transmission to a cardiac consultation center.

In addition, a contract has been let with the Atlantic Research Corporation to construct a basic microwave system in the Metro-

politan Baltimore region to serve as a control link between the Metropolitan Baltimore Emergency Medical Resource Center and the remote base stations of the system. This microwave network will replace currently used, leased telephone lines and will result in greater reliability and a lower operating cost for the system.

Elsewhere in the State, construction and installation of EMSCS equipment also is well underway.

All new radio towers (some as high as 200 feet) have been erected, and antenna and transmission lines have been installed on those towers as well as on existing towers being utilized by the State. Base stations and monitoring equipment have been installed in many of the 45 different locations used by the EMSCS in Regions I, II, IV, and V. Shipping and installation of the sophisticated operating consoles which become a part of county central alarms have commenced, with Prince George's County being the first to have the operating consoles installed. Most portable radios to be placed in ambulances have been delivered to county installers and await the delivery of the mobile repeater radio, also to go into the ambulances, for installation. The ambulance mobile repeater radios have suffered the greatest delay in delivery; this delay was caused by a decision of the Division of Emergency Medical Ser-

vices to utilize two new frequencies made available by the Federal Communications Commission for the statewide and local EMS calling channels.

Radio installation, to be followed by system testing and acceptance by the State, will proceed in the 19 counties outside of the Metropolitan Baltimore region on a county-by-county basis. Installation should be complete by early 1977.

## ATTENTION EMT'S

Has it been almost three years since you have received EMT certification? If the answer is yes, your certification will soon expire.

Recertification, however, is easy. If you take the 21-hour recertification course (seven three-hour sessions), you will review past EMS instructional material and have your skills checked by an instructor. No practical skills test is required.

If you need to be recertified, contact Joe Rudd at the Maryland Fire and Rescue Institute (University of Maryland, College Park), 454-5966, for further information. If your certification expires by December 31, 1976, you can have your certification extended for six months provided that you sign up for a recertification course. To apply for a certification extension, mail your EMT card to Joe Mikos, Emergency Medical Services, 25 S. Calvert St., Baltimore, Md. 21202.



22 S. Greene Street, Baltimore, MD 21201 phone: (301) 528-7800

Address Correction Requested

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