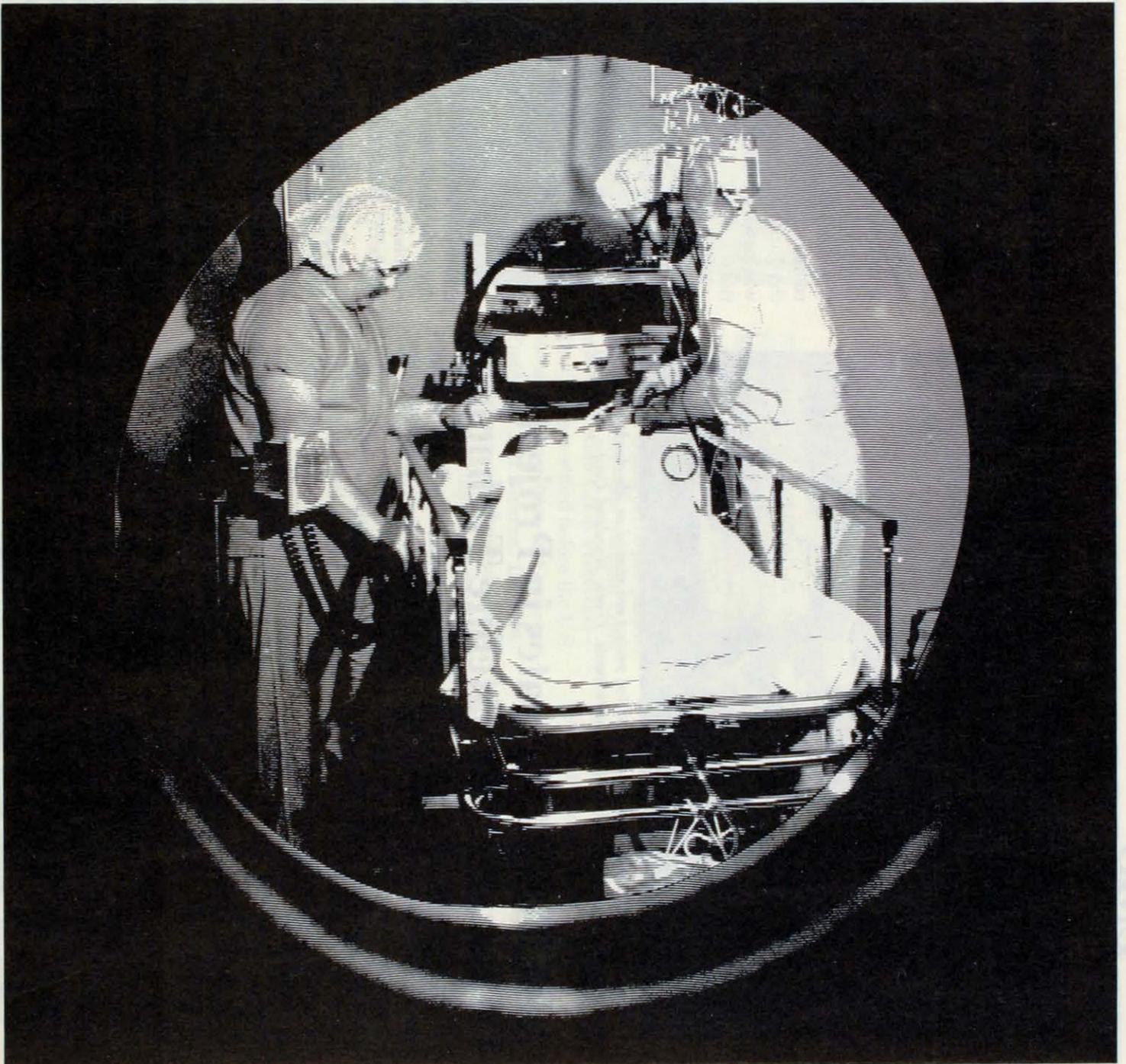


Maryland
EMIS
NEWS



MARYLAND INSTITUTE FOR EMERGENCY MEDICAL SERVICES VOL.5 · NO.1 · FEB. 1978



PMT

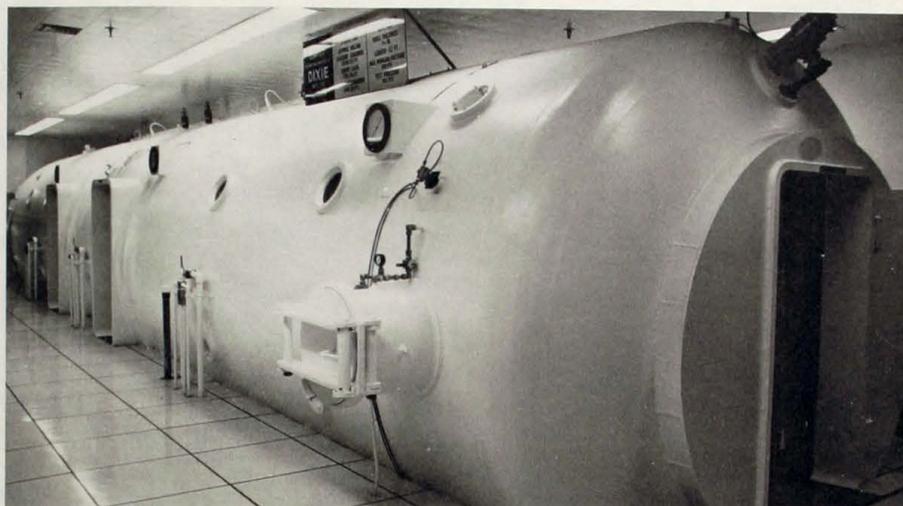
Chamber Use for Hyperbaric Oxygen Therapy Increases

The Maryland Institute for Emergency Medical Services (MIEMS) is exploring widened applications of hyperbaric oxygen (OHP) therapy. (This is treatment with 100 percent oxygen under increased barometric pressure.) During the past six months, the number of patients at MIEMS receiving OHP treatments has more than doubled; during the same period, the hours spent in OHP therapy have more than quadrupled.

Recently there have been reports hailing OHP therapy as a kind of "fountain of youth," resulting in "miraculous cures" of strokes and senility. MIEMS, however, is focusing on OHP treatment for gas gangrene, carbon monoxide poisoning, decompression sickness (bends), air embolism, osteomyelitis, and radionecrosis. (For these conditions there are reliable, documented studies indicating that OHP treatment, when used in conjunction with other prescribed treatment, is beneficial.) The kind and number of OHP treatments a patient receives vary according to the patient's particular condition.

Hyperbaric therapy is based on the principle that increased atmospheric pressure increases the amount of absorption and diffusion potential for the given gases in the blood. Atmospheric pressure increases the deeper one goes below sea level. In OHP treatments, the patient breathes 100 percent oxygen through a mask; atmospheric pressure within the chamber is increased by pumping compressed air into the chamber to simulate depth (thus, the terminology of "diving" a patient). This results in an increase in the amount of oxygen in the blood; more oxygen is therefore carried to the parts of the patient's body requiring treatment.

Hyperbaric therapy for patients began at MIEMS in 1967, mainly for cases of gas gangrene and decompression sickness. It has now begun to be used as an adjunct treatment to promote healing, especially for osteomyelitis (non-healing wounds of bone and soft tissue) and radionecrosis (non-healing wounds resulting from radiation). In addition,



MIEMS' multi-lock hyperbaric chamber is large enough to accommodate several patients simultaneously.

it is being used to aid the healing process in cases of compromised skin and bone grafts.

MIEMS is also trying to develop a special program involving OHP treatments for smoke-inhalation patients. Persons with 50-60 percent carbon monoxide levels in their blood invariably die; however, death has been recorded at lower levels. OHP treatment can reverse the effects of carbon monoxide poisoning.

MIEMS' multi-lock, walk-in chamber is large enough to accommodate several patients being treated simultaneously and members of MIEMS' medical/nursing staff accompanying them during treatments. One lock is a fully equipped operating room that can be used for surgery.

Patients and staff can communicate with the chamber operator via two-way intercom and phone; a TV monitor allows the operator to observe people in the chambers.

To explain hyperbaric therapy, clinical applications, and research potential, in-staff workshops were recently conducted for MIEMS nurses. In addition, background information on OHP therapy and on recognizing conditions appropriate for OHP treatment will be incorporated

into several nursing workshops taught throughout the state.

Further information about hyperbaric oxygen therapy can be obtained from Roy Myers, M.D., at MIEMS.

MIEMS Initiates Skills Training Program for E.D. Physicians

An intensive, skill-oriented training program for emergency department physicians will be offered April 10-14. The one-week course is being presented by the Maryland Institute for Emergency Medical Services (MIEMS) in conjunction with the University of Maryland School of Medicine Division of Continuing Education. Enrollment is limited to 24 physicians.

The course is designed to train emergency department physicians for leadership roles in EMS systems and to give them an opportunity to upgrade and refresh their skills in preparation for the newly-established board certification tests in emergency medicine (the first tests are tentatively scheduled for spring 1978). The course emphasizes practical skills; approximately 10 hours are allotted to didactic sessions and 30-40 hours to hands-on experience. All work is done in groups of four physicians.

The program consists of:
Advanced Cardiac Life Support. Developed by the American Heart Association, this course includes hands-on experience in specific skills such as recognition of arrhythmias, intubation, insertion of an esophageal airway, drugs, defibrillation, basic CPR, and I.V. insertion.

Computer-assisted learning. This phase makes use of the Medical Education Program of Harvard Medical School available through a computer link to Massachusetts General Hospital. By utilizing independent study in the computer-assisted learning labs, physicians can develop their skills in triaging, assessing, and treating patients en-

countered in typical emergency medical situations. Emphasis is placed on coma, trauma, arrhythmias, cardiopulmonary resuscitation, and abdominal pain.

Dog Laboratory. In this session, 13 procedures such as chest tube insertion, cut-downs, and opened chest cardiac massage will be demonstrated; physicians enrolled in the course will repeat the procedures under the direction of a MIEMS supervising surgeon.

Emergency medical services. Various aspects of an EMS system will be covered. Through lectures, demonstrations, and experiential sessions in crisis intervention, physicians will deal with subjects such as child abuse, drug overdose, rape, violence, suicide, and care of the family coping with sudden death. Burn Assessment is concerned with the initial treatment of burns by emergency department physicians. Other topics include: the role of the physician as it relates to nurses, paramedics, and other health-care providers; new equipment in EMS; the role of federal agencies in providing support for EMS; and goals and aims of the American College of Emergency Physicians. Tours of the specialty referral centers in Baltimore are also scheduled. Physicians enrolled in the course will also be assigned one evening to ride with ambulance crews.

After completing the course, physicians are eligible for ACEP credits and a maximum of 55 AMA Category I credits.

Tuition for the course is \$350. For further information or registration forms, contact John Stafford, M.D., Director of EMS Systems Programs, 528-7800.



Tom Baker, R.N., and Roy Myers, M.D., prepare to "dive" a patient in the chamber.

Looking at MIEMS

Last July the Division of Emergency Medical Services and the Maryland Institute for Emergency Medicine were amalgamated into the Maryland Institute for Emergency Medical Services. Perhaps this is an appropriate time to consider where the organization is now and where we are headed.

This redesigned newsletter itself is a symbol of our broadened scope. The newsletter has been expanded to reflect the many aspects of the combined emergency medical services programs. Therefore, you will find more details about the programs mentioned here in separate articles in this issue. We will continue to report to you on all the diverse activities of the amalgamated Institute.

Why were the two programs combined? The Basic Life Support system was already well established throughout the state. The next logical step was to develop and implement an Advanced Life Support (ALS) program throughout the state.

To accomplish this growth with the greatest cost-effectiveness, we merged the two existing EMS organizations. The addition of MIEM, the clinical and University-affiliated arm of Maryland EMS, was important because ALS requires greater involvement of hospitals, physicians, and medical professionals. As an autonomous Institute within the University, MIEMS enjoys academic and medical respect and status.

As a part of ALS development, the EMS system is cultivating a cadre of physicians throughout the state. Within each region, a medical control system is formed by a medical director and physicians representing six clinical emergency fields: trauma, cardiac, poison, burns, neonatal, and psychiatric emergencies.

The physicians from each of the specialty areas, as well as the medical directors, meet with their counterparts from the other regions several times a year to discuss needs and problems. These physicians serve as a link between local doctors and the central state office.

MIEMS continues to sponsor periodic workshops for physicians. This spring a week-long training program for emergency department physicians that emphasizes practical skills will be offered at MIEMS in conjunction with the University of Maryland School of Medicine Division of Continuing Education.

Another important element of Advanced Life Support is communications. Maryland's EMS communications system is now in place and operating. This system will greatly expand capabilities for prehospital care. Ultimately, however, Maryland will need a total microwave system.

Other recent progress includes the expansion of the Maryland State Police Aviation Division's Med-Evac program. Funding was approved in September for four more helicopters and increased manpower to provide 24-hour staffing.

This fall, two areawide trauma centers were officially designated as part of the "Echelons of Trauma Care" program — Suburban Hospital in Bethesda and Prince George's General Hospital in Cheverly. Peninsula General Hospital in Salisbury is scheduled to be designated next as an areawide center. Centers in Regions I and II will follow. The Echelons of Trauma Care are designed to provide the most appropriate emergency care for all Maryland residents, regardless of their location or injury.

This year, consumers have increased their participation in the Maryland EMS system. Strengthened regional councils are more involved in the EMS functions in their areas. This participation has helped assure the better utilization of available resources — hospitals, physicians, and nurses.

Hospital capabilities as well as prehospital emergency services will be tested this May when MIEMS sponsors an Emergency Medical Preparedness Exercise at Baltimore-Washington International Airport.

It has been a productive, busy year. And the year ahead promises to be eventful. We look forward to working with you toward even better emergency medical services in 1978.

R Adams Cowley, M.D.
Director, MIEMS

Nursing Grants Received

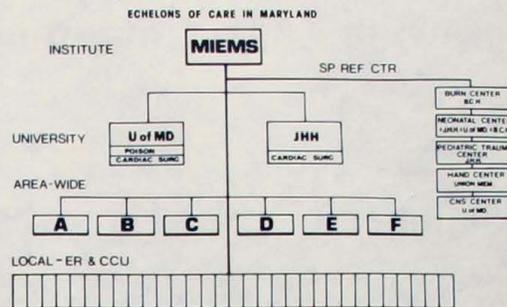
The Maryland Institute for Emergency Medical Services was recently awarded two federal grants for nurse training totaling more than \$188,000 for fiscal year 1978.

The first grant, providing \$103,328 under Title IX of the Nurse Training Act of 1975, will enable MIEMS to continue and expand its current nurse-training workshop program. Four nurses will be added to the current staff of four nurse coordinators, and the present emergency care nursing program workshop will expand from 12 to 15 clinical areas. (See article on nursing workshops.)

The initial funding period will be from December 1977 through

November 1978, with two additional years of funding recommended by the Department of Health, Education, and Welfare.

The second grant, an award of \$85,632 from HEW under Title VII of the Public Health Service Act, will provide advanced trauma training for nurses in designated state-wide and regional trauma centers currently being developed throughout the five EMS regions in Maryland. The in-depth trauma nurse training program being developed by MIEMS will emphasize advanced-level practical skills in caring for the trauma patient from the stages of initial care through rehabilitation.



Areawide Trauma Centers Open, Part of 'Echelons System'

Maryland is one of the few states with a functioning hospital "Echelons of Trauma Care" system for emergency medical services. It is designed to provide severe trauma care in a cost-efficient yet patient-effective manner, avoiding expensive duplication of services.

Four New Nursing Workshops Scheduled

Four new nursing workshops — Mechanical Ventilation, Spinal Cord Injury, Pediatric Respiratory Emergencies, and Change: Personal, Social, Institutional — are being offered in Maryland's five EMS regions. (See Calendar on p. 8 for specific locations.)

The new workshops — as well as programs on crisis intervention, child abuse, burns, cardiac emergencies, pediatric trauma, neonatal care, trauma, orthopedics, blood gases, diabetic emergencies, and respiratory problems — are offered to emergency department nurses throughout Maryland.

Topics covered in the one-day workshop on mechanical ventilation include the effects of mechanical ventilation, machine function, criteria for using and discontinuing ventilators, and complications of mechanical ventilation.

The first session of the workshop on spinal-cord injuries deals with anatomy, physiology, assessment, and treatment of spinal cord injuries. Total nursing care is discussed on the second day; among the topics considered are skin care, nutritional care, mobility of the patient, psychological aspects, and respiratory care.

The two-day Pediatric Respiratory Emergencies Workshop covers croup, epiglottitis, asthma, chest trauma, foreign body aspiration, pneumonia, poisoning, near drowning, family management, mechanical ventilation, nursing care, and case discussions.

The two-day workshop on change is concerned with the many facets of the change process. The workshop includes an explanation of the steps within the change process; practice in creative problem-solving skills utilizing existing problems; and discussion of present and future issues that will influence the nurse's role and ways to prepare for these changes.

Continuing Education Units (CEU) for the workshops are granted by the University of Maryland Continuing Education Department.

Further information on the workshops or scheduling them can be obtained by contacting the regional coordinators.

The "echelons system" will further help the state to provide the best care for all citizens, regardless of where their accidents may occur.

Fundamentally, the "echelons" system is based on the estimate that 85 percent of all trauma can be cared for by the average hospital emergency room. Ten percent of the remaining 15 percent can be taken care of by areawide trauma centers; these hospitals have met strict protocols in facilities and staffing and will receive patients by ambulance from a specified region surrounding the hospital.

Specialty Referral Centers

The final five percent — the most severe multi-system injuries as well as highly specialized problems such as severe burns and spinal cord trauma — will be Med-Evac'd out to the MIEMS specialty referral centers, representing the highest echelon of trauma care.

For Baltimore City, between the MIEMS and areawide trauma center levels, is the "University Center" echelon. Trauma centers at the Johns Hopkins Hospital and the University of Maryland Hospital will receive ambulance patients from Baltimore City. Two areawide centers are planned to complete coverage for the city.

Suburban Hospital Designated

In October, 1977, Suburban Hospital in Bethesda, Maryland, became the state's first official areawide trauma center. The official designation culminated a three-year preparation effort by the hospital. The trauma service, developed by Richard C. Myers, M.D., Chief of Trauma Surgery, is designated to serve all of Montgomery County.

Suburban's Department of Surgery initially established the hospital's trauma service in May of 1974. Modeled after the MIEMS Shock Trauma Center, the service will follow protocols established within the Echelons of Trauma Care system, including a minimum physician response time, specified equipment and facilities, and evacuation of appropriate patients to specialty referral centers, and participation in the evaluation system.

PGGH Named

Prince George's General Hospital became the second areawide center in December of 1977, under the direction of Joseph Colella, M.D. Serving an area within a 20-minute ambulance radius of the hospital, PGGH is the second center for the highly populated Region V — Southern Maryland.

(Continued on page 5)

Statewide EMS Communications System Now In Place

The State of Maryland has become the first in the nation to achieve statewide UHF emergency medical services communications.

The \$2-million system utilizes an ultra-high frequency (UHF) medical band to provide radio-telemetry communication between emergency medical teams in the field and consulting physicians at hospitals and specialty referral centers. Utilizing the other UHF EMS channels assigned by the Federal Communications Commission and additional communications modalities (land lease lines), the system can also link EMS components—ambulances, fire station central alarms, hospitals and helicopters—within one region and from any area of the state to any other area. As microwave capabilities increase, the number of land lines will decrease.

Communications plays a vital, integrating role in an EMS system. The capabilities of the EMSCS include emergency notification to appropriate agencies, dispatch of aid, response agency coordination (fire, ambulance, law enforcement, civil defense), decisions regarding patient disposition and care, and coordination among medical pro-

viders (e.g., hospitals, specialty care centers).



Ambulances are dispatched through county-wide Central Alarms.

viders (e.g., hospitals, specialty care centers).

Maryland's EMSCS system serves over 5,000 physicians, 12,000 nurses, and 45 hospitals (including three areawide trauma centers and five specialty referral hospitals with eight referral centers). The system serves 240 ambulance companies operating 350 first-run ambulances and 24 central alarm dispatch centers. Eight Maryland State Police, two U.S. Park Police, and several U.S. Army Med-Evac helicopters use the system several times daily. One statewide and 24 local civil defense agencies use the system primarily for disaster operations.

Before the EMSCS was established, only a few ambulances in Maryland could communicate with local hospitals. Basically, the EMSCS meets two general needs: a local need to enable communications among physicians, hospital personnel, ambulance attendants, and dispatchers in a local area for medical decisions and the direction of patient transport and care; and a statewide need for the rapid acquisition of the EMS system's resources. Local communications tend to be via two-way radio, with the statewide linkage through a com-

bination of radio and a network of leased and public service telephone lines called EMSTEL.

The Maryland EMSCS began development in the early 1970s under a federal grant for the metropolitan Baltimore region (EMS Region III); John Stafford, M.D. (now Director of EMS Systems Programs) was responsible for implementing the system. The Emergency Medical Resources Center (EMRC), placed into operation in May 1975, provided ambulance to hospital communications and cardiac telemetry capabilities for Baltimore City and the five surrounding counties.

The statewide system was mandated in 1973 with the creation of the Division of Emergency Medical Services by Executive Order of Governor Marvin Mandel. (DEMS is now part of MIEMS.) R Adams Cowley, M.D., then DEMS Director, immediately initiated efforts to implement a specific gubernatorial directive to "promptly develop a program for establishing and operating the statewide emergency medical communications system." DEMS contracted with a consulting communications engineering firm to design the system. At this

time, the states surrounding Maryland were also contacted to assure future communications compatibility with Maryland's proposed EMSCS. The electrical engineering company that won the \$2-million contract for providing the system hardware agreed to develop all new components for the communications system.

In 1975, through a mutual agreement between the DEMS and the federal Department of Health, Education and Welfare, the State EMS system took over operation of the metropolitan Baltimore system.

IN THE COMMUNICATIONS CENTERS

The nerve center of the system is SYSCOM, the Systems Communications Center. Located at MIEMS and staffed around the clock, SYSCOM has the ability to summon aid and coordinate the use of the state's EMS resources. The SYSCOM radio base station provides direct communication to ambulance and Med-Evac helicopters.

EMRC (or the Emergency Medical Resource Center), located at Sinai Hospital in Baltimore, is the communications center for Region III. Through EMRC, which operates 24 hours a day, it is possible for direct, on-the-scene, voice or telemetric communications to be transmitted from patientside or ambulance to any of the Region's 23 hospitals; four cardiac consultation centers; or eight specialty referral centers.

Almost all of Maryland's 24 local jurisdictions (23 counties and Baltimore City) are equipped with central alarms. These county-wide central alarms are staffed around the clock by trained, paid county dispatchers. All central alarms dispatch paid, volunteer, and private fire and ambulance companies, and several also handle dispatch of local law enforcement and Maryland State Police units in their regions.

EMSTEL, the statewide system of leased telephone lines, connects SYSCOM with the EMRC in Region III and with central alarms in each county in the other regions. As backup to the EMSTEL is a toll-free (from anywhere in Maryland) inbound WATS line to SYSCOM, which enables EMS providers anywhere in the state access to the state system.



Ambulance mobile repeater radio



A patient is defibrillated and the ECG transmitted to the hospital.



Patientside portable radio

IN THE FIELD

Because they were not designed and constructed at the same time, the EMRC and statewide portions of the EMSCS are somewhat different, although they have the same capabilities. Region III ambulances carry high-powered portable radios with the ability to transmit ECG telemetry.

In other regions, ambulances are equipped with permanently installed mobile radios and a separate light-weight, low-powered "patientside portable." The portable transmits from patientside to the nearest ambulance mobile radio, which simultaneously "repeats" the message to a base station. Monitor/defibrillators can connect to the portable or the in-ambulance radio for ECG telemetry transmission.



Terminal at Prince George's General Hospital's emergency room.

IN THE HOSPITAL

Special EMSCS hospital terminals are located in all regional hospital emergency departments and in cardiac consultation centers. Through these centers, ECG telemetry from the field is interpreted and medical direction and control are provided for advanced life support operations by ambulance cardiac rescue technicians. An ambulance crew can be placed in direct voice contact with any hospital emergency department, and the hospital emergency department receiving the patient can also monitor all telemetry and conversation between the consultation center and the ambulance crew.

Photo: Bill Clark, MSP

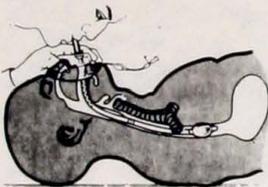
EOA, MAST Trouser Use Increases in Field Situations

The Esophageal Obturator Airway (EOA) and the MAST trousers will be utilized more frequently in field situations. After evaluating their effectiveness, MIEMS personnel are offering programs to both field and hospital personnel to familiarize them with how to use the two devices. These training sessions are needed since the EOA and MAST trousers can be dangerous to the patient if used improperly.

The EOA is actually two devices built into one. At the far end of the closed tube is a balloon that inflates in the esophagus and acts as a cork to the stomach to prevent vomitus from moving up the esophagus and being aspirated into the lungs (which could cause major complications). The EOA also provides a passage for air to the oropharynx and lungs.

However, the EOA should be used only when the patient is unconscious and lacks the gag reflex (that is, is unable to cough, gag, or swallow); for example, it should be used for patients in cardiac or respiratory arrest. It should not be used for patients less than five feet tall; patients who have ingested corrosive liquids; or patients with an esophageal disease.

Effectiveness of the EOA was evaluated for those patients meeting these criteria who were transported to MIEMS. Personnel conducting the one-year study worked closely with anesthesiologists, checking blood gas analysis and inspecting for proper placement of the EOA or possible injury incurred by using it.



Esophageal Obturator Airway

Their study has shown that the EOA is extremely useful in field situations. According to Lou Jordan, Paramedical Training Specialist, training in the use of the EOA is now part of the cardiac rescue technician (CRT) program, and plans are being made to incorporate its use in all basic emergency medical technician (EMT) programs in Maryland.

Mr. Jordan points out that many different models of the EOA are available and can be purchased by anyone in the field. He cautions that although techniques and guidelines for utilization are generally the same for all models, parts are not interchangeable for all models; being unfamiliar with a particular model could lead to disastrous results. He also emphasizes that personnel at hospitals should be familiar with the EOA, for if they mistake it for an endotracheal tube and remove the facepiece, the patient would not be properly ventilated.

For further information regarding the training sessions in the use of the EOA or on EOA guidelines, contact any of the EMS regional coordinators.

MAST trousers are utilized to counteract certain internal or ex-



MAST trousers are put on a patient.

ternal bleeding conditions and hypovolemia. The systolic blood pressure dropping below 100 is a relative indication for their use; dropping below 80 is an absolute indication.

When the trousers are put on the patient and inflated, they apply circumferential pressure to the lower extremities and abdomen. This slows or stops arterial bleeding and forces a large portion of the blood supply in the lower body into the thorax and head. Since the circulating blood volume is also prevented from returning to the lower extremities, there is less probability of irreversible damage to the cardiac and central nervous systems.

Utilizing the autotransfusion principle, the trousers have certain advantages over fluid replacement procedures. For example, it usually takes an extended amount of time to get a fluid line started; in addition, whole blood is not available in the field. (Even in the hospital, typing and cross-matching to check for blood compatibility is time-consuming.) These problems do not exist, however, with the trousers since blood is readily available within the patient's own body.

The MAST trousers should not be used when there is uncontrolled bleeding of the chest or head; for

congestive heart patients; or for patients with head injuries (the trousers increase the pressure in this area and may cause the bleed-

Rescue Squad Responds to Needs

In addition to its day-to-day patient rescues, the Northern Garrett County Rescue Squad responds to the needs of the surrounding communities in special ways — for example, working with local search and rescue teams and aiding neighboring states during disasters like the Johnstown Flood.

The Squad participates in an average of six search and rescues a year at the request of the Maryland State Police. There was a two-year-old lost in the woods; a man lost on Big Savage Mountain; a squirrel hunter lost in the woods; a lost mental patient . . . a lost teenager. The list goes on.

The search and rescue procedures for mountainous terrain were developed in 1973 by Squad members Floyd Baker and State Trooper Carl Skidmore. There had been an unusual number of persons lost in Northern Garrett County, a rural area covering 550 square miles with a population density of 32 people per square mile. Included in this area is the Savage River wilderness area comprising 62,000 square acres

ing to become more profuse).

Since indiscriminate use in unwarranted situations can compromise a patient's safety, proper training in the use of the trousers is extremely important. They should be utilized only under a physician's direction. The premature removal of the trousers by those unfamiliar with the device is one of the greatest dangers associated with the trousers. Furthermore, up to two pints of blood could be lost by opening the MAST trousers improperly.

Training programs in the use of the MAST trousers by field and hospital personnel began last August in most Maryland EMS regions. Further information on the utilization of the trousers can be obtained from the EMS regional coordinators.

of undeveloped forests and mountains. Baker's and Skidmore's goal was to develop a more thorough search plan for quicker recovery of a lost person.

Plan Formulated

Through the efforts and cooperation of several local agencies, a search and rescue plan was formulated. This established a chain of command for participants (including law enforcement agencies, ambulance units and rescue squads, fire departments, CB clubs, the Department of Natural Resources, etc.). Training for personnel and more effective communications procedures were subsequently developed. To refine rescue and communication techniques and familiarize members with areas where missions might occur, the Squad also holds simulated search and rescue missions on a regular basis. The search and rescue plan can also be adapted to any major emergency or disaster situation.

Johnstown Flood

The Squad's skills and training were also tested in an entirely different situation in Johnstown, Pennsylvania, about 35 miles east of Pittsburgh. It was the only Maryland rescue unit to go into the area during the floods that left 50,000 homeless last July. The Squad has 80-90 volunteers covering its headquarters in Grantsville and a sub-station in Accident, Maryland. Approximately 40 of those people worked 12-hour shifts in Johnstown from Friday to Sunday.

One of the main problems encountered, according to Squad member Pete Crowell, was keeping rescue equipment clean. Everything seemed to get bogged down in mud. The crews were constantly busy — taking care of inoculations, cuts, and bruises; helping physicians and field hospital personnel; using their rescue truck to provide lighting for helicopter landings. Rescue procedures were hindered, however, not only by water and mud but by the chaos resulting from the lack of central authority and the break-down of the communications system. There was crisis after crisis. But that, after all, is what the Squad has been trained to deal with.

EMT Practical Exam Revised

Since December 1, 1977, students completing the basic EMT-A course have been taking a new final practical exam.

During the past year, meetings across the state gave EMT-A instructors the opportunity to suggest improvements in the old format. The result of the discussions was the five-station practical test, which was then approved by representatives of the Medical Management group.

The most striking change from the previous exam is the standardization of instructions and equipment. Standard instructions are read to the students at each station. The evaluators are mute, passive observers. They are not allowed to question or remark on student performance. This assures that all students are evaluated equally. The format for the practical examination closely follows the National EMT Registry model.

If a student fails one or two stations, he or she may be retested in those areas. If three or more are

failed, the student must take a 21-hour refresher course, then retake the entire practical exam.

The five stations of the test consist of the following:

Patient assessment. This is a new addition to the exam where the student will evaluate and triage a patient with simulated injuries.

Bleeding and bandaging. The student treats specific bleeding wounds.

Fractures. The student determines treatment priority for a victim of multiple fractures and properly applies fracture immobilization devices.

CPR and oxygen use. Ability to perform CPR for adults and infants is tested, along with the proper administration of the oxygen bag-valve mask with supplemental supply and demand resuscitator.

Loads, lifts, and carries. The student is tested on his/her ability to properly immobilize patients with spinal injuries, using long and short backboards and cervical collars.

Med-Evac Helicopter Coverage Expands in Maryland

Med-Evac helicopter coverage of the State of Maryland is on the increase following the September 1977 gubernatorial approval of more than \$650,000 in funding for new helicopters, personnel, and expanded service. Acting Governor Blair Lee approved a proposal by the Maryland Institute for Emergency Medical Services (MIEMS)



A MSP Huey helicopter lands at MIEMS heliport. Four new Hueys will be added to increase Med-Evac coverage.

and the Maryland State Police Aviation Division to add four helicopters to the MSP's current fleet of 10, and to expand service to provide 24-hour coverage at four bases.

Currently, MSP helicopters are based at Andrews Air Force Base, Martin Airport, and Frederick Airport. Following the approval, the Frederick ship was rapidly placed on 24-hour availability. A fourth 24-hour base is planned for the Eastern Shore, due to its influx of population during the summer and weekends; the Salisbury base is expected to open sometime in the spring, starting with 16 hours a day.

The MSP helicopter fleet currently includes four two-litter Bell Jet Rangers, four large UH-1Bs or Hueys (three-litter), and two Sikorsky which can transport eight



litter patients and have a hydraulic hoist capability of 600 pounds for rescue work. The new helicopters, which are Hueys, are being transported to Maryland from Arizona. The Bell Jet Rangers will be used as primary ships with the Hueys for backup or special assignments.

The Med-Evac program began to evolve in 1967, when the University of Maryland approached the Maryland State Police to suggest the joint development of a helicopter program for transporting critically ill and injured patients. In 1968, a Department of Transportation grant was awarded for the program, which was entitled "Helicopter Patrol." An all-weather heliport was constructed atop the University Garage at the University of Maryland medical center, replacing an emergency ground pad used by military aircraft since 1967.

The MSP Med-Evac program transports critically ill and injured

patients from accident scenes and hospitals to the MIEMS specialty referral centers. The first official Med-Evac transport was made in 1969. The number of transports has steadily increased over the past eight years to a new high of over 1300 in 1977. In addition to the 814 adult trauma victims flown to the MIEMS, the Maryland State Police

Aviation Division transported 120 persons to the Hopkins Pediatric Trauma Center, 118 to the Baltimore City Hospital neonatal ICU, 77 to the University of Maryland Hospital neonatal ICU, 54 to the Hopkins neonatal ICU, 49 to the Baltimore Regional Burn Center at City Hospital, 29 to the Union Memorial Hospital Curtis Hand Center, 21 to the Washington Hospital Burn Center, nine to the Peninsula General Hospital (to be designated an areawide trauma center), and 35 victims in various "other" categories.

Helicopter crew members are selected from the ranks of the MSP who have already received standard and advanced Red Cross training. These troopers become certified as emergency medical technicians; they then rotate through the MIEMS Shock Trauma Center for further training.

Ten additional crew members are being recruited to accommodate the expanded helicopter service. According to Aviation Division Chief, Captain Gary Moore, five pilots and five medical observers are needed to staff each helicopter around the clock. Continuing expansion will depend upon need.

Echelons of Trauma Care (Continued from page 2)

At press time, Peninsula General Hospital in Salisbury, Maryland, was due to become the state's third areawide center, serving the Eastern Shore — Maryland Region IV. Peninsula will be the only areawide center to receive helicopter admissions, due to the geographical configuration of the region and the influx of population during the summer and on weekends. Twenty-four-hour helicopter coverage was recently approved for the Eastern Shore.

Areawide centers are still under development for Maryland Regions I and II — Western/Central Maryland.

News Capsules

New CRT Policies

New policies regarding Cardiac Rescue Technician (CRT) candidates and recertification of CRT instructors include:

1. A CRT candidate must be an Emergency Medical Technician (EMT) for one year or an EMT with 300 ambulance runs.

2. CRT instructors who participate in the recertification of CRTs will automatically be recertified as CRT instructors.

For further CRT information, contact any of the EMS regional coordinators.

ACEP Course Presented

MIEMS physicians, together with several University of Maryland Hospital physicians, presented the symposium on emergency management of trauma sponsored by the Maryland and Virginia chapters of the American College of Emergency Physicians. The program was held at the University's Health Sciences Library Auditorium on February 4.

Topics discussed included: assessment, resuscitation, and transportation of the injured patient; central nervous system injuries; chest injuries; common injuries of children; and abdominal trauma. The program concluded with a tour of MIEMS' Shock Trauma Center.

Trauma Center Tours

Tours of the Adult Trauma Specialty Referral Center at the MIEMS are being scheduled for groups of EMTs and CRTs in the field or in training. For further information or to schedule a tour, call Marianna Herschel, Public Information Officer, at 528-3697, weekdays from 8:30 a.m. to 4:30 p.m.

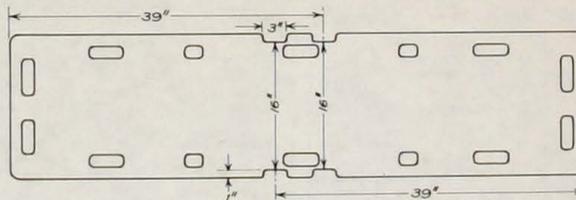
Physicians' Course Attended

Emergency room physicians from the Baltimore metropolitan area and the Eastern Shore attended an Advanced Cardiac Life Support Course, December 9 and 10, which was sponsored by the Maryland Institute for Emergency Medical Services and the Maryland Heart Association.

Taught by faculty certified by the Heart Association, the day-and-a-half course included lectures on airways, circulation, acid-base balance, useful and necessary drugs, recognition of dysrhythmia, defibrillation, cardio-version, stabilization, and transportation. CRT instructors assisted the faculty in teaching practical skill stations.

Upon completion of the course, participants were certified by the Heart Association and received ACEP Category I credit. Donald Dembo, M.D., of Maryland General Hospital in Baltimore directed the program.

Backboards Can Be Adjusted for Med-Evac Flights



The Transportation Committee of the Region II EMS Council offers the following suggestions concerning the use of full backboards in Maryland State Police Med-Evac helicopters operations.

When the observer seat in the Bell Jet Ranger helicopter is folded down to accept litter patients, there are two metal tabs of the latch mechanism that project out and over the framework upon which the litter rests. The distance between these two tabs is 16 inches. Wooden backboards built in accordance with American College of Surgeons recommendations are 18 inches wide. As a result, the backboard cannot be loaded level without interfering with the doorframe latch; it must be tilted, which is not in the best interests for patient care.

The Committee recommends the following action as the simplest way to overcome the problem:

1. Measure down from the head of the board 39 inches. At this point the board should be 18 inches wide. A 3-inch long notch should be made in both sides of the board approximately 1-inch deep

to reduce the board width to 16 inches. The 3-inch length will provide flexibility in the fore and aft positioning of the board in the Bell Jet Ranger helicopter.

2. Measure up from the bottom of the backboard 39 inches and make two more 3-inch long notches. This will allow the board to be placed in the helicopter in either direction. If the board is built exactly to ACOS specifications, there will be approximately one-fourth inch of wood between the notches and adjacent handholds.

Maryland EMS News

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22 S. Greene Street
Baltimore, Maryland 21201
Phone: (301) 528-6846
Director: R Adams Cowley, M.D.

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EMS Systems Support Auto Passive Restraints

Maryland EMS joined the states of Pennsylvania, Delaware, Virginia, West Virginia, and the District of Columbia last fall in urging the passage of a passive restraint regulation. At its annual meeting, the Mid-Atlantic EMS Council passed a resolution supporting Transportation Secretary Brock Adams' Federal Motor Vehicle Safety Standard 208—requiring passive restraints.

Despite heavy opposition, the regulation was approved by Congress. It requires a phasing-in of passive restraints in all new automobiles over a period of three years, beginning in September 1981.

R Adams Cowley, M.D., MIEMS Director and chairman of the Mid-Atlantic EMS Council, wrote to each of the six governors of the Mid-Atlantic states urging



Airbag effectiveness is demonstrated.

their support. Additionally, he wrote to the American Association for the Surgery of Trauma, the American College of Surgeons, and the American Trauma Society announcing the Council's position and requesting support.

Information regarding passive restraints was circulated to Mid-Atlantic members through Council Executive Director John Bacon. Member states then began their own letter-writing and support activities.

At the urging of the pro-passive restraint lobby—the National Committee for Auto Crash Protection—Dr. Cowley testified before the U.S. House Subcommittee on Consumer Protection and Finance. Dr. Cowley's testimony was directed toward the medical liabilities of disabling accidents which are borne by the general public.

Questions For EMTs

The following questions requiring medical direction were submitted by EMT Instructors and reviewed by representatives of the Medical Management Committee of the State of Maryland, answers to orthopedic questions were submitted by Frank Barranco, M.D., orthopedic consultant to the Medical Management Committee. The new testing procedures include many of these points.

When applying the short backboard, is it necessary to secure the head to the board first?

It is most important to maintain the proper alignment of the spinal column. If the EMT accomplishes proper immobilization, no matter what area is secured first, head or torso, the patient has been properly treated.

When utilizing a long backboard, must the patient be turned face up?

Patients should be carefully turned and secured in a face up position, the only exception being the laryngotomy patient who just requires back pressure arm lift artificial respiration.

How important is it to check for pulses and nerve function below the site of an injury before and after treatment?

It is imperative. The absence of pulses is a clear indicator for rapid transportation. Pulses and nerve function should always be checked before and after treatment.

Is it acceptable to treat a fracture of the humerus with a board splint on the inner aspect of the arm as illustrated in Emergency Care by Grant and Murray?

Yes, but the EMT must exercise extreme caution to prevent pressure being placed on the ulna nerve near the elbow and the nerves in the axilla. An equally adequate position for the board would be on the outer aspect of the arm. Remember to immobilize the joint above the injury as well. This can be done with a sling and swath.

When an air splint is used for a fracture of the forearm, how important is the position of function for the hand?

Most air splints encase the hand as well as the forearm, making it difficult to maintain the position of function. However, whenever possible, the position of function should be maintained.

Is it acceptable to treat a fracture of the forearm with an arm splint that immobilizes the hand, wrist, radius, and ulna, and then immobilize the elbow by using a sling and swath?

Yes, if the rescuer is sure of no damage to the elbow.

Can the cervical collar be put on a patient backwards to make the fastenings more accessible?

No, these devices are anatomically designed to fit the body. Reverse placement could lead to further injury to the patient. An adequate selection of sizes should be available to assure proper fit.

In what sequence should the secondary survey be performed?

Head to toe is the generally accepted procedure. This approach

(Continued on page 8)

Clip and Mail

Mailing List Update

THE MARYLAND INSTITUTE FOR EMERGENCY MEDICAL SERVICES

Information and Editorial Office
22 South Greene Street - Baltimore, MD 21201

MARYLAND EMS MAILING LIST UPDATE

We are currently updating our mailing list and need your cooperation. Please complete the form below and return it to us. Your assistance will assure that you receive only the mailings that would be of interest to you. If the categories below do not apply to you, check "Other" and whether you wish to receive the newsletter; then return the form to us. Thank you for your help.

LAST (11-25) FIRST (26-37) MI (38)

TITLE (Mr., Ms., M.D., etc.) (39-41) HOSPITAL AFFILIATION (if applicable) (42-56)

HOME ADDRESS (57-80)

CITY (81-94) STATE (95-96) ZIP (97-101)

COUNTY (102-114)

CATEGORIES (check and complete all applicable)

PHYSICIAN <input type="checkbox"/> (11) Specialty: (check 2 max.) <input type="checkbox"/> 1 Emergency Medicine <input type="checkbox"/> 2 Cardiovascular <input type="checkbox"/> 3 Pediatrician (12-13) <input type="checkbox"/> 4 Neurological <input type="checkbox"/> 5 Psychiatry <input type="checkbox"/> 6 Trauma <input type="checkbox"/> 7 Plastic Surgery <input type="checkbox"/> 8 Other (specify) _____ Affiliation: (check 2 max.) <input type="checkbox"/> 1 Hospital <input type="checkbox"/> 2 Industry <input type="checkbox"/> 3 Private Practice <input type="checkbox"/> 4 Academic <input type="checkbox"/> 5 Public Health (14-15) <input type="checkbox"/> 6 Inactive <input type="checkbox"/> 7 Other (specify) _____	NURSE RN <input type="checkbox"/> 1 LPN <input type="checkbox"/> 2 (64) Specialty: (check 2 max.) (65-66) <input type="checkbox"/> 1 Emergency Dept. <input type="checkbox"/> 5 Trauma <input type="checkbox"/> 9 Pediatrics <input type="checkbox"/> 2 Coronary Care Unit <input type="checkbox"/> 6 Burn <input type="checkbox"/> A Rehabilitation <input type="checkbox"/> 3 Neonatal <input type="checkbox"/> 7 Intensive Care <input type="checkbox"/> B Operating Room <input type="checkbox"/> 4 Psychiatric <input type="checkbox"/> 8 Spinal Cord <input type="checkbox"/> C Other Affiliation: (check one) (67) <input type="checkbox"/> 1 Hospital <input type="checkbox"/> 4 Private Practice <input type="checkbox"/> 6 Inactive <input type="checkbox"/> 2 Public Health <input type="checkbox"/> 5 Industry <input type="checkbox"/> 7 Other <input type="checkbox"/> 3 School Position: (check one) (68) <input type="checkbox"/> 1 Director <input type="checkbox"/> 3 Head Nurse <input type="checkbox"/> 5 Floor Nurse <input type="checkbox"/> 2 Supervisor <input type="checkbox"/> 4 Educator <input type="checkbox"/> 6 Other
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HOSPITAL ADMINISTRATOR (16)
TITLE (17-28)

HOSPITAL DEPARTMENT HEAD (69)
DEPT. (70-80)

EMT/A (29)
Latest Certificate Date mo yr (30-33)
Status Active 1 Inactive 2 (34)

EMT/A INSTRUCTOR (81)
Certificate Date mo yr (82-85)

CRT (35)
Certificate Date mo yr (36-39)
Check both below if applicable
 Paid (40) Unit (41-50)
 Vol. (51) Unit (52-61)

CRT INSTRUCTOR (86)
Certificate Date mo yr (87-90)

EMS COUNCIL MEMBER (62)
Region 1 2 3 4 5 (63)

LAW ENFORCEMENT (91)
LEGISLATOR OR STAFF (92)
OTHER Specify: _____ (93)

Do you wish to receive Maryland EMS News (no subscription cost) YES NO (94)

RECORD CODE - 1, 2 (01) ACTION CODE (02) A = ADD C = CHANGE D = DELETE

Clip and Mail



Ohio participants in the satellite demonstration project are viewed as life-sized figures on a projection screen by Maryland EMS participants. Photo: Maryland Center for Public Broadcasting.

MIEMS Participates in Projects Demonstrating Satellite Technology

Technology now exists to transmit interstate educational programs over hundreds of miles via communications satellites. What does this mean for medical education? How could communications satellites and portable earth stations be utilized during a disaster and in rescue work in remote areas?

These are some of the questions being asked as the Maryland Institute for Emergency Medical Services (MIEMS) participates in various satellite demonstration projects, in cooperation with the Telecommunications Office at the Maryland Center for Public Broadcasting.

Briefcase Transceiver Used

During a demonstration project last November, R Adams Cowley, M.D., Director of MIEMS, spoke with members of the Emergency Medical Services Communications Working Group at the U.S. Department of Transportation in Washington, D.C. (This special working group is part of the federal Interagency Committee on EMS, composed of representatives from the White House Telecommunications Office, Department of HEW, and the Department of Transportation.) This was the first EMS demonstration of a new portable, "briefcase" satellite earth station that runs on batteries and communicates through an orbiting satellite (in this case, an ATS-6 satellite hovering 22,300 miles above Christmas Island in the Pacific). The briefcase transceiver was developed by NASA's Goddard Space Flight Center in Greenbelt, Maryland.

Applications Noted

Dr. Cowley pointed out that the 22-pound briefcase transceiver would be particularly useful during a disaster situation when land communications were down. Communications could be established instantly to request aid from rescue agencies. Since the portable earth station is capable of transmitting voice and telemetry communications, a description of injuries could also be relayed to the hospital, and medical direction could be relayed directly to the person at the scene of the disaster. In addition, the briefcase transceiver could be utilized advantageously in remote areas having few physicians and hospitals to allow these physicians access to medical specialists. Dr. Cowley noted that with the addition of slow-scan video transmis-

sion, physicians would be able to see and more thoroughly evaluate the patient's condition.

During another satellite demonstration project last spring, Dr. Cowley and John M. Howard, M.D., along with EMS personnel, faced one another as life-sized color images on projected TV screens. Dr. Howard, Secretary of the American Trauma Society and Professor of Surgery at the Medical College of Ohio, was in Lima, Ohio, while Dr. Cowley was in Baltimore. The purpose of their meeting was to discuss potential satellite technology applications to EMS. The communications link was provided by the NASA-Canadian Communications Technology Satellite (CTS).

The implications of the three-hour meeting, held at Westinghouse Electric Corporation facilities in Baltimore and Lima, are significant. In the future, medical research findings and medical education courses could be transmitted instantly to medical institutions.



"Briefcase" satellite earth station

MIEMS Schedules Conference On Airport Mass Casualties

"Emergency Management at an Airport Catastrophe" will be presented by the Maryland Institute for Emergency Medical Services, in cooperation with the Baltimore-Washington International Airport, on May 12 and 13. The one-and-a-half day conference to be presented at the Airport will include a three-hour Emergency Medical Preparedness Exercise on May 12; a critique of the exercise; and a discussion on aspects of trauma management at a mass casualty site.

The scenario for the Exercise will be the collision of an airliner with a fuel tanker truck. Approximately 180 "victims" will receive various injuries such as burns, multiple fractures, etc.

As emergency medical plans go into effect, management of the mass casualties — including triage, stabilization, evacuation, and treat-

Funeral Home Provides 95 Years Of Ambulance Service in Md.

Ninety-five years ago George Eichhorn's grandfather, in the spirit of community service, offered to make ambulance runs for the George's Creek area in Allegany County. The ambulance service became part of the family business—the Eichhorn Funeral Home—and was passed down for three generations.

Today George Eichhorn and his partners (brother John and nephew George) no longer use their hearses to transport patients to Frostburg Community Hospital or Sacred Heart or Memorial Hospitals in Cumberland. After a year-long fund-raising drive and months of EMT training, George's Creek Ambulance Service became operational last December 1. That same day Maryland's last funeral-home ambulance service (provided by Eichhorn) closed its doors.

Traces Roots of Service

Until recently the majority of ambulances in small communities were often of the hearse or limousine variety; and the roots of ambulance service in many cases go back to funeral homes. Some people speculate that these vehicles were used because they were the only ones long enough to hold a patient on a stretcher. George Eichhorn agrees, but adds that in many instances funeral homes were started by families who had furniture stores. The vehicles used to transport furniture were used as hearses and later as ambulances. In fact, the Eichhorn Funeral Home, going back 105 years, was originally a furniture store.

Recalls Changes

Mr. Eichhorn, who made his first ambulance run "about 60-62 years ago" when he was 16, has seen a lot of changes in ambulance service. He can recall nights when someone pounded on the door to summon the horse-drawn hearse; the 1¼ hour drive to Frostburg Hospital (then called Miner's Hospital) which now takes only about 10-15 minutes; the deep mine accidents with their mass casualties; the problem of finances, of people forgetting to pay.

In February 1977, Mr. Eichhorn decided he had to discontinue ambulance service; since he did not want to leave the community without any ambulance transport, he agreed to take patients until the community provided an alternative.

At a public meeting called by the Mayors and Councils of Lonaconing and Midland (the main communities in the George's Creek area), plans for a volunteer ambulance service, EMT classes, and a \$15,000 fund-raising drive were discussed. Things began to move quickly. Technical advice regarding ambulance specifications and service, mutual aid agreements, and obtaining federal and state funds was obtained from the EMS Region I Advisory Council and MIEMS. Donkey baseball, dances, raffles, dinners, etc., were scheduled; by May, the goal of \$15,000 had been surpassed, but fund-raising continued for ambulance equipment and supplies. In May the first EMT course began. There were 20 participants (including the Mayor of Lonaconing), ranging in age from their teens to their sixties. That course ended in October and the second class is now in progress.

Lonaconing and Midland now have a new modular type ambulance based at the Lonaconing Town Hall not far from Eichhorn's Funeral Home. They also have a "rehabilitated" 1970 surplus Oldsmobile ambulance donated by the Civil Defense that is used for non-emergency transports. Four thousand people raised \$20,000. And, as many of them will not forget, the first donation—a check for \$500—came from George Eichhorn, whose family served the area for 95 years.

Directory of EMS Regional Coordinators

Region I — Appalachia Region (Allegany and Garrett Counties)
David Ramsey — Ravene St., P.O. Box 34, Grantsville, Maryland 21536, 895-5934.

Region II — Mid-Maryland (Frederick and Washington Counties)
Michael S. Smith — 1610 Oak Hill Ave., Room 134, Hagerstown, Maryland 21740, 791-2366.

Region III — Metropolitan Baltimore (Baltimore City and Baltimore, Anne Arundel, Harford, Howard, and Carroll Counties)
George Pelletier, Jr. — MIEMS, 22 South Greene St., Baltimore, Maryland 21201, 528-3930

Region IV — Eastern Shore (Cecil, Kent, Queen Anne's, Caroline, Talbot, Dorchester, Somerset, Wicomico, and Worcester Counties)
Marc Bramble; Marie Warner (Assoc.) — 7 Federal St., P.O. Box 536, Easton, Maryland 21601, 822-1799.

Region V — Metropolitan Washington (Montgomery, Prince George's, Charles, Calvert, and St. Mary's Counties)
Jeff Mitchell; Ed Lucey (Assoc.) — 5408 Silver Hill Rd., Suitland, Maryland 20028, 735-5580.

Maryland EMS News

Maryland Institute for Emergency Medical Services
University of Maryland at Baltimore
22 S. Greene Street, Baltimore, Maryland 21201

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325 E. Oliver St./Baltimore, Md. 21202

CALENDAR

STATE

EMS Nursing Workshops. Contact: EMS Regional Coordinators

- MARCH**
7, 8, 9 Crisis Intervention, Physicians Memorial, LaPlata
9, 10 Spinal Cord Injury, Spring Grove Hospital, Baltimore
14, 15 Cardiac Emergencies, Washington College, Chestertown
15 Orthopedics, Sacred Heart Hospital, Cumberland
15, 16 Burns, Salisbury State College, Salisbury
28, 29 Change: Personal, Social, Institutional, Frostburg State College
- APRIL**
4, 5, 6 Crisis Intervention, Spring Grove Hospital, Baltimore
12, 13 Burns, Calvert Memorial Hospital, Prince Frederick
17, 18 Burns, Sacred Heart Hospital, Cumberland
19, 20 Spinal Cord Injury, Salisbury State College, Salisbury
25, 26, 27 Crisis Intervention, Eastern Shore State Hospital Center, Easton
26, 27 Respiratory Emergencies, Chesapeake Community College, Wye Mills
- MAY**
2 Child Abuse, Woodmont Center, Bethesda
2, 3 Pediatric Respiratory Emergencies, Spring Grove Hospital, Baltimore
3, 4 Spinal Cord Injury, Howard Community College, Columbia
16, 17 Case Studies, Cumberland-Regional Hospitals
23, 24, 25 Crisis Intervention, Washington College, Chestertown
- JUNE**
1, 2 Spinal Cord Injury, Frederick Community College, Frederick
7, 8 Change: Personal, Social, Institutional, Spring Grove Hospital, Baltimore

Physician Workshop. Contact: John D. Stafford, M.D., 528-7800

- APRIL**
10-14 EMS Workshop: A Practical Approach (Emergency Physicians), MIEMS, Baltimore

EMS Conference. Contact: Program for Continuing Medical Education, University of Md. at Baltimore, 528-7346.

- MAY**
12-13 Emergency Management at an Airport Catastrophe, MIEMS and Baltimore-Washington International Airport, BWI Airport

NATIONAL

- MARCH**
15-16 Practical Management of Trauma, Cincinnati. Contact: Am. College of Surgeons, 55 E. Erie St., Chicago, IL 60611
16-19 Recent Advances in Emergency Medicine, Miami. Contact: Registrar, Sixth PGS, 600 Courtland St., Suite 420, Orlando, FL 32804
17 Triage & Disaster Planning, San Francisco. Contact: Donald Trunkey, M.D., California Medical Assoc., 731 Market St., San Francisco, CA 94103
20-22 Emergency Care, Illinois. Contact: Am. College of Surgeons Committee on Trauma, 55 E. Erie St., Chicago, IL 60611
20-24 Postgraduate Institute for Emergency Physicians, Trauma, General Surgery, San Diego. Contact: Corlyn Vance, Continuing Education Office, University of California, School of Medicine, LaJolla, CA 92093
29-30 Emergency Medicine, D.C. Contact: Assoc. for the Advancement of Medical Instrumentation, 1901 N. Fort Myer Drive, Suite 602, Arlington, VA 22209

NATIONAL

- 30-Apr. 1 Am. Burn Assoc. Annual Meeting, Birmingham. Contact: Charles E. Hartford, M.D., Crozer-Chester Medical Center, 15th St. & Upland Ave., Chester, PA 19013
- APRIL**
1 Use of Antibiotics in the Emergency Dept., Arlington, VA. Contact: Registrar, Maryland/Virginia Meetings, American College of Emergency Physicians, 3900 Capital City Blvd., Lansing, MI 48906
- MAY**
8-11 Am. Assoc. for the Surgery of Trauma Mtng., D.C. Contact: John A. Boswick, Jr., M.D., 4200 E. 9th Ave., Box C-309, Denver, CO 80262

Questions For EMTs

(Continued from page 6)

allows the rescuer to conduct his primary survey and then work his way down. By starting at the head, a possible cervical injury would be noted as soon as possible.

Is a long arm air splint adequate for a fracture of the upper arm? If so, is it tied onto the body?

No, to both questions. The bulkiness of the arm splint located below the head of the humerus may cause angulation of the fracture. The pressure on this area is increased when the arm is bound closely to the body, due to the bulkiness of the splint. This type of splint does not immobilize the joint above the injury. Properly placed board splints with sling and swath are adequate.