

Watching a professionally produced fireworks display is much safer than handling fireworks oneself. Many serious injuries, such as the hand injury shown, result from fireworks accidents. (Hand injury photo courtesy of Hand Center at Union Memorial Hospital)



Maryland
EMS
NEWS

Vol. 11 No. 1 JULY 1984

Fireworks Beautify or Mar 4th of July

Most people think of a hamburger when someone mentions a quarter pounder. But to some people, it means a

Hand-Injury Protocols: Prehospital Care

Do not attempt to wash, rinse, scrub, or apply antiseptic solution to wound.

Apply dry sterile dressing, wrap in kling or kerlix bandage, apply pressure and elevate.

Do not wash, rinse, scrub, or apply antiseptic solution to the severed part. Wrap it in dry sterile gauze or towel, depending upon size, and put it in a plastic bag. Place that bag on top of coolant bags (or a plastic bag containing ice) in a container, preferably one made of Styrofoam.

For a partial amputation, place severed part(s) in a functional position, apply dry sterile dressing, splint, and elevate. Apply coolant bags to the outside of the dressing.

THE AMPUTATED PART MUST NOT BE SUBMERGED IN ICE WATER. If the ice melts, replace with another bag of ice.

IV therapy, as indicated, using Ringer's lactated injection.

firecracker. For a few unfortunate Marylanders this Fourth of July, it may come to mean an amputated finger or hand.

A quarter pounder is one of the many dangerous fireworks that are illegal to sell or use in Maryland. It has the same explosive power as a quarter of a stick of dynamite.

Last Fourth of July, no patients with fireworks-related injuries were treated at the Raymond M. Curtis Hand Center at Union Memorial Hospital. "That was very unusual," says Pat Epifanio, staff development instructor in the hospital's Division of Community Medicine.

However, she says many people with serious injuries resulting from exploding fireworks have been treated at the center in the past. "Fireworks accidents usually result in the amputation of some part of the hand," she adds.

One of the worst injuries ever treated at the center was that of a 14-year-old girl who was holding a quarter pounder when it went off. The explosion blew off her left hand and parts of all the fingers on her right hand.

"Some of these accidents are caused by malfunctioning fireworks," says Ms. Epifanio. "They go off in the user's hand

either prematurely, or after they are picked up again because they didn't go off right away," she explains.

Another problem, she says, is that many people do not realize how dangerous fireworks are and, therefore, do not exercise enough caution in setting them off. This is especially true of youths who are 10 to 20 years old, the age group with the highest incidence of fireworks injuries, she says.

Fingers and hands that are amputated by exploding fireworks rarely can be reattached because the tissue is torn apart too much, says Ms. Epifanio. About the only thing that can be done in most cases is to clean and close off the remaining stump, she says.

To preserve the wounded stump, prehospital care providers should follow the established medical protocol for treating an amputation.

Quarter pounders, cherry bombs, and the like just give off a flash and a loud blast, says Ms. Epifanio. If people want to watch a really beautiful fireworks display, she suggests they go see one of the many professionally produced displays held in Maryland, most of which are free.

—Dick Grauel

Prehospital Airway Management

Fashions come and go, especially in spring, and EMS is no exception. However, changes that affect health, life, and death need to be scrutinized a bit more critically than changes in style alone. Recently it has become very fashionable in many parts of the country to be extremely critical of the esophageal obturator airway (EOA), to claim that it is outmoded and ineffective, and to encourage its abandonment. The purpose of this discussion is to review these claims and take a critical look at prehospital airway management for the benefit of Maryland prehospital care providers.

Far too often, discussions of airway management fail to emphasize the basics — maneuvers such as the chin lift and jaw thrust which may clear an airway without any instrumentation. Of course, in a traumatized patient special attention must be given to minimal manipulation of the cervical spine. Searches and claims for the “best” airway often omit the fact that an individual’s best airway is his natural airway — that is, the natural airway in an awake, spontaneously breathing, healthy individual. Obviously an individual who becomes a patient by virtue of acute illness or injury does not fit into the categories that provide him with the “best” natural airway.

If basic maneuvers such as the chin lift, jaw thrust, and clearing the airway of foreign material are inadequate, a bag-valve-mask system may be the next step, unless the patient needs immediate mouth-to-mouth ventilation. In special circumstances, a patient may need further airway support and ventilation.

Critics of the EOA have widely claimed that it was initially advocated as a substitute for endotracheal intubation. This is not, in fact, the case. The concept of the EOA was described in 1968 by Dr. T. A. Don Michael. In 1977 he reported experience with 29,000 EOA insertions; this report appeared in an abstract entitled “Esophageal Obturator Airway — A New Adjunct in Emergency Airway Management” (*Am J of Cardiology*, February 1977, vol. 39, p. 259). The authors of that abstract stressed rapid insertion (6 seconds) without interruption of CPR. Since that time, the EOA has been employed in approximately 2 million resuscitation attempts.

Recent studies and statements by a number of authors have been critical of the EOA. In order to assess the claims and counterclaims, let’s look at four issues:

adequacy, insertion time, complications, and training required.

In terms of airway control and adequacy of ventilation, endotracheal intubation offers direct access to the trachea. Once the cuff is inflated this should minimize, but does not necessarily eliminate, aspiration of foreign material into the tracheobronchial tree. Once the tube is taped securely, ventilation can be accomplished by using an ambu bag with one hand, although the endotracheal tube should also be manually secured when a patient is being moved.

The EOA should be conceptualized not as a ventilating tube, but as a ventilating mask. By obstructing (or obturating) the esophagus, the EOA minimizes reflux of stomach contents upwards and into the tracheobronchial tree. The esophageal gastric airway (EGTA) is a modification of the EOA with an open tube to allow gastric decompression. This modification may be beneficial in a patient who has developed distention from insufflation during BLS efforts.

Adequacy of ventilation with the EOA depends upon maintaining a good mask seal and obviously will require at least two hands to maintain this seal and ventilate. Results of blood gas analysis have varied among different authors and studies. However, in 1980, Dr. Harvey Meislin described arterial blood gases in patients who had an EOA placed in the prehospital setting and subsequently had endotracheal tube insertion in the emergency department. Comparing the arterial blood gases with both devices, he found no significant difference in blood oxygen levels or pH measurement. There was a significant difference in carbon dioxide levels in that a majority of patients demonstrated a decrease in PCO₂ following endotracheal intubation. It was also interesting that over half of the patients showed a decrease in PO₂ after endotracheal intubation. The author recognized that the EOA “does not replace endotracheal intubation.” He found that “in general, when blood gas analyses were good or bad with the EOA they were similarly good or bad with the ET ventilation, whether the patient lived or died” (*Ann Emergency Medicine*, February 1980, p. 54).

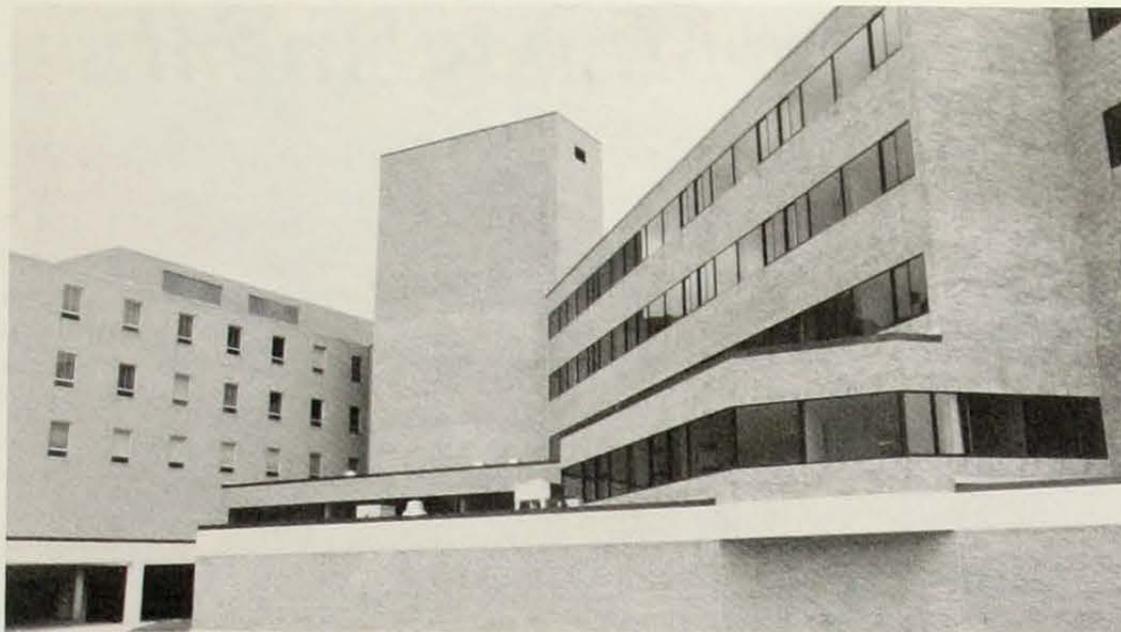
A review of the EOA was published in the *Journal of the American Medical Association (JAMA)*, August 26, 1983) by several people who looked at a number of previous studies. The authors criticized the study described above, in that blood gases

were obtained after four to five minutes of EOA ventilation in the emergency department. On this basis they felt that the study did not truly reflect the prehospital experience with the EOA. The authors argued in favor of a comparison of the bag mask, the EOA, and the endotracheal tube in patients undergoing prehospital CPR. The problem with this approach is that blood gases obtained from these patients reflect far more than simply the airway management alone; the blood gases are a reflection of airway management, adequacy and efficiency of chest compression, and total BLS and ALS measures. Even the accuracy of blood gas measurements in patients undergoing CPR may be an issue. Although the same authors claimed in another study that arterial blood gases with the EOA were inferior, they admitted that “it was often difficult to clinically determine an arterial from a venous sample [in patients undergoing CPR].”

The question of insertion time has recently been raised as a criticism of the EOA. Some authors have claimed that it may take several minutes to place an EOA. One group claimed that “the EOA took longer than four minutes to insert in 47 percent of cases” (“A Field Evaluation of the Esophageal Obturator Airway,” Smith et al, *J of Trauma*, April 1983, vol. 23 no. 4, p. 317). While this statistic, that it took longer than four minutes to insert the EOA in nearly half the patients, seems like an inordinately long period of time, it is also a misleading statement. In that group of patients time to insertion “was defined as the difference between the time when the rescuers arrived at the scene and the time the airway was adequately positioned as recorded by the rescuers.” In my opinion, using this definition of insertion time artificially exaggerates the length of time and is not an accurate reflection of EOA insertion time. Individuals with both field knowledge and experience know that BLS efforts must be begun at the scene before any further measures.

Training time and maintenance of skills are important issues in delivery of emergency health care. Training time for the EOA can usually be accomplished in two to four hours, while training time for endotracheal intubation often initially requires at least 10 to 20 times as much training. Likewise, maintenance of the skill requires far less time and retraining for the EOA than for endotracheal intubation (“A Positive Approach to the Esophageal Ob-

(Continued on page 3)



Region I's areawide trauma center is located in the new five-story wing of the Memorial Hospital of Cumberland. (Photo courtesy of Memorial Hospital)

Reviewing Airway Management

(Continued from page 2)

turator Airway," Cooper and McMullen, *Topics in Emergency Medicine*, July 1981, vol. 3 no. 2, p. 19).

Complications of the EOA have been cited as a major drawback to its use. Complications of the EOA are real, as are complications of virtually any invasive procedure within the health care field. The major EOA complications often linked are those of inadvertent tracheal intubation and esophageal injury. Care in placement as well as minimal movement of the EOA once the cuff is inflated, should minimize these complications. However, the possibility of complications must be anticipated, recognized, and managed.

Complications of endotracheal intubation, though less frequently discussed, are just as real. Endotracheal intubation, like EOA insertion, is not a benign procedure. While endotracheal intubation may present the best control of the airway in an unconscious patient, one study showed a 40 percent incidence of aspiration while another study showed 38 complications among 43 consecutive emergency department intubations.

What conclusions if any can be safely drawn from the data available? First, basic airway management is the primary component of all airway management. This includes clearing the airway and properly positioning the jaw to minimize the risk of airway occlusion from posterior motion of the tongue in an unconscious victim. Second, strict comparisons of the EOA and the endotracheal tube are not totally valid. The EOA was never intended to replace the endotracheal tube. Both techniques have advantages, disadvantages, and complications.

At the present time we would advocate that the EOA remain within the province of EMT-As who are trained and certified in its use and also remain as part of the armamentarium of CRTs (or intermediate EMTs outside Maryland). Endotracheal intubation should be a tool available to EMT-Ps. There may be situations in which an EMT-P may choose to place an EOA rather than an endotracheal tube (for example, if a patient is in a position which makes endotracheal intubation impossible or inadvisable).

The primary reservation we must add about EOA use is that the EOA should not be used in patients with significant intraoral bleeding. In such situations, the blood in the mouth and pharynx may be inadvertently ventilated into the tracheobronchial tree making ventilation more difficult and leading to a longer-term problem. In these situations, the patient should be ventilated with an oral airway and bag valve mask with suctioning of the airway as frequently as is possible during transport, unless the health care provider is trained in endotracheal intubation.

As we said earlier, fashions come and go, but health care cannot rely on fashions. Interventions affecting people's health and lives must depend on data which are critically analyzed. This article is neither the first nor the last word on airway management. It is our hope that with further data analysis we can provide health care providers in Maryland with more and better data on which to base their interventions.

— Ameen I. Ramzy, MD
Surgeon-Traumatologist, MIEMSS
Associate Medical Director for
Field Operations

Memorial Hospital Trauma Center

Memorial Hospital's areawide trauma center moved to new quarters on June 3. The emergency department, where the trauma admitting area is located, provides five critical care bays. Each bay is equipped with a power column that houses necessary equipment such as cardiac monitor, oxygen, and suction. The cardiac monitors also display at a central location, the nursing station.

Transportation of patients by helicopter is enhanced with the opening of the heliport located on the roof of the new wing. Patients are transported from the heliport by elevator to the trauma area in approximately 50 seconds.

The trauma area is located adjacent to the ambulance entrance; this facilitates the reception of patients who arrive by ground transport.

Also located next to the ambulance entrance is a decontamination room which can be entered from the outside. This area is equipped with a shower; any water that is used goes to a separate holding tank so that appropriate disposal can be arranged when necessary.

MIEMSS Saved . . .



Looking back to December 8, the day her husband's car was hit broadside and he was admitted to MIEMSS Shock Trauma Center where he spent 79 days, Carol Stachura feels MIEMSS "literally saved his life." She and her husband John were so grateful that they are letting the world know via their "T-shirts." Each of their four children also has a T-shirt with the words "MIEMSS Saved My Dad."

Speech Pathology: New Approach to Head Injury

The patient had multiple injuries, including a severe head injury. He had just regained consciousness, and the neurosurgeon at the MIEMSS Shock Trauma Center considered him neurologically stable — his intracranial pressure was stable and there was little swelling of his brain. As expected, the patient was disoriented, unaware of his surroundings, and not speaking. At the Shock Trauma Center, intensive and aggressive therapy to stimulate the patient to regain his cognitive-linguistic functions would begin with a neurosurgery referral to the speech-communication disorders program.

The speech-communication disorders program is the newest addition to the rehabilitation efforts at the MIEMSS Shock Trauma Center and, according to the director R Adams Cowley, MD, one that has been greatly needed. In speaking to that need, Dr. Cowley points to the severity of communicative, cognitive, physical, and behavioral deficits that usually make it impossible for head-injured patients to live normal, independent lives and to the sheer number of head-injured patients who are surviving traumatic accidents. National Head Injury Foundation statistics indicate that 700,000 Americans sustained severe head injuries last year; of these patients, 30,000–50,000 needed speech pathology, physical and occupational therapies, and psychosocial services. Approximately 800 head-injured patients are treated at the Shock Trauma Center annually. Head-injured patients benefited from excellent physical and occupational therapy programs at the Shock Trauma Center and the MIEMSS Trauma Rehabilitation Program at Montebello but they were missing speech pathology.

In most hospitals, head-injured patients receive speech pathology services only when they are in the rehabilitation center. The clinical staff at MIEMSS saw no reason why speech pathology services could not be started during acute care at the patient's bedside as soon as he was neurologically stable. They hoped that this early start in therapy would enable head-injured patients to progress more rapidly and reach higher levels of cognitive-linguistic functioning. They also felt that the speech pathology program should be built on solid protocols and its pathologists should be integral members of the medical care team.

In March 1983, Roberta Schwartz, MEd, CCC-SLP, was selected as director of the MIEMSS speech-communication

disorders program at the Shock Trauma Center and Montebello and given the responsibility of developing a total speech-language pathology program. In nine months — before any patients were treated — she developed protocols, ordered tests and equipment, recruited seven full-time professionals to rotate through the two MIEMSS centers, developed a budget and billing system, policy and procedure manuals, and performed the myriad administrative details necessary for the successful initiation of a program. When the first head-injured patients received speech-language pathology services in December 1983, they had the benefit of a total program.

According to Ms. Schwartz, the MIEMSS speech-communication disorders program focuses on the assessment and intervention of a wide variety of cognitive-linguistic and swallowing impairments through the administration of structured protocols and individualized treatment plans. The speech pathologists are also involved with clinical consultation, counseling families, teaching, and research.

“The clinical staff at MIEMSS saw no reason why speech pathology services could not be started during acute care at the patient's bedside as soon as he was neurologically stable.”

The disorders experienced by most head-injured patients include deficits to memory, thought organization, input processing, reasoning, problem-solving, and judgment abilities. Often the degree of dysfunction is related to the length of time the patient is unconscious. Their impact on everyday, independent living is obvious.

At the lowest cognitive level, patients are usually in a generalized response state. They open their eyes spontaneously or sometimes on command, but are not visually aware of their environment (such as family, staff, procedures performed). They are generally disoriented to time, place, and person. At this point, the speech-language pathologist will provide short, frequent periods of stimulation to the patient. The main objective is to increase the patient's awareness and arousal level, to increase attention span, and to ensure a more consistent, stable response to visual and auditory stimuli.

As the cognitive-linguistic system of

the head-injured patient regains function, the patient begins to process information and formulate responses in a more consistent and appropriate manner. The speech-pathologist may choose to concentrate on the patient's deficits in the area of higher level language abilities such as understanding abstract language, exercising flexible thinking, reasoning, or problem-solving. At this point, the speech pathologist is also helping the patient to evaluate or judge the accuracy or feasibility of his responses to “think through” solutions and become more aware of his errors. More logical and sophisticated communicative interaction is the result of therapy centering on the various components of language and cognition.

When the patient is discharged from the Shock Trauma Center, the speech pathologist advises the rehabilitation center as to what therapeutic progress has been made, what stimuli the patient best responds to, program goals and objectives, and patient and family education to ensure continuity of care.

In addition to providing services to the head-injured patient with cognitive-linguistic disruption, the speech pathologist also evaluates and treats patients with swallowing dysfunctions. The speech pathologist may also provide augmentative devices for patients unable to speak due to tracheostomy or being respirator-bound. For example, a small electronic larynx, which produces sound simulating the vibration of the vocal cords, enables a patient to “speak” when the device is activated and he “mouths” words. Other devices resembling small typewriters are used, or a patient may be able to benefit from the use of electronic voice-simulators.

Currently, the speech-communication disorders program treats only patients at the MIEMSS Shock Trauma Center and the Trauma Rehabilitation Program at Montebello Center. By December 1986, Ms. Schwartz anticipates outpatient and home-health speech-language pathology services.

Communication disorders as a result of head injuries are often termed invisible injuries. Through early, aggressive speech pathology services begun in the acute care setting and continued in a rehabilitation center and then in a community-based program such as the Center for Living, MIEMSS is hoping to decrease these cognitive-linguistic deficits and allow a more normal, productive life.

6 States Use Standardized EMT Exam



Developing a standardized exam for EMS personnel in a multistate area are (l to r) Gail Dubs, training coordinator, Pennsylvania Health Department; Lou Jordan, associate director of prehospital care at MIEMSS; Dr. Richard Judd of New Britain, director of the project for the Mid-Atlantic Council; Joseph Hickerson, education training coordinator, Connecticut EMS; James Gosselin, executive director, New Britain EMS; Dr. Harry LaPine, professor at Central Connecticut State University and testing consultant to the project. (Photo courtesy of Central Connecticut State University)

A standardized EMT certification examination that was developed under the auspices of the Mid-Atlantic Council is now used in a number of states. The states presently participating are Maryland, Pennsylvania, Virginia, West Virginia, New Jersey, and Connecticut.

The test items have been scrutinized by medical experts in all of those states, and were shown to be valid and reliable in pilot tests conducted in four of those states, including Maryland, says Lou Jordan, associate director of prehospital care at MIEMSS.

"By having a common bank of test questions, the EMS officials in the states that belong to the testing project can be reasonably sure that EMT certification in one state is equivalent to EMT certification in the other states," says Mr. Jordan. "This moves us up one step closer to mutual interstate reciprocity for EMTs," he adds.

Another advantage of this approach to EMT testing, says Mr. Jordan, is that it provides for specific licensing and certification requirements, based on pass/fail criteria in specific areas of the EMT ambulance curriculum. Although the testing is standardized, it allows for the variation that still exists in the EMT protocols of the states involved, Mr. Jordan says.

The testing committee of the council, which constructed the test, met for the first time in May 1982 at the Central Connecticut State University to develop a blueprint for selecting the test items for the test.

First, the committee selected five

categories of EMT training that should be covered on the test. They were basic life support, wounds, bleeding and shock, musculoskeletal injuries, patient assessment, medical emergencies, and general knowledge. Then the number of questions that should pertain to each training category was determined. Previously conducted research was used to assist in this determination.

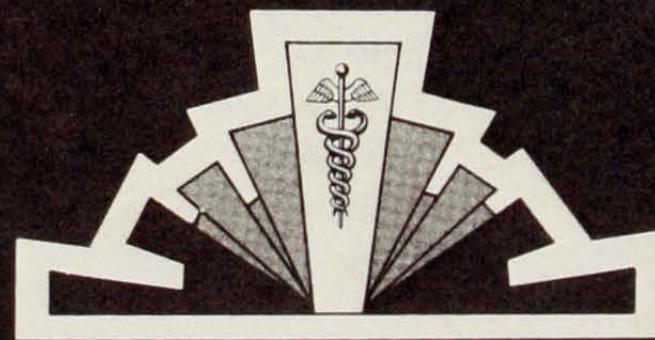
Next, the committee devised a system for identifying each test item by correct answer, training category and subcategory, instructional objective, level of knowledge, source of information, state of origin, level of difficulty, and point biserial correlation.

Finally, the test items were selected from the pool of questions submitted by all of the states represented, using the previously devised blueprint. Each item also was scrutinized by the medical directors of the participating states.

In October 1982, the National Council of State EMS Training Coordinators reviewed and piloted the test at its annual meeting. An analysis of the results of this first pilot study by the testing project's Steering Committee led to revision of the test. Subsequently, pilot studies of the test were conducted in Maryland, Virginia, West Virginia, Pennsylvania, Rhode Island, and Connecticut. Further changes were made in the test, based on the results of these studies.

Since that time, the test has been reviewed twice a year by the test project officers, a committee consisting of the medical directors of the participating states, educators, and a psychometrist. The comments of the committee have been used in conjunction with statistical data in updating the test.

— Dick Grauel



Expanding the Spectrum

SEVENTH NATIONAL TRAUMA SYMPOSIUM

SEPTEMBER 24-26, 1984
BALTIMORE CONVENTION CENTER

Sponsored by the Maryland Institute for Emergency Medical Services Systems

Physicians, nurses, administrators, and psychosocial clinicians are invited to attend the 7th National Trauma Symposium. Break-out sessions will be organized around resuscitation, surgical intervention, critical care, rehabilitation, and postacute care of the trauma patient. For further information, contact Patricia McAllister, MIEMSS (301) 528-2399.

Plan Proposed to Overhaul EMSCS

An eight-year plan to modernize and expand the Maryland emergency medical services communications system (EMSCS) has been submitted to university and state officials for their approval.

"I'm very optimistic that the state will provide the necessary funding to support this vital communications system," says William E. Clark, director of MIEMSS field operations.

Actually, two different eight-year plans have been proposed, offering state officials alternative approaches to replacing and upgrading the obsolete EMSCS. However, both plans suggest there is no choice in the matter of relocating the Emergency Medical Resource Center (EMRC), currently situated at Sinai Hospital.

EMRC is to be merged with the Systems Communications Center (SYSCOM) at the MIEMSS Shock Trauma Center in approximately five years when a new building to house the center is expected to be ready for occupancy.

However, a needs assessment report on the Maryland EMSCS — issued in June 1982 by Spectra Associates, Inc., an independent consulting company — states: "... the Operations Center consolidation plan **must seek** other quarters, for further delay places the entire center operations in jeopardy."

This prediction almost came true last summer, when the air conditioners at EMRC failed, causing the temperature inside the electronics cabinet to rise 20 degrees above its design limit, says Richard Neat, director of EMS communications for MIEMSS. "EMRC was on the verge of burning up. A total system failure was averted only by our frantic efforts to cool the place off with several large fans," he says.

Mr. Neat says EMRC also has serious communications hardware problems. Chief among these problems is that the electromechanical telephone line switch that controls all EMRC communications is obsolete. The switch was not designed to handle the current volume of EMS calls that occur in Region III, which is triple the volume of 1975, when the Maryland EMSCS went into operation. The switch becomes overloaded during peak periods of emergency medical service, resulting in about a two-minute delay in obtaining medical assistance for prehospital personnel.

Replacing the switch at its present location with a new one that has a greater

channel capacity would require shutting down EMRC for three months, according to Mr. Neat. Since that would not be feasible, the only alternative is to install a new switch at a different location and then move the EMRC operation to that new location when the switch becomes functional, he says.

MIEMSS officials are considering moving EMRC to the Montebello Center, where the MIEMSS trauma rehabilitation unit is located. But the new site for EMRC, wherever it turns out to be, will be temporary until the new Shock Trauma Center building is completed. When EMRC is merged with SYSCOM in the new building, the temporary communications center will remain in service as a backup facility.

Of the two eight-year plans that have been proposed, the one that Messrs. Clark and Neat would like to see implemented would provide the means for in-house development of some of the new communications equipment to be acquired and would save the state about \$4.5 million in initial costs, as well as minimize repair costs in the future.

Most of the savings would accrue by modifying over-the-counter radios to permit patient-side consultation between prehospital care providers and hospital-based physicians instead of purchasing new radios that are specially designed for that purpose.

To accomplish this development work in-house, some of the routine and emergency maintenance work currently performed by staff technicians would be contracted to outside vendors. But the cost of farming out this work is meager compared to the amount that would be saved in purchasing the needed equipment, says Mr. Clark. "The greatest potential for cost containment is in development," he adds.

One of the benefits of the MIEMSS-developed radio equipment to prehospital care providers is that the patient-side portable radios that would be used with the new system are lighter. Resembling walkie-talkies, these radios weigh only two pounds, compared to 30 pounds for the currently used model.

Another advantage of the smaller portable radios is that they are easier to use because prehospital care providers would not have to be concerned with channel selection and tone codes. For prehospital care providers outside of Region III, this also eliminates the problem of un-

necessarily tying up a medical channel. There would be no need to gain access to a medical channel until the user is ready for consultation.

The new radio equipment would be installed in all ambulance and rescue vehicles in the state that are in operation at the time the eight-year plan is funded, Mr. Neat points out.

"The radio equipment in the ambulances that were put into operation after the EMSCS was implemented had to be purchased with local funds," notes Mr. Neat. "If the eight-year plan is approved, the funding will cover the installation of the MIEMSS-developed radio equipment in these ambulances," he says.

Additional cost savings would result from microwave system planning and from in-house development of the communications consoles that would be installed at EMRC and at the central alarms in all of Maryland's local jurisdictions. These consoles would have greater channel capacities than do the currently existing consoles, eliminating the delay in obtaining consultation during times of peak EMS activity.

In concert with increasing the channel capacity of the consoles, the number of base stations will be increased to provide more medical channels. In addition, the number of base station sites will be increased to eliminate the "dead spots" in EMS communication in Maryland.

Other improvements in the EMSCS, called for in the eight-year plan, would solve the problem of communication interference from EMS communications in surrounding states and from med-evac helicopters.

— Dick Grauel

St. Mary's New Hospital

St. Mary's Hospital was dedicated on April 1. The new hospital has 114 beds, of which 6 are in the ICU/CCU and 11 are in the emergency department. Six of the beds in the emergency department are monitored, with four designated for trauma patients and two for cardiac patients.

A new central monitoring console, purchased with DHHS 1204-2 funds, permits physicians and nurses to receive telemetry signals from an ambulance and to monitor three cardiac patients at a central station.

A heliport is located adjacent to the emergency department entrance.

SYSCOM Volunteer Donates over 1300 Hours

"When you get EMS in your blood, you can't get it out," says Ray McFarland, explaining why he works as a volunteer operator for the Systems Communications Center (SYSCOM) at the MIEMSS Shock Trauma Center.

Mr. McFarland's enchantment with EMS goes back to his high-school days in Cleveland, where he served as an ambulance aide with a private ambulance company. Since then, he has not always had enough free time to pursue his avocation, but he says he just can't stay away from it.

After three months of training, Mr. McFarland spent his first night as a full-fledged SYSCOM operator on New Year's Eve, 1981. "I came to work expecting things would be hopping. But it turned out to be a quiet night because the weather was bad," he says.

The evening of February 29 of this year was anything but dead, however. Nine patients were transported to the Shock Trauma Center by Maryland State Police Med-Evac helicopters that night. Five of those patients arrived within 19 minutes of each other.

To appreciate the stress that such a patient load puts on the SYSCOM operators, you have to realize that, for each transport, the operators on duty must make 18 to 25 radio or telephone calls to coordinate all of the personnel and resources for transporting and receiving the patient, says Mr. McFarland. "Once the patient is airborne, everything and everyone should be ready and waiting for him," he adds.

One of the two SYSCOM operators on duty at any particular time is responsible primarily for coordinating Med-Evac transports, which include setting up communication links between prehospital care providers in the field and hospital-based physicians, or between physicians for inter-hospital transfers.

When the patient is flown to the Shock Trauma Center, the other SYSCOM operator alerts the admitting area staff and keeps them informed of the patient's condition. This operator also mobilizes the various emergency personnel who meet the patient at the heliport. If one of the operators becomes overburdened, the other shares the load temporarily.

In 1983, SYSCOM operators made 71,481 outside calls in coordinating the 4,348 Med-Evac helicopter transports that occurred. They also handled 96,287 internal pages to the center's staff members.

Despite the sometimes frantic pace, Mr. McFarland says working as a SYSCOM

operator relaxes him because "it focuses your attention, especially when three helicopters are in the air at the same time." At times like these, he says he doesn't have time to think about the problems of his work as an engineer for the U.S. Department of Defense. His volunteer job therefore "serves as a balance" to his regular job.



Ray McFarland works as a SYSCOM volunteer.

"SYSCOM may not be as stressful for me as it is for a full-time operator, who is exposed to that kind of stress day after day," says Mr. McFarland. The main advantage of his volunteer work to SYSCOM, he says, is that it helps reduce the load for the regular operators. "I have a lot of respect for the 'regulars' and I appreciate the cooperation I get from the field providers, the fire boards, and the hospitals that are involved in transports," he says.

Having Mr. McFarland on call to fill in for an operator who cannot make it to work eliminates the need to overwork the other operators, says Skip Baylor, SYSCOM supervisor. Mr. McFarland has provided SYSCOM with more than 1,300 hours of service since he started volunteering, notes Mr. Baylor.

Mr. McFarland also comes in one or two nights a week just to maintain his proficiency in handling the phones and to keep current on changes in procedures, which occur almost daily, he says.

Is that enough to satisfy his yearning to be part of EMS? "Not really," he says, "right now I'm training to be a volunteer driver of the emergency transport van used in the Maryland Regional Neonatal Program."

—Dick Grauel

EHS Graduate Program Offered

The department of emergency health services, University of Maryland Baltimore County, in cooperation with MIEMSS, has received formal approval from the State Board of Higher Education to offer a graduate study program in emergency health services.

Designed to provide a graduate-level service to health care providers (including trauma and emergency department physicians), educators, and administrators involved in EMS, the program offers three options.

They include: administration, planning, and policy; preventive medicine and epidemiology; and instruction systems development. Each of these options is structured around a common core of 15 semester hours, in addition to specialty courses. Under rare circumstances and with the advisor's approval, options could be combined to meet a student's special needs.

Candidates for the EHS master's program should take the Graduate Record Examinations at the earliest possible date

and consult the UMBC Graduate Catalog for further requirements and deadlines. Those wishing to enroll in one or two courses without degree candidacy may register as advanced special students, provided they have at least a "B" average in their baccalaureate studies.

If you are interested in the UMBC graduate program, you should contact Dr. John C. Lewis for an appointment to answer your questions and to discuss a potential program design for you. You may call or write: Dr. John C. Lewis, Graduate Studies, UMBC, 5401 Wilkens Avenue, Catonsville, MD 21228; (301) 455-3223.

This fall UMBC will offer the following three-credit graduate courses: Proseminar in Emergency Health Services (Tuesdays, 7–10 pm) and Management Information Systems Design for Emergency Health Services (Thursdays, 7–10 pm).

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Emergency Medical Services Systems
for
Maryland Institute
Published monthly by the



EMS Training for Police Improved

Police officers in many instances are the first on the scene of emergencies. To properly train these officers, the Department of Transportation has developed a 40-hour first responder program, previously known as crash injury management.

Recognizing the need to provide this important training to more than 11,000 police officers in Maryland, the Police Training Commission, working with MIEMSS, has been sponsoring training programs for emergency care instructors to enhance and standardize the quality of first responder training for police officers.

A series of workshops was conducted with police instructors to determine needs and to establish a course of action for future training programs. Among the areas identified and being addressed are the establishment of a resource bank of instructors, training aids, and textbooks. Another area addressed was master scheduling of courses.

When this resource bank is established, it will be possible for the police first responder instructor to utilize other instructors to assist in training and provide an increased availability of training aids. In addition, training programs may be con-

solidated, allowing smaller departments to pool their students and resources into a jointly sponsored class. This means that first responder certification and recertification classes may be arranged to meet the training needs of several police departments, Lou Jordan, MIEMSS associate director of prehospital care, explained.

Although first responder training is required of all new officers, only a few from each police department can be given the work time to attend recertification classes at any one time. Therefore, officers from two or more police departments may be trained together at a central location.

"By better utilizing instructors and resources, we hope to be able to improve the quality of first responder training that police officers receive without increasing the amount of time they spend in training and retraining."

This is not a "different step" in police officer training, according to Mr. Jordan. First responder instruction has been a part of their training for many years. Rather, this is a "first step" toward improving that instruction, he says.

The first responder training covers the basics of initial first aid — splinting, observing vital signs, recognizing the signs

of shock, administering CPR, and positioning the patient — in short, anything that can be done at the scene with a minimum of equipment.

The goal of this training is to enable police officers, who often are the first to arrive at the scene of an emergency, to provide emergency care until EMTs, CRTs, or paramedics arrive at the scene.

After additional help has arrived, officers may assist in providing patient care within the limits of their skill level, says Mr. Jordan. Police officers do not usually participate in the transport of a patient, except in cases of behavioral emergencies or other special situations.

According to Mr. Jordan, the "next step" in the development of emergency medical training for police officers may be to allow officers who want to become EMTs to credit their first responder training toward EMT certification. "We're working to further develop that," he says.

"MIEMSS is very pleased to be working with the Maryland Police Training Commission," says Mr. Jordan. "We look forward to a long and fruitful working relationship, as both organizations have the common goal of providing quality service to Maryland."
—Dick Grauel