

Maryland E.M.S.

NEWSLETTER

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For All Emergency Medical Care Providers

April 1990

Electronic Flight-Following Implemented

A new computerized flight-following system specifically adapted for Maryland by the MIEMSS communications department, in concert with the Maryland State Police Aviation Division, graphically shows the location of each Maryland State Police (MSP) med-evac helicopter in the state during every 30 seconds of flight. If a helicopter were out of touch, even in a remote area, its coordinates would be clearly recorded for use by rescue personnel. The system, in its test phase at present, is based at SYSCOM in Baltimore with monitoring capabilities by the MSP Aviation Division at Martin's Airport. This is the first such system tracking EMS med-evac and law enforcement flights in the country.

The need for such a system was recognized by MIEMSS, the MSP, and MEHAC (the Maryland Executive Helicopter Advisory Committee, established by the governor as a liaison between the governor's office, the Maryland General Assembly, and the Department of Budget and Fiscal Planning) after the loss of the Frederick Section MSP med-evac helicopter in January 1986. Sudden fog and poor visibility made it difficult to locate the downed aircraft, which had crashed into a wooded hillside in Baltimore. The new flight-following system gives a mechanism to automatically track the aircraft and report immediately in the event of an incident.

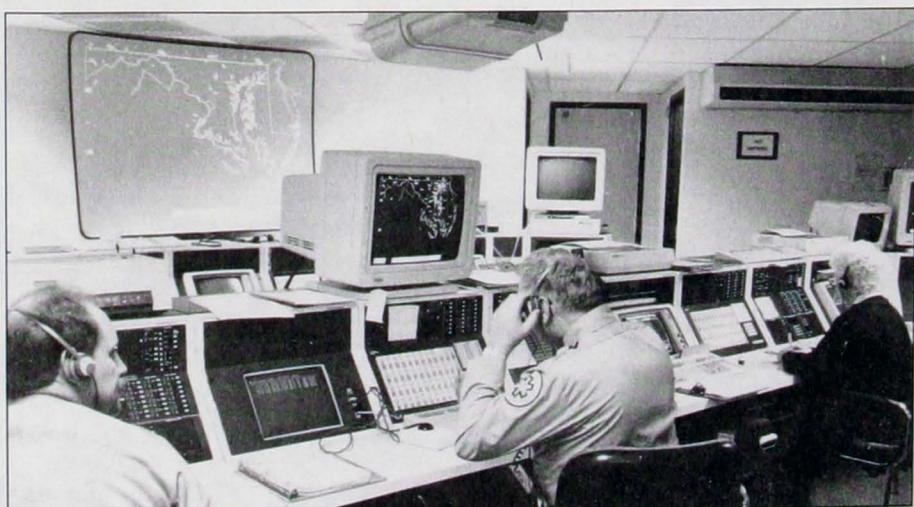
Each MSP med-evac helicopter has an automatic reporting device tied into its Loran-C navigation system to transmit a coded signal identifying the aircraft and giving the mission code. It is transmitted by a low-band FM radio

channel not affected by weather conditions. While the helicopter is flying, a dot appears on a graphic map display every 30 seconds to form a line on the SYSCOM screen; different color lines denote whether the aircraft is a Dauphin 2 helicopter or a Bell Jet Ranger. Any time the helicopter descends below 200 feet it drops off the system; 30 seconds later a "soft alert" is noted on the SYSCOM screen with a text display to alert the MSP duty officer in SYSCOM and the SYSCOM supervisor, who have responsibility for tracking aircraft in the system. If three transmissions in a row (1 1/2 minutes) are missed, a "hard alert" emits an audible signal and flashes lights. A helicopter making a scheduled landing announces its estimated time of arrival to SYSCOM; when the landing is expected, the SYSCOM operator will disregard and reset the alarm. If the landing is unexpected, the SYSCOM

operator will attempt a voice contact. If voice contact cannot be made, the computer, which stores the helicopter's location, can reproduce its track; helicopter latitude and longitude coordinates will be set into the Loran-C navigation system of search aircraft. The system will also print coordinates for expanding square and ladder searches, standard patterns for search and rescue operations. Even if the system should malfunction at that point, knowing the helicopter's previous location in a short time narrows the search to within approximately 2 miles. It can also project the path of the helicopter from the readings at the time of its last contacts.

SYSCOM has several types of maps on which to view the path of the helicopter; the main map shows the entire state, including airports, landing

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SYSCOM's computerized flight-following system graphically shows the location of each MSP med-evac helicopter.

Computer-Aided Dispatch in AA County

A new computer-aided dispatch (CAD) system in use since June 1989 by the Anne Arundel County Fire Department automatically recommends the closest available unit, gives map coordinates to the crews, and displays previously stored medical data upon receipt of a 911 call from that address.

Chief Roger Simonds, division chief of EMS, explains the medical data registry: "Suppose a SIDS baby has been identified in the system and a call comes in from a babysitter who does not have—or is too agitated to give—the pertinent information about medication, physicians, etc. The computer will automatically supply that information to the prehospital care providers, who will be prepared when they arrive on the scene. This is also valuable for many other conditions, such as high-risk maternity care, cardiac problems, etc." Chief Simonds speaks before various groups to encourage them to register such necessary medical information. The EMS division has a CAD terminal and can enter information at any time.

The Fire Department's CAD system, which includes the information available through the enhanced 911 center, is part of a computer system shared with the Anne Arundel County Police Department, which is across the street. "The two systems are interchangeable; dispatch could be made in either location if necessary," says Chief Harry Zlotowski, division chief of communications. Both headquarters are located in Millersville.

"Along with medical information, hazardous materials information can be stored in advance of an incident," says Chief Zlotowski. "Another important feature is that the responding unit receives a printout of the information on the dispatcher's screen to take with them on their call. The combination of computer plus radio system speeds dispatch and helps units to respond faster."

In the old dispatch system, the dispatcher had to look up the locations, note the cross streets, check assignment cards, and determine which companies were available. This is now automatically done by the computer. All street locations in Anne Arundel County have been put on file electronically and keyed to street guides. Every unit in the county has a



The new CAD dispatch system enables medical and hazardous material information to be stored in advance of an incident.

street guide. When a unit is dispatched, it is given the map number, page, and coordinates.

Fire companies are alerted to an incoming call by a toning code system: a series of tones opens the receivers of the particular station being called. It is therefore not necessary to listen to every call going out all over the county.

The CAD system uses leased telephone lines between the dispatch center and the county's 40 fire stations. The radio system, which has been on-

line since 1988, uses an 800 MHz trunk radio system. Initially, there were only 3 radio channels; there are now 15. Through these combined systems, all county agencies, including health, detention, etc., can communicate.

Chief Zlotowski says, "The system is working so well that in some cases the call-taker is still speaking to the caller and the dispatcher is sending the unit on its way."

◆ Erna Segal

Electronic Flight-Following

(Continued from page 1)

sites, and hospitals. Another map shows major highways and may be focused on one area of the state; a third option is to zoom in on an area as specific as a shopping mall. Both video and audio data are stored and are available for review at a later time. An additional base station was installed in the Annapolis area to improve communications for the flight-following system.

This system is unique to Maryland; other states do not have statewide helicopter control and their helicopter services are usually hospital-based. However, a somewhat similar system is used to track oil-rig helicopters in the Gulf of Mexico. MIEMSS Director of Communications Gene Bidun wrote the original specifications, acceptance test, and checkout procedures for the

Maryland system. His communications team includes Thomas H. Miller, chief of engineering, Edward Macon, chief of maintenance, and Andrew J. Pilarski, chief of operations. The system was manufactured in Louisiana. Maj. Charles Hutchins, commander of the MSP aviation division, says, "The communications department tailored the technical development of the program to our needs."

According to John Lang, executive director of MEHAC, "Most importantly, this state-of-the-art system represents a major step to improve the safety of Maryland's helicopter operations. Additionally, it provides an excellent tool for fleet management that will bear dividends in the form of reducing both response times and the operating costs of the helicopter fleet."

◆ Erna Segal

Medical Network Helps Baby from Belize

A 2-month-old baby whose parents are subsistence farmers that raise corn and beans and hunt deer, antelope, and armadillos, has an international network of friends in high places. These friends went to considerable lengths to help her—just because it was the “right thing to do.”

Maria Christina Mendez was born in Belize, a tiny country in Central America bordered by Honduras, Guatemala, and Mexico. Maria was born with an occipital encephalocele, a defect that occurs in 1/10,000 births, in which a portion of the back of her skull was missing. Tissue and fluid leaked out of her brain, forming a continually growing, melon-sized sac. But a compassionate network of professionals was established from Belize to Baltimore, including Sisters of Mercy, medical personnel in Belize, pediatric and neurosurgical specialists in Baltimore, neonatal transport personnel, and hospital administrators, and Maria received her life-saving operation on March 2. All costs incurred were donated by the personnel and institutions involved.

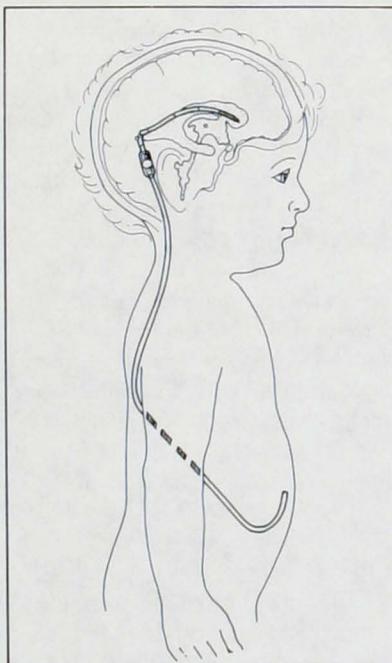


Due to incomplete development of Maria's brain and skull in utero, a fluid-filled sac developed outside her head. The sac was surgically closed off in three layers and removed. It is hoped that Maria's skull will grow together naturally.

The story began in Belize when Maria's birth was overdue and her expectant mother was feeling ill. Her mother walked 9 miles from her near-jungle area to seek medical attention at the closest medical clinic. Sister Marian Joseph Baird, a nurse who is a Sister of Mercy, took her on a 25-mile trip over dirt roads to the nearest hospital. Doctors there felt that she might need a cesarean section delivery which was too complicated for them; therefore, she

was flown to Belize City Hospital, where Maria was delivered in a normal birth on December 23, 1989. Doctors at that hospital were not able to perform the operation Maria needed.

Originally from Baltimore, Sister Marian called her provincialate in Baltimore to seek help. Sister Barbara Wheeley of that office suggested that she contact Sister Thomas, president of Mercy Medical Center in Baltimore, whom Sister Marian knew from when she had worked as a nurse at Mercy



To prevent a buildup of fluid to the brain (hydrocephalus), Dr. Robinson implanted a shunt to drain excess fluid to the abdomen. This shunt will have to be replaced periodically as Maria grows.

some years before. Sister Thomas consulted Ronald L. Gutberlet, MD, chairman of the department of pediatrics and director of nurseries at Mercy. Dr. Gutberlet determined that Maria would probably require neurosurgery and it was more appropriate for her to go to the University of Maryland Hospital (UMH), with which Mercy nurseries are affiliated. He therefore contacted Ira H. Gewob, MD, chief of the division of neonatology.

Questions facing Dr. Gewob were whether the lesion was operable, whether there was a way to bring the baby to UMH, and how expenses would be met if she were brought there

After innumerable phone calls and meetings, it was decided that Maria should come and all costs would be gratis. By that time, Maria no longer qualified as a neonate (which is defined as being younger than 28 days old), and arrangements were made with the department of pediatrics instead.

Since the baby was medically stable, she traveled more than 3,000 miles in the arms of Sister Marian. She arrived in Baltimore on February 28 and was met at the airport by Dr. Gewob and a transport team from MIEMSS Maryland Regional Neonatal Program, Neonatal Transport Technicians Dennis Haslup and Karen Kellner and Neonatal Transport Nurse Elaine Wood, who brought Maria to UMH.

After the necessary tests, a 3-hour operation was performed by Walker L. Robinson, MD, director of pediatric neurosurgery at the University of Maryland Medical System and acting director of MIEMSS neurotrauma. Maria did well after the operation, which drained 13 ounces of fluid from the sac at the base of her skull.

After her post-surgical care at the hospital, Maria is again being taken



Maria and Sister Marian leave University of Maryland Hospital.

care of by Sister Marian, staying at the home of Sister Marian's family until she is well enough to return home.

In today's money-oriented world, with the emphasis on “the bottom line,” the people who helped Maria feel satisfaction that their international network helped to save her life. Their compensation is knowing they did the right thing.

◆ Erna Segal

Cardiac Care Conference

"Advanced Concepts in Cardiac Care for Paramedics" will be offered May 19 at the University of Maryland Baltimore County (UMBC). Registration for the conference, which is sponsored by UMBC's Emergency Health Services Department and St. Agnes Hospital, begins at 8:15 am. For information, call UMBC at 455-3224.

RN/CRT Training Program

Registered nurses currently certified as Maryland EMT-As and actively participating in emergency fire, rescue, or EMS services in Maryland, who have a minimum of 2 years of current critical care experience in intensive care, coronary care, or emergency department care, are eligible to enroll in the "RN to CRT" pilot training programs.

Planning for the "RN to CRT" pilot programs began in February 1987, when REMSAC (Regional Emergency Medical Services Advisory Council), with the approval of R Adams Cowley, MD (then director of MIEMSS), convened a task force to study the feasibility of critical care and emergency nurses becoming cardiac rescue technicians (CRTs).

The goal of the RN/CRT Task Force was to develop a proposal to facilitate an influx of qualified individuals to function as CRTs in the prehospital phase of care, by recognizing the previous training and experiences of RNs so that they would not need to spend the standard 160 hours of training above EMT-A level to become certified as CRTs.

"Cardiac Rescue Technician" defined in Section 14-303 of the Health Occupations Article means an individual who:

(1) (i) Has completed a course approved by the Board and the Director of Emergency Medical Services; and

(ii) Has been examined by the Board and certified as a cardiac rescue technician;

(2) Is enrolled in a cardiac rescue technician program that meets the standards set by the Board."

Working within the established CRT Regulations and Program Standards, the task force of representatives from REMSAC,

US Naval Academy Hosts Drill

The US Naval Academy in Annapolis held its first multiagency mass casualty drill on March 14. The scenario was a simulated helicopter crash into crowded bleachers on the academy's athletic field. The crash caused 34 injuries and 2 deaths.

Naval Academy Fire Department

together with MIEMSS staff and representatives of the Emergency Nurses Association (ENA), developed a proposal in March 1988. This proposal was circulated for review and ultimately endorsed by REMSAC and the regional medical directors.

In the spring of 1988, the Maryland Board of Medical Examiners endorsed the concept but requested more details regarding how pilot programs in each of the five EMS regions would be conducted. A minor delay in implementing the pilot training programs was experienced when, during the summer, the State Board of Physician Quality Assurance was created to replace the Maryland Board of Medical Examiners.

Plans to implement the pilot "RN to CRT" training programs were developed and presented to the EMS Committee of the State Board of Physician Quality Assurance in September 1988 and finally approved by the new Board in December.

Following approval of the "RN to CRT" pilot program, the chairperson of the REMSAC Task Force invited regional administrators and ALS program coordinators to a meeting in Baltimore in March 1989. The meeting was well attended and provided a forum to ask questions and allow input to the program during its early stages.

Presently there are three EMS Regions (III, IV, and V) piloting the "RN to CRT" training program. Data relating to the success of these pilot programs will be reviewed after completion of the pilots.

For further information on the "RN to CRT" pilot program, contact Ron Schaefer, director of the MIEMSS Prehospital Training and Certification Office (301-328-3666).

personnel were the first to reach the scene. After assessing the magnitude of the incident, they requested assistance from EMS units in Anne Arundel County and the City of Annapolis. The incident commander was Capt. B. A. Spofford from the Naval Academy; the fire department officer in charge was Chief Jerard Britton. Overseeing the mutual aid response were Chief Roger Simonds from Anne Arundel County and Lt. David Colburn from Annapolis.

Patients being transported from the scene were logged into MIEMSS' patient tracking computer system by Ken Young (MIEMSS Office of Training and Certification). The disposition officer was Beth Nachbar, Region III assistant administrator. John Donohue, Region III administrator, coordinated the MIEMSS personnel on the scene.

The receiving medical facilities were Anne Arundel General Hospital and the US Naval Academy Medical Center. Both hospitals tested their response capabilities for mass casualty incidents. In addition, two transports to trauma centers were simulated.



A mass casualty drill at the US Naval Academy involved interagency cooperation.

In a critique of the drill, participants agreed that interagency cooperation was a major contributor to its success. They noted the need for additional exercises of combined responses by military and civilian agencies.

◆ Linda Kesselring

Transporting Children in Ambulances

Although the use of safety restraints for small children riding in cars is mandatory in Maryland, only 70 percent of children are in car safety seats and only 50 percent of those car seats are properly used, according to the Maryland Department of Health and Mental Hygiene Project KISS (Kids in Safety Seats). Misuse of car safety seats drastically reduces their effectiveness. Increasing people's awareness about the proper use of safety restraints was the focus of the recent Maryland Child Passenger Safety Conference. Of particular interest to EMS providers was the topic of transporting children in ambulances.

There are three main reasons for transporting a child by ambulance: the child is injured; the child is ill and in need of care at a medical facility; or the child is not hurt but must accompany an injured parent. Whether the child is injured/ill or not, some form of safety restraint should be used before the child is transported.



If the child is uninjured and the car seat is undamaged, the seat may be secured in the front seat of the ambulance for transport.

"Although we can give guidelines for transporting children, up to the present time there have never been studies dynamically testing the safety of restraints in ambulances for either children or adults," says Margaret Widner-Kolberg, RN, MA, pediatric nurse coordinator for MIEMSS EMS nursing and specialty care department. "The following information is the best we have at this time."

If a small child is found uninjured in a car seat at the scene of a crash and must accompany an injured parent and, if the car seat is undamaged, it may

be secured in the front seat of the ambulance. An older child (4 years old or 40 pounds) may use the standard lap/shoulder harness. It is helpful to have the child in the front seat if intensive resuscitation measures are being used in the rear of the ambulance.

An injured child should be immobilized any time the mechanism of injury suggests the possibility of cervical spine injury, especially if the child is unconscious. The outcome of these injuries often depends on the prehospital care provider's high index of suspicion and prompt recognition of neurologic problems.

Spinal cord injury is less prevalent in children than adults because the children's ligaments are not as rigid in the neck. The frequency of spinal cord injury is 1/100,000 in children under 14 years of age; 3/100,000 in children 14-16 years of age.

An injured child with a suspected cervical spine injury should be immobilized on a spine board with an appropriate size collar to prevent motion of the neck. Cervical collars alone are inadequate for immobilization; studies confirm that splinting the head and torso to a rigid object is basic in cervical spine stability. In all cases, the use of the best cervical collar in combination with other devices and methods decreases motion in all directions. It is vital to use the correct size collar; if it is too big, the collar can worsen neck injury if present. If the proper size collar is not available, rolled-up towels and tape should be used instead for stability. SAND BAGS SHOULD NOT BE USED FOR CHILDREN'S IMMOBILIZATION. Sandbags are too heavy; they put pressure on the child's thoracic muscles and can also compromise breathing problems.

Indications for a Child Safety Seat as Pediatric Spineboard: If the child is injured in a car accident while being transported in a child safety seat or if there is no pediatric or adult spine board equipment available. The child safety seat should be used only if it retained its normal anatomical configuration following the crash.

If the injured child is to be transported with the car seat as a pediatric spineboard, the seat must be

secured to the stretcher in the back of the ambulance.

Indications for a Backboard as a Pediatric Spineboard: If the child is injured in a car accident while not restrained in a seat; if the child is injured as a pedestrian; if the child is injured in a car crash but is unstable in a car seat; or if the car seat is damaged (if it did not retain its shape, the plastic shell is cracked, or the child is exposed to jagged metal edges).

A recently devised car seat especially for use in ambulances was demonstrated at the conference and the manufacturer presented a sample to MIEMSS for educational purposes. The Carrie® LifeSeat™ (Tumble Forms, Inc., Clifton, NJ) can be mounted on the ambulance stretcher or the captain's chair and can be used in different positions. The seats have been in use in New Jersey since the successful completion of an 18-month pilot program. Using a 1987 federal grant from the National Highway



If the injured child is to be transported using the car seat as a pediatric spineboard, the seat must be secured to the stretcher in the back of the ambulance.

Traffic Safety Administration, the New Jersey Division of Highway Traffic Safety bought the seat for the project and provided supervision in conjunction with the New Jersey Office of EMS. The pilot project was expanded in 1988 to buy 42 other Carrie LifeSeats for distribution to ambulance squads throughout the state. It is hoped that the remainder of the squads will buy the seats on their own.

The Maryland Child Passenger Safety conference was jointly

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EMS Week: Sept. 16 - 22

Maryland will join EMS systems across the nation to celebrate Emergency Medical Services Week September 16-22. This week is nationally designated and is an opportunity for prehospital care providers and hospital staffs to increase the public's awareness of EMS services in their areas and to educate them about preventing injuries and dealing with medical emergencies that do occur. EMS Week is also a time to provide recognition to professionals who treat medical emergencies.

The statewide theme for Maryland's EMS Week is "Maryland EMS—A System Saving Lives by Design." The focus will be on how the individual efforts of those who are part of Maryland's EMS system—from dispatchers who receive emergency calls, to volunteer and career paramedics, CRTs, EMTs, and first responders, to trauma and emergency physicians, nurses, and staff — contribute to the *team* effort that makes the EMS system work and save lives.

A proclamation on the observance of EMS Week in Maryland will be issued by Governor William Donald Schaefer and by many county officials.

In the past, Maryland promoted EMS Week through various activities: open houses at fire departments, ambulance companies, and rescue squads; CPR classes; educational conferences; "teddy bear" clinics for children; demonstrations of EMS activities; public service announcements and lectures on such topics as pediatric trauma, the dangers of drunk driving, and the use of motorcycle helmets, seat belts, and infant and toddler car seats; blood pressure, diabetes, and cholesterol screenings and blood typing; training drills; programs in schools; and "recognition" dinners and picnics for EMS providers. EMS activities for this year are now in the planning stage.

For further information on EMS Week, contact your regional administrator.



During a previous EMS Week, a "Traveling Teddy Bear Emergency Department" gave children the opportunity to learn about emergency medical procedures.

EMS Laws Pending in Congress

Two federal legislative proposals focused on trauma care are being considered by the US Congress. Both Senate Bill 15 and House Bill 1602 would establish programs to design, implement, and monitor trauma care systems throughout the nation. They also emphasize the special needs of rural areas.

Although these proposals have much in common, they differ in several respects:

- S-15 would allow 35 percent of state allocations from the federal government to be used for uncompensated care.
- S-15 would establish a national clearinghouse for EMS information.
- HR 1602 would establish a national advisory committee on EMS.
- HR 1602 mandates compliance with standards established by the American College of Surgeons regarding trauma centers and by the American College of Emergency Physicians for EMS systems. S-15 states only that national standards should be followed.

HR 1602 was passed by the House of Representatives in November 1989 and now awaits action by the Senate. S-15 was referred from committee to the full Senate in February 1990; a vote on it is expected in April.

If S-15 is passed by the Senate, the differences between it and HR 1602 must be reconciled. The

resulting language must then be approved by the House and Senate. That approval will finalize the 1990 Emergency Medical Services and Trauma Care Act.

According to Harry Teeter, executive director of the National Study Center for Trauma and Emergency Medical Systems and of the Atlantic EMS Council, passage of a compromise bill—the 1990 Act—is anticipated. Less certain is the approval of an appropriations bill to fund the program. EMS personnel are encouraged to contact their congressional representatives as well as Senator Kennedy and Congressman Waxman regarding the pending legislation.

Other congressional proposals of interest to the EMS community are House Joint Resolution 427 and Senate Resolution 224, which declare May as National Trauma Awareness Month. Bills that call for mandatory seatbelt and motorcycle helmet use have been introduced, but no action on them is anticipated.

◆ Linda Kesselring

REMSAC Elections

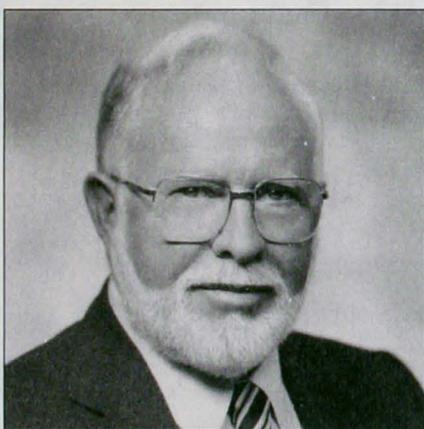
REMSAC (Regional EMS Advisory Council) recently elected officers. They include Chief Michael Jachelski (Medical Bureau, Baltimore City Fire Department), chairman; John Hochheimer (Cambridge), vice-chairman; and Ken May (LaVale), secretary.

Suburban Renovates Trauma Center

Suburban Hospital dedicated its newly renovated trauma center on March 20. Last year Suburban Hospital, a designated areawide trauma center for Region V, treated more than 800 trauma patients. The benefits of the new center stem from its design and state-of-the-art technology.

"Time is the bottom line," according to Ernest J. Hanowell, MD, chief of trauma surgery. "When we receive a patient who has suffered one or more life-threatening injuries, our team must have immediate, easy access to the patient. The new design lets us do that. It's the best I've seen."

The floor area of the center is practically equipment free, except for the patients' stretchers, which also are of advanced design. All monitoring



Dr. Richard C. Myers was honored at ceremonies dedicating the renovated trauma center at Suburban Hospital.

and life support equipment is suspended from the ceiling by highly maneuverable consoles.

The computer integrated monitoring system gives greater flexibility and faster delivery of information on a patient's status. The new x-ray system is mounted on a ceiling track and telescoping boom that can reach any point in the room. A new entrance and automatic door system isolate the trauma activity from other emergency patients.

The newly renovated center was named for Richard C. Myers, MD, surgeon and leader in trauma medicine and EMS in Montgomery County.

Standardized Radio Equipment

"Maryland is the only state where monitor-defibrillators and EMS mobile radios used by EMS personnel in one part of the state are compatible with other pieces of EMS radio equipment in other parts of the state," says Gene Bidun, MIEMSS director of communications. Equipment choices in many other states are hospital-based, not systemwide. This equipment compatibility makes it easy to communicate and receive medical direction from different locations across the state.

MIEMSS has established standard specifications for communications and monitor-defibrillators equipment. This enables the Maryland EMS system to function as a complete system. However, since the statewide equipment budget is frequently not large enough to fulfill everyone's needs, counties or individual ambulance companies may supplement equipment funding with their own discretionary funds.

There are definite advantages to buying equipment that meets MIEMSS' specifications:

- There will be mutual aid compatibility with adjacent counties during large-scale disasters.
- Counties or companies that do not have the technical expertise to evaluate which equipment to choose can follow MIEMSS' specifications to ensure quality and compatibility.
- MIEMSS will modify the equipment as needed when operational procedures change.
- MIEMSS will service and maintain equipment that meets these specifications.
- Purchases will be at the best possible, bulk-buying price when equipment is "bought against" a MIEMSS contract. MIEMSS places an order with a manufacturer for 50 or 100 pieces of a specific type of equipment at a low price that is guaranteed by the purchase contract for a 12-month period. When the contract is arranged, each EMS regional administrator is notified of the specifications, contract price, and availability. By obtaining this information, non-profit ambulance companies may buy against the contract and pay the same low price.

MIEMSS was able to negotiate a \$200 reduction in the price of monitor-defibrillators through its bulk-buying process.

For further information about buying compatible equipment, contact your EMS regional office or the MIEMSS communications department at 301-328-3668.

Centralized Dispatch Of Helicopters

The move toward centralized dispatch of Maryland State Police (MSP) helicopters is underway, with implementation in Regions III and V for med-evac requests and search and rescue as of March 1.

The goal of centralized dispatch is to provide the quickest response of the closest and most appropriate helicopter. Its focus is on which aircraft is to be selected for the mission, and it does not affect where the patient is to be transported.

Centralized dispatch continues the concept of "fleet management," which recognizes that the closest appropriate aircraft to a scene is not always the helicopter that is primarily based in that area. The ability to carry out fleet management will be greatly enhanced by the capabilities of the "flight following" system currently being installed.

Under centralized dispatch, a request for MSP helicopter services is made through a toll-free line to SYSCOM. A SYSCOM operator ascertains the nature of the request, and the MSP duty officer considers the status of the fleet and selects the most appropriate helicopter to respond. Centralized dispatch has been used to handle requests from EMS jurisdictions within Regions III and V since March 1 and will soon be extended to include law enforcement agencies within these regions. This approach to helicopter dispatch appears to be working well, and it is anticipated that it will be expanded incrementally until all regions of the state are able to enjoy its benefits.

◆ *Douglas Flocare, MD
MIEMSS Aeromedical Director*



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DATED MATERIAL

Brain Injury Study Examines Mortality Rates

Through a study of 1,709 patients at the MIEMSS Shock Trauma Center over a 3-year period, a direct correlation has been found between the deaths of brain-injured patients and whether they had associated injuries, such as spinal, lung, visceral, pelvic, or extremity injuries. The major determinant in this increased mortality, and to some extent in the increased need for rehabilitation in the brain-injured patient with an associated injury, is significant volume loss either in the field or early in the course of treatment.

Mortality rates for patients with brain injuries plus associated major extremity or internal organ injury were more than double those of patients with brain injury only.

Associated injuries in combination with brain injuries cause a blood volume

loss and therefore low flow shock to the brain. Patients who are brought in with shock have a higher mortality rate and a greater need for rehabilitation. "This reinforces the need for rapid retrievals in the field and movement of the brain-injured patient to sophisticated trauma centers where all medical specialties can work together to reduce those factors," says John H. Siegel, MD, MIEMSS traumatologist, who was principal investigator of the study.

Implications of the study are that there should be aggressive, early fluid resuscitation for brain-injured patients with associated injuries. In the first few minutes after the incident and the first few hours after admission, events occurring related to the magnitude of volume loss substantially increase the mortality of patients and influence even late needs for rehabilitation. Dr. Siegel recommends that IVs should be started if there is any possibility of a brain injury with associated injuries that produce significant blood loss or shock.

Costs for care are dramatically different for brain-injured patients with and without associated injuries. In this study the average costs for a patient with a moderate brain injury alone for the year following injury were \$12,489; when an extremity injury or spinal injury was present, the costs rose to \$36,000. Costs for an isolated severe brain injury were \$59,274; if an extremity injury was added, \$84,150; if a spinal injury was added, \$89,000;

and if abdominal or thoracic injuries were also present, \$110,000. "It cannot be assumed that a serious leg fracture injury is not important to a patient with a brain injury, or vice versa," says Dr. Siegel.

Other researchers on the study were David Gens, MD, attending traumatologist, MIEMSS; Tanya Mamantov, MD, research fellow, MIEMSS; Fred H. Geisler, MD, PhD, former director of neurotrauma at MIEMSS; Shirin Goodarzi, MS, Department of Surgery, UMMS; and Ellen J. MacKenzie, PhD, Johns Hopkins University School of Hygiene and Public Health.

Transporting Children

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sponsored by the Maryland Association of Women Highway Safety Leaders, Maryland Chapter of the American Academy of Pediatrics, Maryland Chiefs of Police, Maryland Child Passenger Safety Association, Maryland Committee for Safety Belt Use, Maryland Department of Transportation, Maryland State Police, MIEMSS, National Highway Traffic Safety Administration, and Project KISS.

For further information about the Carrie LifeSeat and other child safety restraints appropriate for use in ambulances, contact Margaret Widner Kolberg at 301-328-3930.

National Trauma Awareness Month

As part of its goal to reduce death and disability due to trauma, the American Trauma Society (ATS) conducts an annual campaign in May. This year's third annual National Trauma Awareness Month focuses on home safety and highlights trauma caused by falls, burns and fires, poisons, firearms, suffocation, drownings, and other home hazards.

For information, call ATS at 301-925-8811 or 1-800-556-7890.