

Maryland EMS NEWS

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The neonatal center (left) and pediatric trauma center at Children's Hospital National Medical Center were recently designated as part of the Maryland EMS system. Some patients from Maryland are transported via Maryland State Police Med-Evac helicopter to the heliport at Children's Hospital (right).

CHNMC Joins Maryland EMS System

The Children's Hospital National Medical Center in Washington, DC, one of the major pediatric hospitals in the country, was recently designated as a pediatric trauma center for Maryland, as part of Region V.

Martin R. Eichelberger, MD, director of the Children's Hospital Trauma Service, said recently, "One of the most important accomplishments of Dr. [R Adams] Cowley was to put an EMS system in place. The details of the system are probably not as important as the concept, which took vision and leadership — that's why we're happy to participate in the Maryland system. We are committed to the anonymous child who benefits from the system."

Dr. Eichelberger considers pediatric trauma to be the orphan of the EMS system. He feels that it should not be community hospitals that handle pediatric trauma, but the major referral centers around the country, and hopes the success of the Maryland system will motivate other institutions to establish pediatric trauma centers.

Trauma is the leading cause of death among children, because research has made great progress toward

conquering other causes such as infection, polio, and cancer. Money allocated for pediatric trauma research is in no way comparable to the amount designated for eradication of other diseases.

When pediatric trauma occurs, there is a patient-system relationship, rather than a patient-doctor relationship. If the system is not in place, the child cannot benefit from it. "I have two children, a six-year-old and a nine-year-old, Lindsey and Todd," said Dr. Eichelberger, "and one day they could come in our door. I want that system to be in place."

The prehospital care a child receives in a helicopter or ambulance is a link in the chain of treatment that will have an impact on that child's 65- or 70-year longevity. When you treat a four-year-old, you are dealing with a long-term outcome. "That's why we need committed people who will take the time and trouble to learn what they need to know about children to make it work effectively," Dr. Eichelberger emphasized.

"The whole family is affected when a child is injured; it is not enough to just treat the child's injuries. The system

must accommodate the needs of the family. Parents should be considered another link in the health care team. Encourage the parent to ride along with the child in the ambulance; the child is reassured, and responds better to treatment.

"Once in the trauma resuscitation area of the hospital, we can usually tell whether a child is going to live. We have trouble dealing with irreversible brain damage, but if a child is talking and looking around, he will probably survive. Because we have such phenomenal resources available to bring to the child's bedside, our mortality rate among children who require the response of the trauma team is four percent."

The Children's Hospital National Medical Center is a regional resource, Dr. Eichelberger explained. "Because of the high-tech capabilities of the staff, children are referred from a wide area, including DC, Southern Maryland, West Virginia, Northern Virginia, North Carolina, Pennsylvania, and New Jersey.

"Children require special care and attitudes that focus on the needs of the child under this kind of stress. Providers should take an interest in pediatrics —

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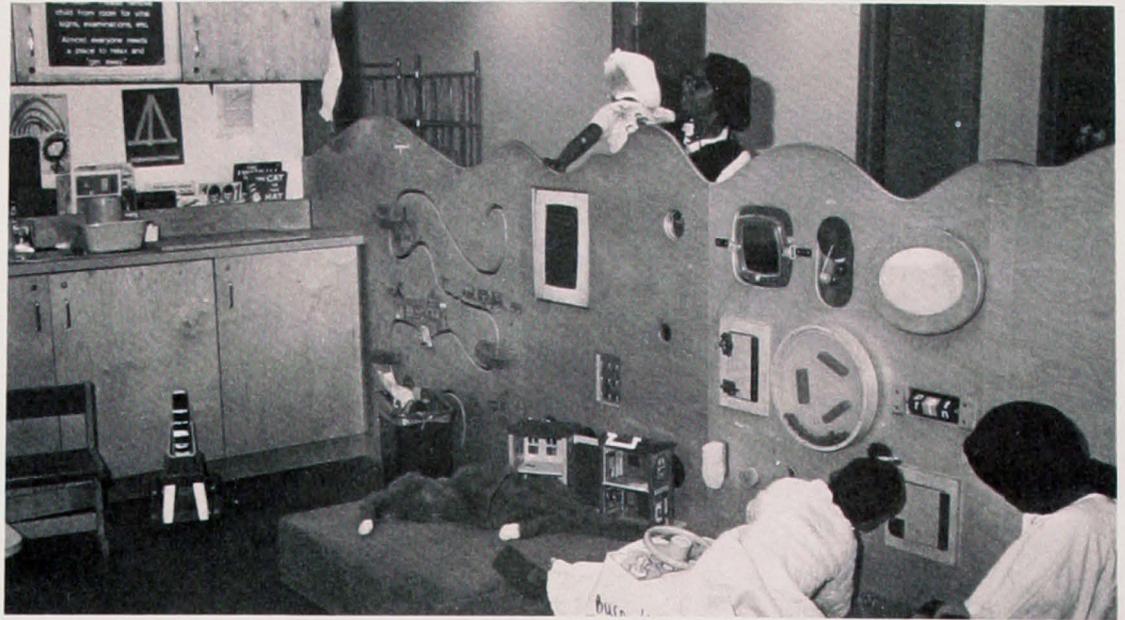
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find out the tools and information needed for handling children." A three-day course is given by Children's Hospital to provide such training for paramedics, EMTs, and fire department personnel. "It is expanding like ripples in a pond," Dr. Eichelberger said. "Atlanta sent seven people, including a pediatric surgeon to participate in our training course. They will start their own course and further spread the concern for children. If enough people learn pediatric emergency care, we can make an impact on the public health of children and their families.

"Providers say, 'Teach us pediatrics.' Personnel of the hospital have just written a book to tell you what you need to know — not only about trauma, but about the pediatric patient and family. It gives the provider basic knowledge to help him cope." (Entitled *Pediatric Emergencies Manual*, it was edited by Dr. Eichelberger and Gerry Stossel-Pratsch, director of the EMS Training Program at Children's Hospital. Published by the University Park Press, 300 N. Charles Street, Baltimore, MD 21201, the manual costs \$16.00.)

"By the same token, we need to hear from prehospital providers in the field, to understand their needs. Feedback stimulates solutions — and that works both ways. We are inseparably linked, and must be willing to work together. Pediatric patients require the same commitment as adult patients. Children are our most important national resource. When you consider the life expectancy of the child, your public service is affecting the future of the world."

—Erna Segal



Patient in playroom of the burn unit at Children's Hospital. To keep the playroom a happy place, a sign says, "Thank you for not doing medical procedures in this room. Please remove child from room for vital signs, examinations, etc. Almost everyone needs a place to relax and 'get away.'"

Trauma Center Uses Teamwork

"Dedication" and "commitment" are two words that come up often when talking to Elmer A. (Tony) Mangubat, MD, trauma fellow at Children's Hospital National Medical Center, and Thomas P. McGinley, trauma coordinator.

"In this 265-bed, free-standing pediatric institution, with its dedicated staff, trauma takes priority: we can put all 18 members of the trauma team together in 45 seconds," declares Mr. McGinley.

The trauma team is divided into two components, an inner and an outer core. The nine-person inner core goes directly into the code room, and each person performs a specific role in direct patient care. They follow a protocol to

ensure the same level of care and expertise for every child.

"The trauma team is assembled around the patient in a specific manner. Each team member occupies a predefined position at the patient's bedside, to enable him or her to perform his specific function with the greatest efficiency. You don't have to say, 'pass the cut-down tray,' because each side of the room is self sufficient.

"Nothing is forgotten — absolutely nothing," exclaimed Dr. Mangubat. "Each team member knows exactly what has to be done. The surgical coordinator doesn't have to perform any time-consuming surgical procedure unless it's a complicated procedure like a left thoracotomy. A senior surgical resident is present who has been trained to do chest tubes or cut downs, freeing the surgical coordinator to concentrate on being the conductor. The people on the team act as his arms and legs, allowing him to set the priorities of care. What's incredible is, during the resuscitation of a critically injured child, the team responds with very little conversation. The priority is placed on action. It is a smoothly oiled machine."

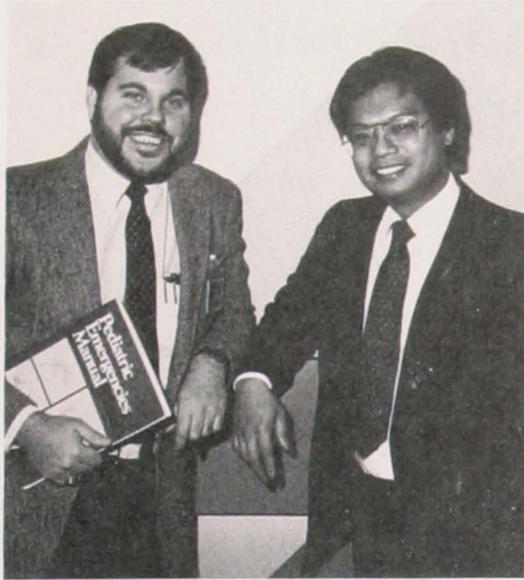
The outer core of the trauma team is the support system, such as laboratory, radiology, social work, security people, and consultants. They can bring the full resources of the hospital to that child.

Dr. Mangubat came to Children's Hospital expecting to stay for one year. He has been there 3-1/2 years, and is very much involved with the trauma

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Part of the pediatric trauma team at Children's Hospital. (L-r) Carol Gannon, RN; Martin Eichelberger, MD, director of the trauma service; Astrid Ellis, RN, director of emergency services; and Marjean Cefaratti, RN.



Thomas P. McGinley and Elmer A. (Tony) Mangubat, MD

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service. He is also researching the micro-circulation of shock, and developing a method of continuously measuring capillary blood flow to understand shock more thoroughly.

Children's Hospital is dedicated to a continuum of care, not only in service, but in research, education, and advocacy of children. "Here we have a concentrated center of experience," Dr. Mangubat explains, "and we are committed to disseminating the information through EMS teaching and acting as a resource for physicians, nurses, EMS personnel, and other health professionals."

—Erna Segal

Md. Regional Neonatal Program Adds CHNMC Neonatal Center

Editor's Note: The neonatal center at the Children's Hospital National Medical Center was recently designated as part of the Maryland Regional Neonatal Program.

When Gordon B. Avery, MD, PhD, director of the division of neonatology of the Children's Hospital National Medical Center in Washington, DC, and professor of child health and development at George Washington (GW) University, began working in the old Children's Hospital 21 years ago, the word "neonatology" had not been invented.

He was put in charge of a small unit for newborns that outgrew its boundaries five times before they moved to the new hospital.

"I began to train people in about 1965. The name 'neonatology' was invented in about 1969 to define babies up to the first 28 days of life, and now there are Boards in this field, and in the past year, accreditation of training programs." Dr. Avery wrote one of the first textbooks on the subject; the third edition of the book is now in preparation.

"New technology in 1970 made it possible to have effective respiratory care of newborns, and in the following decade, effective nutritional and metabolic support, so a premie who couldn't eat could still gain weight," Dr.

Avery explained. "Then came more sophisticated understanding of the cardiopulmonary physiology of the babies; the ability to put in arterial catheters, transcutaneous monitors, and IV pumps rather than drips. Each new gadget permitted an extension of what we could deal with. Now we can do open heart surgery on three-pounders, and safely put in central intravenous lines that can stay in for weeks at a time."

There are now 36 "sick baby beds," 14 respirators, monitoring equipment, oxygen, and suctioning equipment. "Our intermediate care would be ICU in many hospitals, but we have babies with more intense illnesses. We have more than 100 nurses of various grades, respiratory therapists, and laboratories capable of doing blood gas work in two minutes, while you're still massaging the chest. This is a very busy place, even at 3 o'clock Sunday morning," Dr. Avery said.

Children's Hospital draws from over 24 hospitals in the District, the surrounding counties, and other states. The international composition of the area has even led to babies being brought in from Europe and Asia.

There are 40,000 babies born in the Metropolitan Washington area, less than one-quarter to District residents. A disproportionate amount of premature babies are born to District residents.

Among the reasons for premature births are young mothers, inadequate prenatal care, poor maternal nutrition, maternal diseases not adequately treated, lack of prophylactic health care, and infection. Dr. Avery points out, "They all link up to make a high premie rate, and even more, a high rate of delivery of babies weighing less than 1,500 grams (about 3-1/2 pounds). Babies under 1,500 grams make up 75 percent of the mortality of neonates."

There is a pilot program underway to try to lessen neonatal mortality. The long-range measures that could be taken depend on societal changes, such as eliminating poverty, ignorance, unemployment, and women who have one baby after another without adequate recovery time; and upon improved nutrition. The pilot study is trying for high leverage intervention. Women with high-risk pregnancies are encouraged to seek prenatal care and nutritional care, to see if it will have an impact.

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Gordon B. Avery, MD, PhD adjusts mobile ICU unit.

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(Children's Hospital does not have an OB-GYN department; high-risk mothers go to GW University Hospital. Dr. Avery explained, "Our academic division also has a unit at GW University Hospital, with a perinatal-obstetrics training program, high-risk deliveries, three full-time faculty over there, and six here at Children's Hospital. So between the two houses, we have all the elements of a perinatal center.")

"This neonatal unit is the high-tech resource for a very large area for cataract surgery, a significant amount of open heart surgery, and ECMO (extracorporeal membrane oxygenator) for temporary total support to a baby with otherwise lethal pulmonary failure. Like the heart-lung machine used for open heart surgery, you can stop the heart but keep the functions up, while the machine pumps, oxygenates, and gets the carbon dioxide out. This procedure has been around a while for short-term use. The new use is to extend it for a few days at a time to get the baby past a crisis.

"With the use of large catheters in the carotid-jugular vessels in the neck, the baby's central circulation is outside the body. The respirator is used for a few breaths per minute only to keep the lungs from collapsing and healing shut. The respirator could be stopped for five minutes, and the baby would never know it.

"We reserve this for a baby with a short-term problem that could be fatal, but which can be cured; we are not using it to support tiny preemies until their lungs mature. There are large babies with persistent fetal circulation, or massive aspiration, or a diaphragmatic hernia that can be fixed, but they need help while their undeveloped lungs reinflate and adapt. Normally they would be on the support system from three to five days, and then weaned off. Since June there have been eight babies on the ECMO system. We've gotten calls from as far away as New Orleans."

One example of the efficient design of the neonatal unit is the process for taking x-rays. The picture is taken at the baby's bedside with the same clarity and power as one taken in the radiology department, due to a built-in unit mounted in the ceiling.

"The neonatal unit depends on an integration of disciplines," declared Dr. Avery. "I sometimes formulate the metaphor that the unit is a complex organism, and the organism takes care of the baby."

—Erna Segal

May Perinatal Symposium Set



The Second Annual Perinatal Symposium, "High Risk Care: A Race for Time," will be held on May 16, 17, and 18 at the new Baltimore Plaza Hotel on Pratt Street. Recommended for doctors, nurses, and health care providers, the symposium will feature workshops on such topics as:

- Antenatal assessment
- SIDS: Whom should we monitor?
- Babies on special drugs
- Perinatal transport panel
- Diabetes in pregnancy
- Maternal/neonatal coagulopathy
- Grieving
- Does fetal hypoxia cause neonatal asphyxia?

Continuing education units will be

Disaster '85 Scheduled

Disaster '85, a national disaster management conference, will be held February 7-10 at the Hyatt in Orlando, Florida. The conference is sponsored by the Florida chapter of the American College of Emergency Physicians and the Institute of Emergency Medical Services at Mid-Florida Tech.

Focusing on the practical aspects of disaster management, speakers will discuss such topics as the slaughter at the San Ysidro McDonalds; the Amtrak derailment in Vermont; terrorism, bombs, and structural collapse; the Romeoville Refinery explosion; incident command for law enforcement; psychological effects of disasters on children; highway disasters; statewide mutual aid to California disasters; disaster exercises; disaster media relations; and emergency mortuary services.

Included in specialized tracks are such topics as new equipment for disaster management, as well as problems facing law enforcement, fire/EMS, and hospital personnel. Preconference seminars will offer participants a chance for in-depth study.

For further information, contact the Florida Chapter ACEP office, 600 Courtland St., Suite 420, Orlando, FL 32804 or call (305) 628-4800.

granted through the MIEMSS field nursing program, which is approved as a total program of continuing education in nursing by the Eastern Regional Accreditation Committee of the American Nurses Association; the American College of Obstetricians and Gynecologists; and the American Academy of Pediatrics.

The symposium is sponsored by the Maryland Regional Neonatal Program of MIEMSS and cosponsored by the Johns Hopkins Hospital and University of Maryland Medical System.

For further information, contact Patricia McAllister, MIEMSS, 22 S. Greene St., Baltimore, MD 21201-1595, or call (301) 528-2399.

Funds Requested To Upgrade EMS

Last year a bill that would have raised motor vehicle fees by \$3 to supply funds for the statewide EMS system was referred to summer study by the Senate Budget and Taxation Committee. That bill will not be reintroduced during this year's General Assembly, according to Senator Francis X. Kelly (D., Baltimore Co.), one of the bill's sponsors.

After extensive discussions with members of the Governor's Task Force on State Support for Volunteer Fire, Rescue and Ambulance Companies (of which Senator Kelly is a member), he agreed to support the recommendation that a state aid for fire protection fund be established to aid local jurisdictions in providing emergency fire and rescue services. Senator Kelly is convinced that if he "were to reintroduce the vehicle registration bill, it would cause a split among the various parties who comprise Maryland's outstanding EMS system."

However, Senator Kelly has requested that Governor Harry Hughes provide the funds needed to upgrade the statewide EMS communications system and to meet the additional training needs of EMS personnel. His request has been submitted to the University of Maryland at Baltimore (of which MIEMSS field programs are a part) for transferral to the Budget Bureau in Annapolis.

Senator Kelly and MIEMSS are optimistic that the Governor and the General Assembly will provide the funds necessary to meet the growing needs of Maryland's EMS system.

—Beverly Sopp

Mandatory Automatic Crash Protection



An airbag is located in the dashboard or steering column of a car. In a front-end collision, the airbag inflates instantly to prevent the driver and passengers from hitting the windshield or dashboard. It inflates and deflates so rapidly that people involved in accidents are hardly aware it has operated. (Photo courtesy of U.S. Department of Transportation)

Every day of the year, there are approximately 120 Americans killed in automobile crashes, a total of 43,584 people last year — more deaths than the entire Vietnam war. It is estimated that 8,000 lives a year could be saved if all cars were equipped with passive re-

straints (automatic crash protection). More than \$2 billion could be saved in accident health-care costs, lost wages, and productivity.

A new federal standard to provide automatic crash protection was issued recently by Transportation Secretary Elizabeth Hanford Dole. Sometimes referred to as the "airbag standard," it is actually written to allow for the development of new technology, or the alternative use of mandatory seat belts instead of airbags.

The new standard calls for new cars to be equipped with airbags or automatic seat belts, using a phased-in schedule beginning September 1, 1986:

Year	Percentage of Cars
1986	10
1987	25
1988	40
1989	100

If manufacturers come up with alternative forms of automatic crash protection, they will be given credits toward the number of airbag cars required. Airbags will not be required under this standard if two-thirds of the state legislatures pass mandatory seatbelt laws by 1989. New York has already passed such a law, and New Jersey has one under consideration.

A motor vehicle crash is a chain of related events. There are precrash variables that determine whether a crash will occur, such as the environment, the car, the driver, bad weather, lightness or darkness, road sign visibility, road surface traction, and whether the driver is intoxicated or inexperienced.

But if that crash occurs, different factors determine whether injury will occur and how serious it will be. Bodily injury occurs in the "second collision," when the occupants of the car collide with the interior of the car or are ejected. Now the important concerns are the speed of the car; structure of the vehicle, including protruding knobs, hard surfaces, and rigid steering assemblies; and whether the occupant is restrained. Safety belts and airbags reduce the impact forces, or spread them over space and time so they don't cause injury. (Airbags cushion and distribute the impact forces over a wider area of the body and more gently than a belt system, especially during high speed crashes. They are comparable to seat belts in lower speed crashes.)

It is estimated that only 14 percent of persons having seat belts in their cars use them. Therefore, automatic crash protection is more effective than voluntary compliance, because the occupants of the car don't have to do anything — the belt or bag is already in place.

Auto manufacturers prefer voluntary compliance over mandated passive restraints. GM is working on "friendly interiors," hoping to make its cars safe enough to protect occupants without the use of seat belts. Since the new standard is based on performance, if they can prove government-approved dummies are protected adequately by other technology, they will not have to provide airbags.

—Erna Segal

CO, Smoke Inhalation

With the onset of the cold winter months, the number of carbon monoxide and smoke inhalation patients encountered in the field usually increases noticeably. Field providers are reminded that the MIEMSS Department of Hyperbaric Medicine serves as a consultation center and specialty referral center for these patients. The Department of Hyperbaric Medicine should be consulted particularly in those cases where the carbon-monoxide-intoxicated or smoke-inhalation patient presents with unconsciousness or central nervous system involvement. This consultation should occur through SYSCOM, and field treatment should be in accordance with the current toxic gas inhalation field protocol. If you have any questions, please contact the MIEMSS Department of Hyperbaric Medicine at (301) 528-6152 or SYSCOM at 528-7814.

State Police Try Airbags

State Police vehicles in Maryland, Pennsylvania, Delaware, Ohio, Arizona, Mississippi, California, and Wisconsin are having airbags installed as part of a two-year study by the National Highway Traffic Safety Administration. The program, which involves 500 vehicles, tests the feasibility of installing airbags in vehicles originally manufactured without them. If it proves to be feasible, it may lead to commercial availability of retrofit airbags to consumers.

Procedures for Prehospital Burn Care

Editor's Note: The following article on burn care during the prehospital care phase is based on a talk given during the EMS Care '84 conference by Beth Helvig, former MIEMSS nurse coordinator specializing in burn care.

When a person is burned, the first priority is to stop the burning process. When his clothes catch on fire, the burn victim should stop, drop, and roll to put out the flames. In the initial moments after the accident, cool water or saline solution may be applied to the burns to help stop the burning process. However, because the patient who loses much of his skin also loses his ability to regulate or maintain his temperature, it's important not to chill the burned victim. Dry sheets and/or a blanket should be

wrapped around the patient as soon as possible to help maintain his core temperature and delay the onset of shock.

The prehospital provider should assess the patient, checking the ABCs of life support as soon as the flames have been extinguished. Airway and circulation must be evaluated, and the presence of associated trauma recognized and treated appropriately and in the same manner as one would treat a patient without burns. The burn size must be quickly estimated, a brief history obtained, and the patient quickly surveyed for serious injuries.

The brief history should include the source of the burn, the possibility of smoke inhalation, other accident circumstances that might affect the injury,

and any preexisting medical information.

It's important to assess every flame-burned patient for the presence of smoke inhalation. Smoke inhalation may be lethal in the first 24 hours. Carbon monoxide poisoning should be assumed in any patient found unconscious at the scene; any patient with a history of being in a smokey fire or having an altered level of consciousness should also be treated for carbon monoxide poisoning. Prehospital care providers can best treat carbon monoxide poisoning by giving high levels of oxygen through a non-rebreathing face mask.

Smoke inhalation also causes swelling of the airway and/or laryngeal spasms which may lead to obstruction of the airway. Any patient with a flame burn, singed nasal hairs, sooty sputum, or burns of the face, nose, or mouth must be assessed closely for impending obstruction. Hoarseness, cough, drooling, restlessness, and stridor are all signs that the patient requires immediate endotracheal intubation. An EOA (esophageal obturator airway) cannot be used to maintain an airway in a smoke-inhalation patient; the edematous tissue will occlude the holes and make ventilation impossible.

Prehospital care providers should remember that burn victims should be totally alert and oriented regardless of the seriousness of the burns. A decreased level of consciousness may be a sign of carbon monoxide poisoning, developing shock, associated trauma, or a preexisting condition.

In addition, all medical personnel should be supportive and professional and remember that burn patients will be aware of their treatment and any comments about their condition.

The following types of patients should be considered for transportation to a burn center: patients between the ages of 10 and 50 with burns over more than 20 percent of their body surface; patients under 10 and over 50 years of age with burns over more than 10 percent of their body surface; patients with burns complicated by smoke inhalation; patients with burns of the face, hands, feet, joints, or perineum; patients with chemical or electrical burns; or burn patients with preexisting disease or associated trauma.

—Beth Helvig, RN, MS

DC Burn Center Innovations

A textbook of general surgery written 80 years ago stated that a patient with burns over one-third of his body surface should be given whiskey and opiates, because "Survival is exceptional. . . ."

Marion H. Jordan, MD, director of the Burn Center at the Washington Hospital Center in Washington, DC, remarked at the Seventh National Trauma Symposium sponsored by MIEMSS and the National Study Center for Trauma and Emergency Medical Systems: "Today, more than half of the persons between the ages of 5 and 40 survive 60 percent body burns." (After the age of 40, survival depends on the body's physiological responses to the stresses attendant to a burn injury that might be complicated by extremes of age, smoke inhalation, electrical contact, contact with certain chemicals, and preexisting medical problems.)

Dr. Jordan, referring to the skin as the largest, friendliest organ of the body, said: "It is important to remember that although a burn only directly affects one organ, it is not a single organ disease." Burns affect circulation throughout the body.

Some of the innovative uses of drugs and equipment being used by the Washington Hospital Burn Center, a specialty referral center in the Maryland EMS System, include:

1. Optimum therapy is possible through increasing the dosage of antibiotics over that recommended by the PDR (*Physician's Desk Reference*). Serum levels must be carefully monitored.

2. Intravenous catheters increase the risk of sepsis in burn patients because of the constant bacteremia. Using a single catheter for all infusions with change of the IV catheter site every 48 hours significantly decreases the rate of septic shock episodes.

3. Early surgical excision of the burn wound and immediate wound closure by autografting shorten the patient's hospitalization and decrease morbidity.

4. Patients confined to bed for two weeks cannot participate in a normal "exercise" pattern, resulting in loss of about 50 percent of their endurance and 25–50 percent of their strength. Burn Center patients are put on exercise programs, bicycles, and iso-kinetic dynamometers (like those used in football training rooms) to condition their major muscle groups.

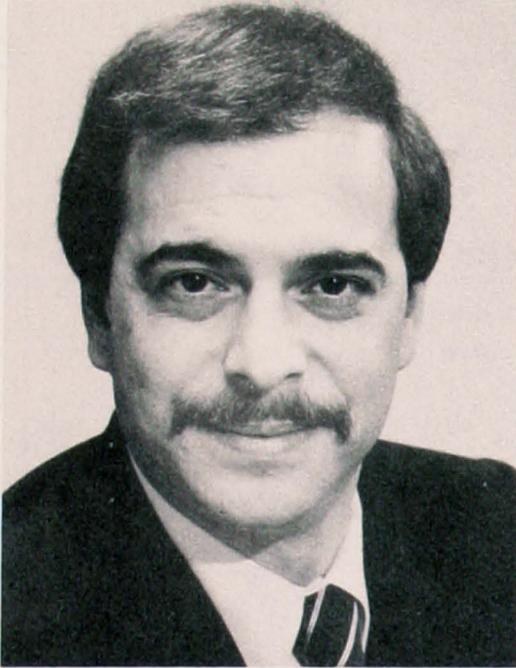
Dr. Jordan stressed that the aim of the team approach at the Burn Center was to discharge not only well people, but "people who do not create a burden to society after we have taken care of all their acute problems."

—Erna Segal

Region V Officers Named

Region V EMS Council officers for 1984 were recently elected. They include: chairperson Leon Hayes (Charles County); vice-chairperson Brigid Krizek, RN (Montgomery County); and secretary Harris Matthews (Charles County).

Dr. Morhaim: Region III Medical Director



Dan Morhaim, MD

Dan Morhaim, MD, medical director of Region III, is responsible for the largest and perhaps most diverse region in Maryland. Comprising Baltimore City and Anne Arundel, Baltimore, Carroll, Harford, and Howard counties, Region III encompasses urban, suburban, and rural areas, and the individual counties and municipalities provide emergency medical services from both all-career and all-volunteer fire and rescue departments.

Quality of Care

In addition, Region III handles 51 percent of the state's 300,000 ambulance runs each year, as well as a majority of the 1.4 million emergency department visits. Despite the diversity and scope of his region, Dr. Morhaim, who is also chairman of the emergency medicine department at Franklin Square Hospital, says that he believes the care rendered in his region is excellent. "The dedication of the people I've met is really amazing. Although they may disagree at times, they all have a definite interest in working hard and doing the best job possible."

Regional Emphasis

Dr. Morhaim says that emergency medicine in general is an extremely difficult field in which to practice, since technology often changes so quickly; often before the effectiveness of one program is tested, another idea is developed and implemented. While he concedes there are difficulties in making policies and providing services in a region as vast as his, he says he strongly believes in the regional system, and is taking steps to unify the region. "This

year I gathered the emergency department doctors in the region for a meeting of the minds. For many of them, it was their first opportunity to meet, and their first link with the state EMS system," he said. "I am planning to do this more often in the future, as a forum for sharing ideas and opinions, as well as providing interaction with MIEMSS."

Dr. Morhaim supports running the statewide emergency medical services program on a regional basis. This ensures the same high levels of care for all citizens in the state. "In the future, we may need to look upon the state by region to provide consistent levels of services. Often we find the greatest resources in metropolitan areas where the hospitals are close together. In the rural areas, hospitals are farther apart and actually need more sophistication. So, one of my long-term goals is to help determine the appropriate distribution of resources, equipment, and personnel in the region."

Prehospital Care

In addition to a more regionalized approach to emergency medicine, Dr. Morhaim is interested in seeing prehospital care become more of a medical ancillary field, like medical technology. "Where possible, I think it would be appropriate for field personnel to be periodically stationed in an emergency department, rather than a fire station, to make better use of down time," he says.

Community Education

Dr. Morhaim is interested in prevention, prehospital training, and prehospital care, and has already begun work in these areas. This fall during EMS Week, Region III presented an EMS Awareness Day at the Inner Harbor, focusing on community education and prevention. "We have to take our story to where the people are to be sure they hear it," he says. "That's why we are working with a number of agencies and groups to take our message about trauma and emergency medicine in general to the public." Region III's EMS Awareness Day included exhibits by Mothers against Drunk Drivers, Kids in Safety Seats, the Union Memorial Hand Center, and the American College of Emergency Physicians (ACEP). "We want to find a way to get to the public's consciousness and make them aware that trauma is a leading killer and in most cases it can be prevented," he adds.

On a regular basis, Dr. Morhaim writes a series of tips on prevention for

several local newspapers, and works with a number of groups toward community awareness of emergency medicine issues. He also works with the Baltimore County Fire Department as a fire surgeon, ACLS course director, and as a lecturer on the role of the community hospital. "Since emergency medicine is not just trauma, and since most of it is performed in the community hospital, I believe it is good that ACEP, MIEMSS, and individual emergency department doctors work together to provide comprehensive emergency care. Since 1979 when emergency medicine was established as a medical specialty, many hospitals have responded by staffing their emergency departments with full-time emergency medicine specialists. Since the majority of patients in the emergency medical system are admitted to community hospital emergency departments, it is essential that these specialists be included as an active part of the system."

Future of EMS

For the future, Dr. Morhaim sees many changes coming in the delivery of emergency medicine throughout the country and a need for creative approaches to emergency medical care. "Dollars are becoming more and more scarce on the national and local levels, and we are going to have to begin making some cost-benefit analyses of the kinds of things we do and the ways in which we do them," he says. "The value of the emergency medical system has been taken for granted in the past, but in the coming fiscal crunch, we will have to devise some creative solutions to delivering high quality care in a much more efficient manner."

— Rochelle Cohen

Region IV CRT Class

The Region IV EMS Advisory Council hopes that everyone had pleasant holidays and looks forward to an exciting and prosperous New Year.

The region has two cardiac rescue technician programs underway in Elkton and in Salisbury. At the time this newsletter went to press, plans for the first CRT program for the Easton area at Memorial Hospital were still being developed.

— Marc Bramble, John Barto
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High-School Students Rate TAT Program

A program presented by trauma teams in Maryland succeeded in bringing about significant improvement in what high-school students know and believe about the importance of using safety belts and being sober behind the wheel. The program was introduced at six Maryland high schools and led to as much as 40-percent gains in scores on knowledge tests and attitude measures among over 300 students. Only one of the six schools failed to show a benefit from the program.

Entitled "Traffic Accidents and Trauma" (TAT), the program was prepared by MIEMSS to help community trauma teams combat the single biggest cause of injury and death to young people — traffic accidents. It consists of a one-hour assembly program given by trauma specialists — physicians, first responders, and police — followed by four hours of discussions led by teachers or student leaders.

The heart of the assembly program is a 25-minute audiovisual presentation entitled "What Are You Going to Do?" in which two teen-age victims describe the tragic consequences of accidents in which they were severely injured. Both accidents were caused by drinking and driving, and neither of the teens was wearing a safety belt. The presentation

has proven extremely popular with high-school students and staff, and has been widely praised by traffic safety and health experts across the country.

The TAT program, including audiovisual presentation, student pamphlets, teacher guides, and a set of visuals, was put together under contract to MIEMSS by the National Public Services Research Institute. The evaluation took place in Kenwood, Howard, Glenelg, Douglas, Suitland, and Fairmont high schools in Maryland. Students took knowledge and attitude measures both before and after the program was given. The "before" and "after" measures were compared to see how much students had improved. Including the one school in which students showed no benefit at all, improvement in knowledge test scores averaged 22 percent and 26 percent for sober driving and safety belts respectively, while increases in scores on attitude measures averaged 14 percent and 19 percent. Articles about the program appeared in school and community newspapers.

A sample of students was also asked to rate various elements of the program on a scale of 1 to 10. The audiovisual presentation registered an average of 9.8, with the large majority of students rating it as a perfect "10." Even the low-

est rating (for written materials) was an impressive 8.7.

The TAT program is based on research showing that sober driving and safety belts are the two most important steps in reducing traffic injuries and fatalities. Over half of highway fatalities involve alcohol, but among those under age 24, alcohol involvement runs as high as 75 percent. While safety belts won't prevent accidents, they can reduce the chances of injury and death by as much as 50 percent. The need to increase safety belt wear is apparent from statistics showing that less than 10 percent of teenagers now wear them regularly.

Prince Georges County is creating a model use of the program, putting emphasis on the four times of the school year when drinking and driving are most apt to occur: Homecoming, Christmas holidays, proms, and graduation. Counties in Regions II, III, and V have shown interest in the program so far. A program for parents is also being planned.

It is hoped that the TAT program will be spread statewide, through the Maryland EMS system. Arrangements to bring it into schools can be made by contacting the regional administrators, or by calling William E. Clark, director of field operations, MIEMSS, at (301) 528-3160.

— Ken McPherson