

State of Maryland

EMS News

Governor William Donald Schaefer

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For All Emergency Medical Care Providers

February 1994

8 of the Top 1,000 Items Impacting EMS Today

The EMS provider, Maryland, and the nation are in a constant state of reevaluation. One of the main areas being reevaluated is health care delivery; it is being reviewed by many—from the White House down to the citizen who accesses the health care system. Many basic principles need to be kept in mind in reevaluating our current health care system and in proposing changes. Maryland has a very sound EMS system from which to move forward into the 21st century. With that in mind, Maryland needs to look to issues that can be addressed to improve an already sound EMS system.

There are at least eight major items that should be addressed in the near future by the EMS community, the medical community, the state as a whole, and, in many respects, the nation. The following items will directly affect patient care and patient outcome issues.

Early Defibrillation

"The chain of survival" has been shown to have significant impact on the survival of cardiac arrest patients. All the elements of the "chain of survival" need to be in place for successful resuscitation—early access to 911, early CPR, early defibrillation, and early ALS. Early defibrillation can be achieved with the automated external defibrillator (AED) that can be used by the First Responder or EMT-A. This device, which has been shown to have significant impact on patient survival, needs to be readily available and applied without delay for optimal patient outcome. Our communities will need to support each program in the "chain of survival" in their own geographical area.

Managing Information

Quality Management

Appropriate Use of Existing Technology

Futile Resuscitation

Early Defibrillation

Decision Making by the EMS Provider

Health Care Reform

Advances in Technology

Futile Resuscitation

Currently in Maryland, based on protocol and standards of practice, a patient (except a card-carrying hospice patient) who is in cardiac arrest from any cause will receive full ALS resuscitation efforts and transport to the nearest hospital emergency department. However, many of these transports may be unnecessary, based on evidence that cardiac arrest patients who do not respond after significant prehospital advanced cardiac life support (ACLS) intervention, usually cannot be resuscitated in the hospital. In addition, transporting those patients who cannot be revived by ACLS in the field can jeopardize the safety of EMS providers and citizens at large. For example, a vehicle that is responding Code 3 to the nearest emergency department (ie, with lights, siren, and speed) could easily be involved in an accident; furthermore, an EMS crew transporting a patient who could not be revived in the field after significant ACLS efforts is unavailable to respond to a medical emergency if one occurs.

There are also significant health care costs and legal liabilities for prehospital providers associated with this issue of "futile resuscitation." Based on several recent articles highlighting both the strengths of prehospital ACLS and the almost certain mortality of a certain category of patients, we need to investigate the issue of cessation of resuscitation in the field for a particular subgroup of patients.

Quality Management

Nationwide, EMS is going through a revolution with respect to the management of quality. We are working to throw out the idea that most quality problems are due to a few "bad apples," individuals who are not doing their job properly because of incompetence or lack of caring. Instead, we are committed to the fact that EMS providers fundamentally want to contribute and do a good job for the patients they serve. Furthermore, we are realizing that most EMS performance problems can be traced back beyond the individuals involved to

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Treating Patients With Severe Burns . . .

February 6-12, 1994 is National Burn Awareness Week. Keeping this in mind and also the fact that the number of fires seems to increase during the winter months, we spoke with Lana Parsons, MS, ANP-C, about some reminders that she would like to give prehospital providers about the treatment and transport of burn patients. Ms. Parsons is the Burn Trauma Coordinator at the Baltimore Regional Burn Center at the Francis Scott Key Medical Center.

In Maryland, two burn centers

Baltimore Regional Burn Center

Under the direction of Andrew Muenster, MD, the Baltimore Regional Burn Center at Francis Scott Key Medical Center began caring for burn patients in 1968. Then known as the Kiwanis Burn Unit, it was designated a specialty referral center by MIEMSS in

Burn Patient Profile at Francis Scott Key Medical Center Fiscal year 1992-1993

Admissions		
Adults	203	(75%)
Children	69	(25%)
Total	272	
Average Age		
Average TBSA*	31 years	15%
Average Stay		
Mortality	14 days	19 patients (6.98%)
Type of Burns		
Flame	130 patients	(47.8%)
Scald	82 patients	(30.1%)
Flash	16 patients	(5.9%)
Electrical	16 patients	(5.9%)
Contact	10 patients	(3.7%)
Chemical	8 patients	(2.9%)
TENS†	4 patients	(1.9%)
Thermal	2 patients	(1.8%)
Inhalation Injuries		
	19 patients	(15%)
Mode of Transport		
Ambulance	222 patients	(81.6%)
Helicopter	44 patients	(16.2%)
Other	6 patients	(2.2%)

*Total Burn Surface Area

† Toxic Epidermal Necrolysis Syndrome

participate in the specialty referral system – the Baltimore Regional Burn Center and the Burn Center at the Washington Hospital Center in the District of Columbia. Both are similar in the number of beds dedicated to burn patients and in the number of annual admissions.

The decision of where to transport a burn patient is based on the location of the patient and on bed availability. Generally, burn patients in Maryland who are close to DC would be taken to Washington

1970 to care for severely injured burn patients in the state of Maryland and surrounding areas. Considered a national leader in burn therapy, this past year it received patients from Pennsylvania, Delaware, the District of Columbia, Virginia, West Virginia, Indiana, and Saudi Arabia, as well as from Maryland.

In the spring the Burn Center will be moving to a new building. Currently it consists of a 10-bed critical care unit for adult and pediatric patients, an adult 10-bed stepdown unit, and a pediatric stepdown unit. (Pediatric burn patients are evaluated in the Burn Center. If stable, they are transferred to the Pediatric Unit where they are cared for by the Burn Service along with the Pediatric Service in consulting roles. Pediatric patients requiring intensive care remain in the Burn Center.) Last year 203 adults and 69 children were admitted. Patients arrive by ambulance or helicopter, either directly from the scene where the injury occurred or from a hospital where they were taken for stabilization.

A multidisciplinary approach is taken toward burn management. The burn team consists of physicians, physician assistants, plastic surgeons, nurses, nurse practitioners, physical therapists, occupational therapists, respiratory therapists, pulmonary technicians, dieticians, social workers, psychologists, psychiatrists, and religious counselors – all specially trained in burn care. This multidisciplinary approach is continued after patient discharge. The Burn Clinic, Rehabilitation Services, Psychological Services, and the Baltimore Center for Burn and Plastics

Hospital Center; burn patients in other parts of Maryland would be taken to the Baltimore Regional Burn Center. However, if beds are full in either of these burn centers, patients would be taken to the burn center with available beds or to an appropriate trauma center in special situations.

Further information on burns can be obtained by calling the Baltimore Regional Burn Center (410-550-0890) or the Burn Unit at Washington Hospital Center (202-877-7241).



Lana Parsons checks a burn patient.

Interhospital Transports

SYSCOM (1-800-648-3001) will assist the referring physician in determining bed availability at the Baltimore Regional Burn Center (BRBC) and the Burn Unit at the Washington Hospital Center. Consultation with the BRBC also may be arranged through SYSCOM.

Information needed by the burn center:

- Referring physician's name
- Referring hospital
- Location within hospital
- Phone number for call back
- Patient information (name, age, respiratory status, mechanism of injury, extent of injury, treatment rendered)

When the patient has been accepted, the burn center will recommend either air or ground transport and whether or not a burn team is needed during transport. If the patient is transferred by helicopter, SYSCOM will make the transportation arrangements. If the patient is transferred by ground, the referring hospital will make arrangements through its jurisdictional ambulance service.

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... What Prehospital Providers Should Do

Usually one or more of the following four types of burn injuries confront prehospital care providers:

1. Thermal injuries (including those caused by flames, steam, scalding liquids, or vapors igniting and resulting in a flash or an explosion)
2. Chemical burns (including those caused by acids or alkalis)
3. Electrical injuries (caused by lightning and other electrical sources)
4. Inhalation injuries (caused by toxic substances, such as carbon monoxide)

Burn injuries differ not only by type, size, and depth, but also may be accompanied by different complications. For example, respiratory/cardiac arrest (ventricular fibrillation most common) often results from electrical injuries. Damage to nerves, blood vessels, and muscles from electrical current can be indicated by hemorrhage or by loss of sensation or movement. In addition, the force of the electrical current often can cause a blast - or explosion-type injury (ie, multiple trauma).

Stop the Burning Process

Whatever the cause of injury, the prehospital provider first needs to extinguish the burning process. For thermal burns, roll the victim on the ground or smother the flames with a blanket or water. Cool a small burn with moderate tap water, not cool or cold water.

Chemical burns need to be flushed profusely with water in order to dilute the chemical. (Any powdery chemical

Baltimore Regional Burn Center

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Reconstruction are available to patients.

Research, burn prevention programs, and a burn camp for children (the first on the East Coast) are also vital components of the Baltimore Regional Burn Center. The Center's stress on burn education is also evident in the publication of *Severe Burns: A Family Guide to Medical and Emotional Recovery* by the Johns Hopkins University Press last November. The book, with chapters by Dr. Muenster, the Burn Center staff, and former burn patients, will be highlighted at the April meeting of the American Burn Association.

should be brushed off before it is flushed.) Burns from hydrofluoric acid (an industrial cleaner for getting graffiti off walls) need to be treated with calcium gluconate gel or a zephiran solution.

In electrical injuries, remove the victim from the electrical source, taking precaution to protect yourself from injury by using non-conductive equipment, or have the power turned off.

Victims with inhalation injuries must be removed from the environment of the toxic gases.

Assessment

Burn treatment is secondary to ensuring an adequate airway. Always check the ABCs (airway, breathing, and circulation).

Burns (especially those found on the face, neck, or mouth or those

When to Transport To a Burn Center

- Second- or third-degree burns
 - Greater than 10% body surface area in patients under 10 or over 50 years of age
 - Greater than 20% body surface area in other age groups
 - Burns of the face, hands, feet, or perineum
- Electrical burns
- Chemical burns
- Burns complicated by smoke inhalation. (Patients with carbon monoxide toxicity and no major burns should be considered for treatment at the Hyperbaric Medicine Center at the R Adams Cowley Shock Trauma Center.)
- Burns complicated by single system trauma
- Burns in patients with serious preexisting medical conditions, such as diabetes, stroke, paralysis

resulting from closed-space fires) can result in airway obstruction, due to swelling of the burned tissue which may compress internal respiratory structures, thereby blocking the airway. According to Lana Parsons, MS, ANP-C, Burn Trauma Coordinator at the Baltimore Regional Burn Center, "three things make us nervous. They are stridor (obvious from the victim's tracheal sounds); drooling (indicative that the victim's throat is beginning to

swell, preventing swallowing); and increasing hoarseness (scratchy voice)." These symptoms usually indicate airway obstruction or smoke inhalation. Other signs of concern are singed nasal hairs and soot in the sputum. Ms. Parsons emphasizes that an esophageal obturator airway (EOA) should NEVER be inserted in a burn patient. Breathing in hot air or smoke can damage the upper respiratory passages, causing swelling. If you insert an EOA into the esophagus, there is no room for the trachea to compress the esophagus while it is swelling; if the trachea does swell, the patient will not be able to breathe.

If the patient is in respiratory distress and there is no way to secure the airway (ie, the patient cannot be intubated in the field), the prehospital providers will be directed to take the patient to the nearest hospital; after the airway problem is resolved, the patient can be transferred to the Burn Center.

Cardiac arrhythmias and cardiac arrest frequently result from electrical injuries. Trauma associated with other burn injuries also may result in cardiac failure. During transport, patients should continue to be monitored for airway and cardiac problems.

During the secondary survey, check for injuries that may be associated with burns (for example, muscle and skeletal injuries resulting from falls, electrical shocks, or car crashes).

Treatment and Transport

Place a sterile (clean if sterile is not available), dry sheet underneath the patient and cover the patient with it. This will help avoid contamination from bacteria.

Because of damage to or loss of skin, the patient's temperature will drop quickly. If shivering, the patient should be wrapped or covered with a blanket. In addition, in summer the air conditioner in the ambulance may need to be turned off. If IV fluids are given, keep them at room temperature (never give cold fluids).

Never apply topical ointments to a burn since they will have to be removed at the Burn Center (a painful process) when the patient is evaluated.

Never pull clothing away from the wound or you will pull the skin away (clothing will be dampened and

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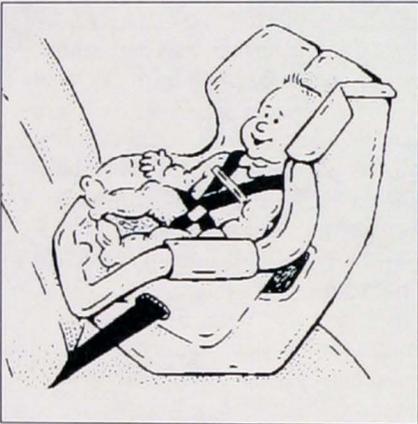
Prehospital Care for Pediatric Patients . . .

Editor's Note: National Child Passenger Safety Awareness Week is February 13-19, 1994.

Traumatic injuries can happen to anyone, anywhere, anytime, but traumatic injury is the number one cause of death and disability in children. Traffic-related injuries are the primary type of trauma in children and adolescents. According to Maryland SAFEKIDS, nationally there were approximately 170,000 children injured as passengers in motor vehicles; of these, 1700 were killed. Of the children under 4 years of age who were killed, at least 70% were in some form of car seat but most were improperly restrained. (Car seat check points and

Rear-Facing Infant or Convertible Seats

- rear-facing position from birth until 12 months and 20 pounds



Booster Seat

- as a transition to safety belts for older children who have outgrown convertible seats—ideally those children who weigh more than 40 pounds and are four years of age to eight years or 70 pounds.



Illustrations courtesy of National SAFEKIDS

car seat clinics have found that 80-90% of children are improperly restrained.) But pediatric trauma can be prevented. Through both primary and secondary injury control, the EMS community can lead the state in decreasing this cause of mortality and morbidity.

Although the incidence of spinal cord injuries (SCI) in children is very low, there is a predictable pattern of occurrence related to the child's developmental age. At the greatest risk to sustain SCI are infants who are unrestrained, inappropriately restrained, in high speed motor vehicle crashes, or victims of shaken baby syndrome. Most SCI in toddlers and preschool-age children occur when they

Convertible Seat

- forward-facing position from 12 months or 20 pounds to four years or 40 pounds.



Lap/Shoulder Belt

- use belt alone if it fits across the child's hips and does not cross the child's face or neck or ride up across the stomach.
- age eight and older or 70 pounds or more.



are pedestrians struck by motor vehicles or when they are passengers in car crashes (especially if restraint devices are used improperly). School-age children sustain SCI from pedestrian/motor vehicle crashes, falls, and the lap belt complex resulting when young children (under 70 pounds) wear only lap belt restraints. (The "Lap Belt Complex" will be discussed in a future newsletter.) The adolescent population has the highest incidence of SCI from motor vehicle crashes, sports injuries, diving, and penetrating injuries.

"Children are not just small adults" is the tenet of pediatric trauma care. The injured child has specific anatomical and physiological differences, as well as emotional and cognitive differences, based upon the individual's stage of growth and development. The small child has greater mobility in the cervical spine with specific differences in the

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Maryland's Child Passenger Restraint Law

Maryland's law currently protects children from birth through 10 years of age. Specifically the law requires that children up to 4 years of age and children weighing up to 40 pounds ride in a car safety seat. Children through age 10 must be in a safety restraint device, safety seat, or seat belt. This law applies to all drivers regardless of relationship (family or friend) to the child and is subject to primary enforcement by police officers.

Maryland Kids in Safety Seats (KISS) coordinates a loaner seat program across the state. To locate the loaner seat program nearest to you, call Maryland KISS at 410-225-1376 or 1-800-370-SEAT. KISS also publishes a quarterly newsletter called "NewsNotes," providing updated information on child passenger restraints. During the 1993-94 year, Maryland KISS, the Maryland Department of Transportation, and the Maryland Child Passenger Safety Association are conducting child passenger safety training in four locations in Maryland. The program is approved for prehospital and nursing continuing education credits. More information is available through the KISS office.

. . . Spinal Injuries and Immobilization

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ossification patterns in the vertebral bodies, the distance between the cervical vertebrae, the increased weight of the head in proportion to the chest and body, and decreased resistance to motion. Infants who do not have head control are at greatest risk for cervical injury from deceleration forces. The cartilage and ligamentous structures in the spinal column are more elastic than the spinal cord tissue, thereby placing the young child at risk for cord damage. When this damage occurs, changes cannot always be seen on the spinal X-rays. This type of SCI is called SCIWORA or Spinal Cord Injury Without Radiographic Abnormality. Research reports that between 25 and 50 percent of children present with SCIWORA.

Common Errors

Remember that at least 80% of children on the road today will be improperly restrained. The following are common errors:

- Facing the wrong way
- In the wrong type of seat
- With the wrong seat belt securing the seat
 - Without a locking clip on the seat belt
 - Too small to be in an adult restraint system
 - Two children in one seat belt
 - Rear facing infant seat in a passenger seat that has an airbag

Early recognition of SCI and of the potential risk of permanent injury starts with prehospital care. SCI should continue to be suspected until the child has been evaluated by a trauma team experienced in children's injuries. After any traumatic injury that involves motion (motor vehicles, falls, diving, child abuse), the cervical spine should be suspected for injury. Both column and cord injuries are seen with these mechanisms of injury. As with other injuries, the emergency priorities of care are the ABC-Cs.

Immobilization of the young infant's or child's cervical spine poses a challenge to many professionals. The basic principles include:

- Secure the child in a neutral inline position.
- Perform the initial ABCs of the primary survey and provide treatment

accordingly.

- Position the child within the car seat or on a backboard.
- Secure the child's forehead and maxilla (upper lip) with tape.
- NEVER attach tape, straps, or collars to the child's chin, since this will push the mandible and the attached tongue back and completely or partially obstruct the airway and breathing.
- Prevent lateral motion of the head and of the entire spinal column with towels and blankets to prevent any movement.
- Secure the entire body to the car seat or board.
- Secure the immobilization device to the stretcher.
- Reassess the child's primary and secondary survey in transport.

Due to the relatively large size of an infant's or young child's head, the occiput pushes the neck forward when the child is lying flat. Backboards should be modified by placing a small towel or cloth under the shoulders and upper chest of the child before rolling the child onto the board. There are commercially available immobilization devices that have occiput recess areas built in. Many new devices currently are available for immobilization, but not all can accommodate the varying heights and weights of all children. The bottom line is: "Fit the equipment to the child's size, not the child to the equipment." If the child is too small for the available "pedi" collars and boards, use the basic principles above and monitor the child closely during transport. Further research is needed to ensure safe immobilization with these "high tech" spinal boards.

Children up to 4 years of age and 40 pounds should be in child safety seats when riding in motor vehicles. If the child is found in an infant seat or a car seat that has been properly positioned and secured in the car, there has been some protection for the spinal column and cord. But the C spine is still susceptible to flexion and hyperextension forces, depending upon the crash dynamics. The infant or car seat can be used for immobilization after the following evaluation:

- The seat is free from any structural damage.
- A brief primary survey (ABCs) finds no critical injury or airway

compromise. Since it is difficult to perform BLS and ALS respiratory and cardiac resuscitation on a child in a car seat, transfer the child to an appropriate backboard while maintaining manual stabilization if deterioration is suspected.

- The seat can be secured on the stretcher and in the ambulance with the seat in a rear facing position.
- Any protection plate over the chest has been removed to allow for adequate assessment.

Essential to the proper immobilization of an infant or child in a child restraint seat is the additional padding and taping to prevent spinal movement and the resulting secondary injury. A rigid cervical collar can be used IF the correct size is available for that child. If the collar is too large it will hyperextend the child's neck and possibly place pressure on the chin, thereby increasing the risk for airway compromise. Small blankets, towels, cravats, and

IMPORTANT

Any child restraint device, car seat, or booster seat that has been involved in a motor vehicle crash should NOT be used again. Parents and guardians should be encouraged to contact the manufacturer for specific instructions. Many companies will send the family a new car seat and request that the one from the crash be returned to them for evaluation and research.

trauma pads can be rolled and used to pad around all open areas between the child and the sides of the car seat. The padding must be placed on either side of the head, torso, and lower extremities as the child's size indicates. If the car seat has straps without a chest plate, the straps can be left in place to help secure the child as long as they do not interfere with respiratory assessment.

Sandbags and IV bags should NOT be used to immobilize the child's head regardless of the type of immobilization device (car seat, backboard, or pediatric immobilization board). The weight from these bags may put pressure on the child's shoulders affecting respiratory efforts and, if the child is log-rolled to clear an airway after vomiting, the weight of the bags may shift the neck laterally.

Padding and/or a cervical collar alone do not adequately immobilize the
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Pediatric Spinal Injuries

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child within the car seat. The forehead and the maxilla must be taped securely to the frame of the car seat. Twisting the tape 360 degrees in the middle before taping the maxilla will allow for nasal air passage and should decrease discomfort for the child. The child's torso and extremities must also be secured with straps or tape. In some newer model vans, the car seat is built into the bucket or bench seat. In this situation the child should be removed from the seat and immobilized on a backboard with the appropriate sized equipment, with the prehospital provider taking the same precautions with the child as he/she would with an adult.

Judgment must be used when immobilizing the young child. IF the child's condition and the manpower in the field permit one provider to stay with the child, ONE hand can be left free for the child's comfort. A provider's thumbs and fingers are great reassurance and comfort for infants and toddlers. Children of all ages want to hold onto a parent's or provider's hand or hold a toy. One word of warning: children will untie, untape, and unbuckle anything in less than half the time it took an adult to secure it. Therefore, for every child's hand that is free, two provider hands and eyes are required. Meeting the emotional needs of the child must go "hand in hand" with preventing further injury and potential disability. As with all pediatric medical and trauma cases, remember the child and parents can hear everything that is said.

After traumatic injury the spinal cord may sustain injury through different mechanisms. Transection of the cord caused by a penetrating object results in incomplete or complete lesion at the level of the penetrating injury. In motor vehicle crashes, physiological transection, usually complete, occurs when the vascular system to the cord is compromised from blunt force and hemodynamic changes. The spinal cord may suffer an incomplete lesion from bruising or contusion to the cord from blunt force or shaking.

Functional classification of the extent of cord injury has been developed for ongoing assessment and prognosis. The **Frankel** grades are widely used to describe spinal cord injuries (Mandzak-McCarron, 1988). Adapted from the text of the American Spinal Injury

Association, they are:

A - Complete Transection.

B - Incomplete. No voluntary motion. Preservation of sensation.

C - Incomplete. Preservation of voluntary motor component, but not enough to permit functional activity. Sensory function may/may not be present.

D - Incomplete. Preservation of voluntary motor component that permits some functional activity. Sensory function may/may not be present.

E - Complete Recovery. Full return of voluntary motor component and sensory function. Abnormal reflex may persist.

After initial stabilization and resuscitation, the child who has sustained a cervical spinal column and/or cord injury will be placed in a temporary immobilization device. Usually the Halo vest is used by surgically placing pins in the skull and attaching them to a ring that secures to a vest, which is then strapped on. The child will wear this Halo vest for three to four months until the column injury stabilizes with callus. A very young infant will require a specially designed Minerva cast that immobilizes the infant's head, neck, and upper torso. These Minerva casts are made by the pediatric trauma center's occupational therapy department in collaboration with the neurosurgery and rehabilitation medicine departments. A child will return home in either this special cast or a Halo vest. Special transportation arrangements may be needed to provide for outpatient follow-up. The Trauma Team will help the family to identify the appropriate car seat, booster seat, or other means for child restraint during travel. Surgical stabilization with wires and bone chips is sometimes the treatment of choice for early mobilization of a child without cord injury or with incomplete cord injury. The primary goal of spinal cord injury management is the early mobilization of the child and the early resumption of the role of primary caretaker by the parents, first in hospital rehabilitation and then in their home and community.

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to this article.*

Trauma Case Review At Burn Center

MIEMSS will hold trauma case reviews in conjunction with the staff of the Baltimore Regional Burn Center and prehospital care providers on March 30, from 7 pm to 9 pm at the Francis Scott Key Medical Center. Continuing education credits (2 hrs B, 2 hrs T) have been approved. Refreshments will be provided. Please RSVP by calling 410-706-3993.

INJURY PREVENTION UPDATE: Maryland 1994 Legislative Session

The article on pediatric spinal injuries and immobilization in this issue reviews the current Maryland child passenger restraint laws. This is the 10-year anniversary of the first child restraint legislation in Maryland. Significant improvements have been made since the first legislation and continue to be proposed. In the current legislative session, a bill will be introduced to extend the existing passenger restraint laws to include children over 10 and under 16 years of age. Currently this age group is not covered by passenger restraint laws for either adults or children.

Some other injury prevention issues for the 1994 legislative session include the following. Bike helmet legislation for children and adults is being considered in Baltimore County and in the Maryland House and Senate. The current motorcycle helmet law will be discussed by the State legislature. Handgun legislation has been identified by Marylanders Against Handgun Abuse (MAHA) as a target for this session. Other pediatric issues will include children riding unrestrained in the back of pickup trucks and the use of all terrain vehicles (ATVs) by children.

The 1994 legislative session has just opened. There are many issues related to injury and illness prevention and control that may be introduced as bills. (MIEMSS maintains a list of EMS-related topics covered in proposed legislation.) To obtain information on upcoming and current legislation, you can contact your local legislative representatives' offices in your area or in Annapolis, your local League of Women Voters, or call the Library and Information Services Division of the Department of Legislative Reference (410-841-3810; 301-858-3810; or 1-800-492-7122, ext. 3810).

8 of the Top 1,000 Items Impacting EMS Today

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a deeper flaw in the design of the system. In many cases these flaws make individual performance problems inevitable.

Approaching quality management from a systems perspective will reduce the fear of punishment and criticism fostered by the "bad apple" approach. When fear of punishment and criticism is removed, quality management and the data collection involved take on new meaning. Just as baseball players and teams focus on individual and team batting averages, EMS providers can develop a new enthusiasm for performance information, such as average response times and patient care procedure success rates. When the averages and rates indicate that individuals and teams are struggling, positive, helpful coaching and systems-oriented problem solving must occur. Our new approach to quality will place high value on the participation of each provider and ambulance squad "team," in an effort to monitor, maintain, and improve their own patient care "batting averages." The primary role of MIEMSS will be to help each provider and ambulance squad achieve excellence by facilitating the process of quality control and improvement at local, regional, and statewide levels.

Managing Information

Throughout the many components of the medical care delivery system, information is gathered in many different formats in multiple data bases, most of which are not compatible. There needs to be a centralized mechanism for integrating information about a single patient, tracking him/her throughout the entire medical system, from the time 911 is activated to the time of discharge following rehabilitation. This data can be used efficiently to evaluate appropriate interventions in the field as well as new advances in technology. Emergency medical services has been weak in prehospital care data and research. This must be corrected.

Appropriate Use Of Existing Technology

Emergency medical services, in many respects, has been the neglected child of the medical society. Many people have disagreed about what is essential to prehospital care. To that end, there needs to be a commitment

not only by the EMS community but also by the physician and medical communities to look at what is paramount to the delivery of good patient care in the prehospital setting. Certain devices and medications are essential to quality patient care regardless of the patient's environment. Existing technologies that have been shown effective in decreasing patient mortality and morbidity need to be placed where they can be efficiently used to save the most lives. Clearly, airway management is a classic example of this; thus Maryland has taken endotracheal intubation, which is the Gold Standard for airway management, and approved its use by all ALS providers.

Decision Making By the EMS Provider

As we move forward into the evolving medical care delivery system, the EMS provider is going to be the cornerstone of that system and needs to be empowered to make appropriate medical decisions in the out-of-hospital environment. The medical community needs to develop a supportive role rather than a "controlling" role. The EMS provider of today is a highly trained caregiver who has the ability and the expertise to make appropriate decisions based on an on-the-scene patient assessment and on standards of care in the community. The prehospital provider will be able to take on more responsibility and more autonomy from physician support; medical direction will be reserved mainly for those circumstances not covered by current standards of care.

Advances in Technology

A mechanism for collecting adequate patient data, especially patient outcome information, is needed to successfully evaluate new technologies in a timely manner. The EMS field community, in many respects, is gadget oriented. However, the fact that technology is available does not necessarily mean it is in the best interest of the patient to provide it in the out-of-hospital environment. New devices must be proven to be effective and improve patient management or outcome before they are used in the field.

Health Care Reform

Emergency Medical Services is an essential resource that is available 24

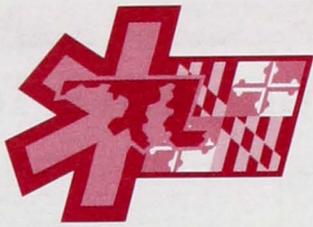
hours a day to all citizens regardless of the type of injury or illness or circumstances surrounding it. The EMS service is a broad-based organization of volunteer and career personnel dedicated to serving the citizens of Maryland and prepared for any contingency on a moment's notice. According to EMS protocols and the echelons of care in Maryland, victims of injury or illness must be taken to the nearest, most appropriate hospital for emergency patient care. Thus, it will be very difficult to put Maryland's broad-based, EMS service into a structured HMO or PPO system, where patients are transported only to hospitals that are part of the HMO or PPO system. The treatment and transport of emergency patients should not be driven by the financial interests of a specific HMO or PPO but by what is in the best interest of the patient. If the current process of transporting an emergency patient to the nearest, most appropriate hospital is reversed, patient outcomes and survival will be dramatically impacted. As we look at the health alliance concept, the emergency medical services system must be addressed as a unique entity with unique priorities (with the patient's best interest being its primary focus).

These eight issues facing EMS, as discussed above, are not simple and cannot be resolved today. But they need immediate attention. Please think about them, discuss them with your peers, brain-storm about them. How these issues are resolved will influence the future of our EMS system.

◆ *Richard Alcorta, MD, FACEP*
Acting State EMS Director



EMS Care '94 will be held at the Omni Inner Harbor Hotel in Baltimore. Preconference activities are scheduled for April 28-29; conference activities, for April 30-May 1. EMS Care '94 is sponsored by MIEMSS and the Region III EMS Advisory Council; it is being hosted by the Baltimore City Fire Department. For information, call MIEMSS at 410-706-3996.



Governor William Donald Schaefer

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**Maryland Institute
for**

Emergency Medical Services Systems

636 W. Lombard St., Baltimore, MD 21201-1528

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DATED MATERIAL

Prehospital Burn Care

(Continued from page 3)
removed at the Burn Center).

Because shock is a later complication of burn injuries compared with other trauma, the Burn Center does not require IV fluids unless pain medication is needed or your estimated time of arrival (ETA) is more than one hour. Pain medication is usually recommended when the ETA is greater than 20 minutes or when the patient has burns greater than 15%. If pain medication is given, the Burn Center recommends small frequent doses of morphine rather than one large dose because a burn patient absorbs and uses morphine very rapidly. According to Ms. Parsons, 3 mg IV morphine probably will be prescribed initially, repeated by 3 mg every 10 minutes, not to exceed 10 mg. She stresses that the Burn Center is trying to ensure that the patient is as alert as possible during admission and evaluation at the Burn Center.

Most burns, except for first-degree burns (involving only reddened skin as in sunburn), should be transported to a burn center. But remember to treat medical emergencies and trauma first, as if the burn injury did not exist. Also remember that burns are more serious for children and for the elderly. They need immediate transport, as do burn

patients with respiratory disease, heart disease, diabetes, or past history of a stroke.

As a prehospital care provider, you are the first person to assess and treat a burn patient. You are an integral part of the burn team. Your judgment and skills, especially in the areas of respiratory problems and hypothermia, may be critical to a patient. And the Burn Center team relies on your assessment in their preparation to receive a patient. If you have questions during your assessment, do not hesitate to ask the Burn Center for consultation via SYSCOM (1-800-648-3001).

◆ *Beverly Sopp*

Brochure, Poster Available On Domestic Violence

"Domestic Violence: What to Do When Your Home Isn't Safe," a brochure published by the Maryland Network Against Domestic Violence, is available free of charge to hospital emergency departments. To request copies of the brochure, call 301-942-0900. A poster is also available by calling the same number.

Poison Prevention Week

March 20-26, 1994 is National Poison Prevention Week. This event, proclaimed by the President of the United States, the Governor of Maryland, and the Mayor of Baltimore City, is a means for communities—including the EMS community—to raise awareness of the dangers of accidental poisonings. Each year the Maryland Poison Center, located at the University of Maryland School of Pharmacy, conducts a major statewide educational and promotional campaign in conjunction with Poison Prevention Week. This year's theme is "Children Act Fast...So Do Poisons!"

If you would like to participate in National Poison Prevention Week and need promotional/educational materials (including Mr. Yuk stickers), call the Maryland Poison Center at 410-706-7604.

In addition, a seminar for health professionals on the diagnosis and treatment of poisoning emergencies will be offered March 17, from 8 am to 4:30 pm at the University of Maryland at Baltimore's School of Pharmacy. The seminar is sponsored by the Maryland Poison Center and the MIEMSS Department of EMS Nursing and Specialty Care. Continuing education credits will be awarded to pharmacists and nurses. The cost of the seminar is \$50. For information or a brochure, call 410-706-7604 or 410-706-3695.