DEMS MIEM MERGE, FORMING MIEMS

Effective July 1, 1977, the Division of Emergency Medical Services (DEMS), the coordinator of the statewide EMS system, and the Maryland Institute for Emergency Medicine (MIEM), the clinical core of Maryland's EMS system, will be combined into the Maryland Institute for Emergency Medical Services.

This amalgamation will provide for the continuation of the activities and functions of both DEMS and MIEM under a central unified management. The new Maryland Institute for Emergency Medical Services (MIEMS) will be part of the University of Maryland at Baltimore. DEMS is now under the Maryland Department of Health and Mental Hygiene; MIEM is part of the University of Maryland Hospital. Both will be transferred to the University of Maryland at Baltimore to become part of the new MIEMS. In the past, DEMS and MIEM have always worked closely with each other to improve patient emergency care and develop the essential supporting systems of communication, transportation, education, and coordination.

R Adams Cowley, M.D., Director of DEMS and MIEM, will assume the directorship of the combined MIEMS. Appointed by the Board of Regents of the University of Maryland, Dr. Cowley will be responsible to the chancellor of the University of Maryland at Baltimore.

The amalgamation of DEMS and MIEM is the result of state legislative action passing Senate Bill 852. This bill was introduced by Senator Roy Staten (D., 8th). The bill, with amendments, was approved by the Senate and the House and signed into law April 29 by Lt. Governor Blair Lee.

John Stafford, M.D., DEMS Director for Professional Services, and Norman Tarr, M.D., MIEM Medical Administrator, witnessed the signing ceremony and were presented the pens used to sign the bill.

The main focus in furthering Maryland's EMS system will be the development of advanced life-support systems, requiring physician and hospital input. This advanced training will benefit from the clinical components and EMS-systems professionals of the new MIEMS.

There are several advantages offered by affiliating MIEMS with the University of Maryland. The professional schools of Medicine and Nursing will provide an appropriate environment for advanced life-support training and other educational programs. The organizational change will make possible closer cooperation with the University's Fire and Rescue Institute which is responsible for basic life support training and with the University College for continuing and adult education courses. The University aegis will give legitimacy and credibility to accrediting MIEMS instructional programs. Additional grants for EMS development should also be more available when the DEMS programs are within the University.

The relationship of citizens, providers, hospitals, and communities in Maryland to the combined organization will not change substantially, except that it should be easier to deal with the unified management.

BALTIMORE REGIONAL BURN CENTER COMPLETES RENOVATION

"Death and survival are not the critical issues in burn care. Both of these are related to burn size and the age of the victim, and there is relatively little that can be done to dramatically change these conditions. But we can improve the result of burn care in those that survive."

As Andrew M. Munster, M.D., Director of the newly expanded Baltimore Regional Burn Center at City Hospital, continues to speak about burn care, he explains the team approach to the severely burned patient. This team approach is concerned not only with medical management but with facilitating the patient's return to normalcy in all areas of life. It is in this team approach that the Burn Center—a specialty referral center in the State's EMS system—differs from community hospitals. Although many community hospitals offer burn treatment, they do not provide their own staff of supportive services dedicated to the specialized care of the burn patient.

The "burn team" at Baltimore's Burn Center consists of doctors, nurses, physical and occupational therapists, psychologists, psychiatrists, teachers, medical social workers, rehabilitation guidance counselors, and clergy. Team members contribute to the total

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From 1976-77 Annual Report

This year, DEMS and MIEM joined to become the Maryland Institute for Emergency Medical Services (MIEMS). At the end of April, Senate Bill 852 was signed into law, amalgamating the two agencies. The merger, effective at the beginning of the next fiscal year, July 1, 1977, will lend the educational, research and professional expertise of the academic and clinical center to the state EMS system as it enters an Advanced Life Support phase.

The merger will make formal the close relationship MIEM has always had with the rest of the state EMS system. For instance, the concept of specialty referral centers was developed at MIEM. The network now includes the Johns Hopkins Pediatric Trauma Center, the Neonatal Intensive Care Programs at University of Maryland Hospital, Baltimore City Hospitals and Johns Hopkins Hospital, the Baltimore City Hospitals Kiwanis Burn Unit, and the Hand Center at Union Memorial Hospital.

Patient transfer between these facilities via Maryland State Police Med-Evac Helicopter is coordinated by the systems communications control center (SYSCOM). Housed at MIEM, SYSCOM makes it possible for patients to arrive for emergency care "by appointment."

Although an autonomous institute within the University, a status which will continue as MIEMS, MIEM has always worked with the University of Maryland Schools of Medicine, Dentistry, Nursing, Social Work, and Engineering in solving problems of education, research and systems of patient care. Departments and divisions within the School of Medicine that use the resources of MIEM and have set up programs in cooperation with the Institute are the Departments of Anesthesiology, Pathology, Pediatrics, Psychiatry, Radiology, Rehabilitation Medicine, and the Divisions of Neurosurgery, Infectious Diseases, Nephrology, Cardiology and Thoracic Surgery.

MIEM works with many goverment and private agencies, such as the State Medical Examiners Office, Aberdeen Proving Ground (AMSAA), Edgewood Arsenal (Biophysics Division), the U.S. Departments of Health, Education and Welfare and Transportation, the National Aeronautics and Space Administration, the American Trauma Society, and the National Traffic Safety Administration.

The Maryland Institute for Emergency Medicine is thus a public institution offering specialized education, research and patient care resources to institutions, agencies and citizens of the state who wish to study problems of emergency medical services. Working with Maryland's medical community, MIEM operates as the systems control center for the statewide emergency medical services system. Next fiscal year, as MIEMS, the Institute will officially encompass and administer the whole Maryland EMS system.

of understanding and improving care for critically ill and injured patients. A statewide evaluation system monitors the interactions and effectiveness of EMS components.

Mid-Atlantic EMS Council

Recognizing that emergency care cannot stop at state lines, Maryland led in the establishment four years ago of a six-state consortium, including representatives from Maryland, Virginia, West Virginia, Pennsylvania, Delaware and the District of Columbia. The group deals with interstate problems associated with reciprocity of training, certification, communications, transportation, reimbursement and legislation.

Summary

The EMS program in Maryland has evolved into a unique, comprehensive system. No longer affiliated with a state health department, it remains a cooperative, voluntary system.

The University connection strengthens the ALS educational component required on EMS systems, and provides greater resources. The sharing of those resources leads to increased cost-effectiveness. The Med-Evac system and the Echelons of Trauma Care concept also increase the system's cost-effectiveness by ensuring that patients are seen by precisely the personnel who can best treat them, at the facility best equipped to care for them within a time period that ensures their survival.

Maryland has proven that a system built on coordination, education and local participation works to provide the highest quality possible in emergency medical care.

R. Adams Cowley, M.D.,
Director, Maryland Institute
for Emergency Medical Services

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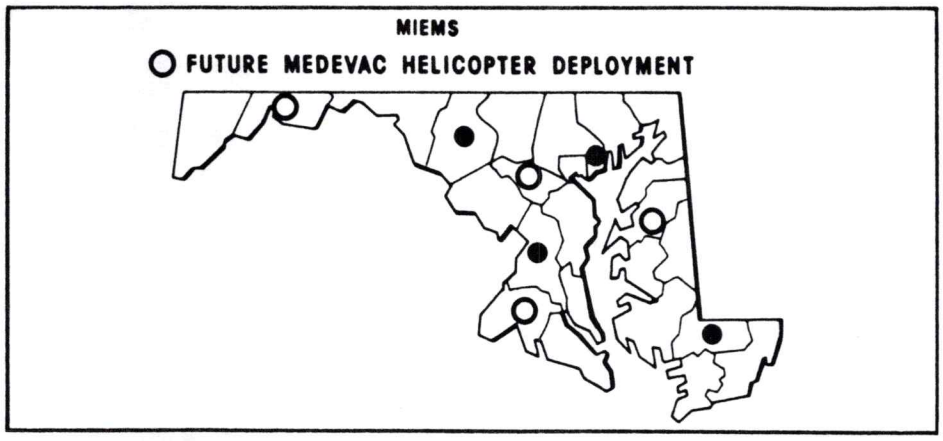

Expanded helicopter service will include more bases to thoroughly cover the state. Black dots indicate present bases.

CALENDAR OF MEETINGS

May 4-6: "Conference on Special Rescue and EMS–The 'How To' of Rescue," Colorado Springs, Colorado, Four Seasons Motor Inn, Coordinated by MAST, sponsored by ACT Foundation and ATS. Contact: Marvin A. Wayne, M.D. (206) 676-6830.

May 5-6: "American Trauma Society Annual Meeting"–Washington Hilton, Washington, D.C. Contact: Susan L. Weed (312) 649-1810.

May 8-11: "1978 International Symposium on Trauma"–Washington Hilton, Washington, D.C. Sponsored by The American Assn. for the Surgery of Trauma and The National Institutes of Health. Contact: John A. Boswick, Jr., M.D. (303) 394-8718. Reg. Fee: $100.

May 12-13: "Emergency Management at an Airport Catastrophe," University of Maryland School of Medicine, Baltimore, MD. Contact: Jack L. Mason, Ph.D. (301) 528-7346.

May 18-20: "Fifth Annual Trauma Symposium: 'New Frontiers in the Field of Truma'", sponsored by ATS & Medical College of Ohio, Holiday Inn-Perrysburg, Ohio (suburb of Toledo). Reg. Fee: M.D. or D.O.–$100; Nurses–$60. Contact: Dr. Howard Madigan (419) 381-4237.

Sept. 11-13: "National EMS Public Education and Information Symposium," New York Sheraton Hotel, New York City. Sponsored by HEW, ATS, ACT Foundation, ACEP, NAEMT's among others. Contact: Lee Shuck, National EMS Office, 6525 Belcrest Rd., 11th Fl., Hyattsville, MD 20782 (301) 436-6290.

Statewide communications system links Emergency Medical Technicians by voice and telemetry with hospitals.

Guest Comment

The Trauma Center: Your Partner In Saving Lives

By R Adams Cowley, MD

IT WAS a dreary evening on a rural road late Saturday night. It was the kind of evening that breeds accidents. You arrive with your ambulance after being called by the local police. Two cars have collided head-on. The reasons are not clear yet — perhaps drinking, driving too fast, or losing control on the narrow road. That doesn't really matter right now. What matters is the man crumpled behind the steering wheel of one car and the youth thrown from the other.

While your partner administers aid to the youth, you rapidly assess the man's injuries and carefully remove him from the car. His breathing is very shallow; his pulse is unpalpable. His face and head are lacerated, his left leg broken. He probably has internal chest or abdomen injuries, and he is in shock. Your partner tells you the youth appears to have a broken neck and head injuries, combined with lacerations and a compound fracture of the arm. He is also in shock. You know your job and move into action. You do what needs to be done, including checking the ABCs, applying splints, and running IV fluids. Soon you have both victims in the ambulance, as stable as possible.

But now what? Can they survive? The nearest hospital is 20 miles away in a small community. You know that a competent ER nurse is the only one on duty on weekend nights. How quickly can she get help to manage these two severely injured people? Will they live until they get the treatment and surgery needed?

The best care of the most critically injured patients at the scene and en route cannot save lives without definitive, sophisticated care at the receiving facility — within an hour.

In Maryland, patients can be assured they will receive that type of care. After assessing the severity of the two patients' injuries, Maryland emergency personnel can call for a State Police Med-Evac helicopter. While they initiate lifesaving measures, the helicopter is on the way. The EMT-trained co-pilot then assists them with resuscitation, and within an hour, even from the farthest corner of the state, the patients arrive at the Maryland Institute for Emergency Medical Services (MIEMS) in Baltimore.

Here, a team of physicians and nurses wait at the helipad for the patients' arrival. Another team (one for each patient) is ready in the admitting area to continue resuscitation, treating and even operating immediately, if necessary. All necessary services — blood and blood components, radiology, laboratory services and specialists — surround the patients. The personnel and facilities are available to admit five severely injured patients at the same time, any time. There is no waiting.

After resuscitation, stabilization and initial surgery, patients are transferred to the Critical Care Recovery Unit. Here, aided by a complete monitoring system and a computer, multidisciplinary teams of physicians and nurses provide the critical care and constant observation these patients require. After an average stay of five to six days in this unit, patients are transferred to the center's ICU for further special care. Unlike most other hospitals where rehabilitation starts late in the course of treatment, here it is begun on admission and continues at all stages. After several days, patients may be transferred to a general hospital bed, a rehabilitation facility or home. In the near future, all central nervous system injuries admitted to the center will be gathered in one area to treat the difficult problems spinal cord and head injuries present.

Not all emergency victims need this kind of ultra-sophisticated care. Most can be successfully managed in community and city hospitals. But five percent of the victims, whose injuries are multiple and so severe that their lives are in danger, require the care of special trauma centers, a major component for the practice of crisis medicine in any state.

The shock trauma center began as a two-bed unit in 1961, later to become the Center for the Study of Trauma. It grew into the 54-bed MIEMS and is now the hub of a statewide EMS system. With the cooperation of the state's excellent volunteer and paid ambulance and rescue squads, the State Police's Med-Evac helicopter program, a comprehensive communications system, a network of specialty referral centers, and the cooperation of physicians, hospitals and communities all over the state, we save the lives of 80 percent of the patients admitted who would have otherwise died.

The statewide communications system (Syscom) located in the Institute coordinates the helicopter transport of patients to the specialty referral centers, which include: the Johns Hopkins Hospital Pediatric Emergency Trauma Center, the Baltimore City Hospital Kiwanis Burn Unit, the Washington Hospital Center Burn Unit, the State Intensive Care Neonatal Program at Baltimore City Hospitals, University of Maryland Hospital and Johns Hopkins Hospital; and a Hand Center at Union Memorial Hospital.

Besides caring for patients, MIEMS is actively involved in research — clinical, biochemical and pathological — and the education programs for traumatology, critical care medicine, critical care nursing and other specialties. It is the EMS resource center for the whole state and cooperates in EMT training.

The concept of shock-trauma centers is a timely idea. Prehospital care, training and equipment have made great strides in the past few years. We have the resources and personnel to provide the best care science can offer to the most critically injured, regardless of location, extent or severity of injury once they reach a hospital. But it cannot be just any hospital. The available definitive care resources must be pulled together into integrated systems of care centered around special trauma centers.

There is a need for satellite trauma units dedicated to patient care and direct services, as well as for university trauma centers which include emphasis on education and research in addition to patient care. Such centers would relieve the problems of outlying hospitals which cannot cope with severe injuries. Along with saving lives, bringing patients to trauma centers saves money.

In Maryland, we are fortunate to have a governor and legislature who support EMS and the trauma center. We hope that our experience and that of others who are developing trauma centers will prove that the most critical five percent can be saved, and that the potential savings to society in lives and dollars demand the development of trauma centers and EMS systems around the country. ✱

ABOUT THE AUTHOR: *Dr. R Adams Cowley, for many years a member of the National Research Council's Committee on Shock, is the director of the MIEMS. His early research in shock-trauma, as professor and chairman of Thoracic and Cardiovascular Surgery at the University of Maryland, led him to the conclusion that many scientists and specialists had to be involved in studying shock in humans in order to discover what occurs physiologically and metabolically in cells and organs, who would live, why, and how to enhance their chances. From those beginnings, Dr. Cowley has pioneered in the advancement of trauma care and the idea of integrated EMS systems.*

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for two aircraft with personnel, and the present program started. We announced to our colleagues around the state what we had to offer, but again—as at the University of Maryland Hospital initially—we ran into opposition from physicians who didn't want to give up their patients. It was somewhat a matter of "protecting turf," since we were relatively unknown; nonetheless, the patient flow grew. Once it became clear that we were interested in providing an evacuation service to see these patients through their critical phase, and then to return them to their own physicians as soon as possible, we began getting more referrals.

While we're on the subject of the choppers, is it true, as recently stated in a NEWS AMERICAN article, that "Every patient is carried by helicopter?"

No. We get some patients—about 20%—by ambulance, either because of closeness or the weather is bad for flying.

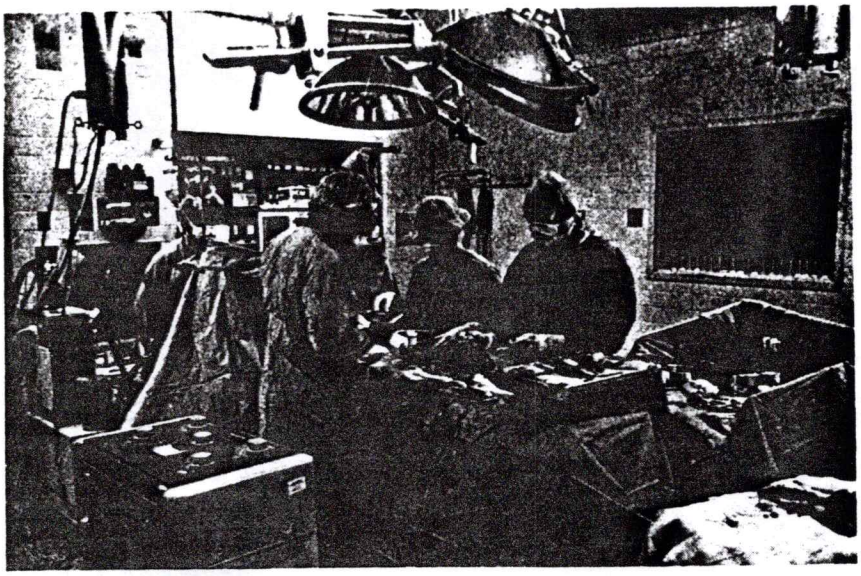
The Transfer Decision—and Liability

Let's pursue a little further this transfer aspect of MIEMS' work. Who makes the decision to transfer a patient to MIEMS from a community hospital? Who is responsible for the consequences due to the transfer? These questions are asked in view of the fact that some surgeons recently lost a similar case in court.

The physician at the local hospital makes the decision to transfer a patient. He calls us for help because he can't manage the patient there. Then, we're responsible for the patient in transit. We have Emergency Medical Technicians (EMTs) we've trained on the chopper to assess the person's problems and to stabilize him or her as much as possible in transit. They're not MDs because, to us, that's a waste of medical talent at that point.

What patient or family consent—if any—is necessary for the transfer? What permission has to be obtained—if any?

Many times we get patients whose names we don't even know! In the community hospital, if the patient is conscious—or if the family is available for consultation—consent is obtained from them.



ONCE THE PATIENT IS RESUSCITATED, he/she is moved next door to the operating rooms for surgery, as above.

What about malpractice suits? Has MIEMS been sued by the family of a patient who died after being brought here?

We've had only two: one was settled out of court, and the other is pending. Considering how much we do here, it's amazing. The one settled out of court was because of an equipment failure, I should add.

Of the patients you DO get here, what percentage of those cases are severely-ill, i.e., those immediately life-threatening, such as bleeding, cardiac, neurological and respiratory damage versus musculoskeletal trauma (such as a broken leg?)

We get approximately 1,200 patients a year; 4% of them don't belong here. We sometimes get patients we shouldn't.

All right. Your facility treats severe and sudden trauma. How do patients brought to MIEMS do as opposed to those taken to other facilities in terms of survival rate?

I can only answer that question in terms of my experience here. In terms of the types of patients brought to our emergency rooms, 50-60% of them wouldn't survive. Most direct admissions to the trauma center survive. When we began this Institute in 1969, the mortality rate was 67%; now it's between 18-20%. I should also add that every patient who arrives dead is counted in these statistics, too.

We believe we are successful because we have a system. The whole idea is to provide a system of medicine with no waiting—for surgeons, for ORs, for blood, for beds—or for stabilization, triage or transportation. We regard all patients as being in the process of dying, and we treat them accordingly. So patients who traditionally died at the scene or enroute or in the emergency room are surviving. We treat more ruptured aortas than anyone in the country, largely because the system gets them to us before they die and we have protocols for identifying their problem in time to treat it!

The protocols we use in the system play a huge role in our success. For example, a patient with multi-system injuries is treated under one anesthetic. There may be as many as three teams of surgeons working on him at once, treating all his problems. Then, when he goes to recovery, all he has to do is get well. As a result, we see very few pulmonary complications. The team approach is essential to our success. We treat first and then diagnose, because previously, the patient died while you were figuring out what was wrong with him. We perform a type of "cookbook" medicine—using procedures which have proven

FROM CLOSE ENCOUNTERS OF THE COWLEY KIND

From 1979-80 Annual Report

MISSION STATEMENT

Maryland Institute for Emergency Medical Services Systems

The goal of the Maryland EMS system is that any citizen or transient in the state has the right to the best available medical and surgical care, regardless of the severity of the injury or illness, or of where in the state the emergency occurs.

MIEMSS is the statewide referral center for the treatment of critically ill and injured adults, whose only chance for survival is the aggressive, state-of-the-art care that the institute provides.

In addition, MIEMSS operates as the control center for the Maryland EMS system. The EMS portion of the institute coordinates and improves treatment, transportation and communication facilities; trains emergency medical personnel; and conducts public education programs. The local needs in each of Maryland's EMS regions are determined by one or more regional coordinators and a volunteer EMS advisory council.

MIEMSS is also a place where all institutions and groups concerned with emergency health care delivery in Maryland and the surrounding states can work together to solve problems of patient care, teaching, research, EMS management, and systems engineering.

MIEMSS has marshalled the diverse disciplines of medicine, surgery, radiology, nursing, psychology, social work, physiology, pathology, biochemistry, biophysics, mathematics, computer science, transportation, communication, engineering and administration to achieve the following objectives:

1) Provide a comprehensive statewide EMS system that ensures continuity of care from notification of the emergency through resuscitation at the scene, treatment and rehabilitation.

2) Devise innovative systems for the care of critically ill and injured persons.

3) Conduct research aimed at developing new therapies for victims of severe illness or trauma.

4) Disseminate knowledge about the nature and treatment of severe illness and trauma.

5) Improve rehabilitation capabilities.

6) Promote public awareness of EMS programs.

7) Provide educational programs for the public, as well as for physicians, nurses and emergency medical technicians.

8) Provide undergraduate and graduate programs to prepare students as managers and teachers in the field of emergency health services, and to create opportunities for career advancement and personal development in this field.

9) Conduct clinical trails of therapy under controlled conditions.

10) Promote the development of EMS trauma centers in Maryland, and EMS institutes throughout the country.

11) Provide a comprehensive evaluation system for the statewide EMS system.

Dr. Cowley was buried with full military honors at Arlington National Cemetery.

What Cowley Was Saying. . .
(Excerpted from Publications & Interviews)

"Shock is a momentary pause in the act of death."

"There's a golden hour between life and death.... If you are critically ill or critically injured you have less than 60 minutes to survive. That doesn't mean you'll be dead in 60 minutes but if you're not in the right place at the right time, seen by the right people, your chances of dying are greatly enhanced. You might not die right then; it may be three days later or two weeks later – but something has happened in your body that is irreparable."

"Public opinion tends to regard accidents as unfortunate occurrences and their consequences to be accepted as inevitable. Besides--it always happens to the 'other guy.' We at Maryland cannot accept this premise and will continue to intensify our efforts to reduce this constant tragic loss."

"Unlike other diseases which require a medical breakthrough before significant savings in lives can be made, death and disability of the emergency victim can be reduced using existing medical knowledge and equipment utilizing a systems approach. Maryland is unique as a state in the development of an emergency medical services system because the Governor and Legislature have made a firm commitment to improve emergency care by providing resources for training, communications, equipment, and evaluation."

"Emergency admission by appointment has been operating since the helicopter program was established in 1969. There is no waiting. The state communications network forewarns the Institute of impending arrivals and describes the extent and severity of the victim's injuries, allowing preparation in advance for appropriate specialists and equipment."

"All patients [on arrival at the Shock Trauma Center] are assumed to be dying and much of 'the golden hour' for total stabilization has passed.... It may even become necessary to open the abdomen or thorax in the admitting area to stop hemorrhage before the usual sterile techniques have been introduced. Although unorthodox, this approach is directed at saving life rather than taking precious time to provide an aseptic field, the loss of time inviting death. The patient can always be treated for an infection--if he lives."

"We're knocking the socks off the death rate in this state."

"I want the very best for the citizens of Maryland. I want all of the critically injured to survive--and that's my goal."

"Trauma is a disease of young persons.... We are killing off the flower of our country. Our youth. It's no different than war. In war, we're killing off the flower of our country, young kids, the people who can make something. Why couldn't they go to a special place, why couldn't they have special care, why couldn't they have immediate treatment, why couldn't they have all the things that allow you to survive?"

"If I can get to you, and stop your bleeding and restore your blood pressure within an hour of your accident. . .then I can probably save your life."

Bidding Farewell, Paying Tribute to Dr. Cowley

More than 600 people--including EMS providers, physicians, nurses, government officials, families, and friends--paid a final tribute to R Adams Cowley, MD, at his funeral services November 4, at the Church of Jesus Christ of the Latter Day Saints in Towson where he was an elder of the church. That afternoon, following a funeral procession with police escort, Dr. Cowley was buried at Arlington National Cemetery with full military honors in a section reserved for national heroes and presidents.

Dr. Cowley was remembered, thanked, and praised by numerous speakers at the funeral, including Helen Delich Bentley (U.S. congresswoman), former governor Marvin Mandel, Alasdair Conn, MD (former MIEMSS trauma surgeon and medical director of field operations and current director of emergency services at Massachusetts General Hospital), Brent Petty, MD (of the Church of Jesus Christ of the Latter Day Saints), and Governor William Donald Schaefer.

Former governor Marvin Mandel emphasized that the "state, nation, and world are a better place because of him.... Some men have monuments and buildings built but he left living monuments." Governor Schaefer reflected that an "accident will happen today and because of Dr.Cowley a life will be saved today."

En route to Arlington National Cemetery Dr. Cowley was honored by fire and EMS personnel as one of their own. Following traditions normally reserved for a firefighter or ambulance personnel killed in the line of duty, fire apparatus and ambulance units from Baltimore and Prince George's counties were stationed on the shoulders of the Baltimore Beltway and I-95, while their crews stood at attention as the funeral procession passed. Earlier, soon after leaving the church, the mile-long line of cars in the procession passed under the tall arc of fire engine ladders. It was something Dr. Cowley would have appreciated as a fitting sendoff for his final journey.

◆ *Beverly Sopp*