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TEMS At Ten

Ten years ago, the Tidewater Emergency Medical Services (TEMS) Council was chartered by the State Corporation Commission as a private, non-stock, non-profit corporation. November 7, 1974 was the date of the TEMS charter as independent corporate entity, although planning for a regional EMS system was initiated several years earlier by concerned physicians, hospital administrators, nurses, civil defense planners and prehospital providers.

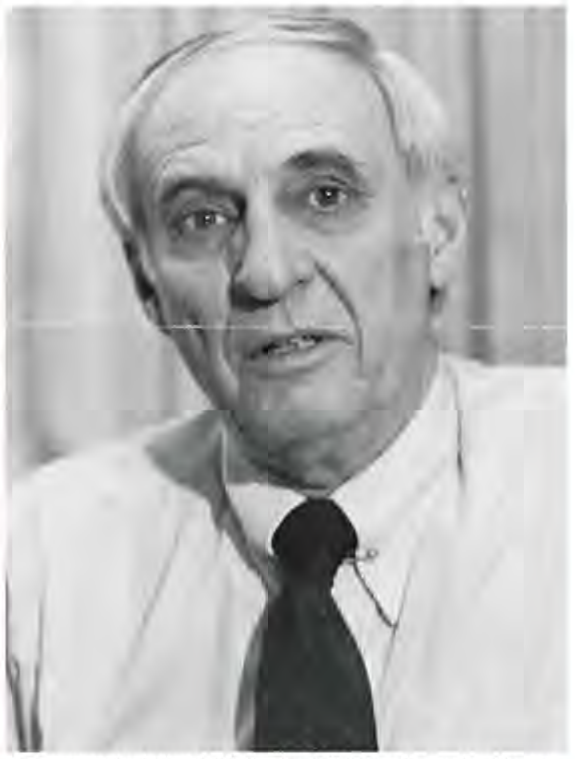
Experiences in managing casualties in Korea and Vietnam demonstrated that effective medical treatment in the field followed by prompt on-going care in a hospital emergency room and appropriate follow-on treatment (ICU, CCU, OR) could significantly reduce morbidity and mortality of critically ill or injured patients. In the early seventies federal and local interest focused on the development of a systematic delivery of emergency medical services for the civilian population.

In 1970, Virginia Beach physicians and rescue squad personnel began planning a program to train prehospital EMS personnel to treat heart attack victims at the scene. With funding from the Virginia Regional Medical Program and local contributors, the Emergency Coronary Care Program was initiated in 1972.

In July, 1972, the Tidewater Regional Health Planning Council (TRHPC) hosted a meeting of medical, civil defense, public safety and health officials interested in EMS planning and development. This group of some twenty persons appointed a steering committee to formulate policies and guidelines composed of William S. Burton, MD (Eastern Shore Internist); Edward M. Holmes, III (Assistant Administrator, Norfolk General Hospital); Forrest M. McCoig, MD (ED Physician, Hampton); Robert J. Robertson, Jr., MD (Cardiologist, Va. Beach); Robert L. Smith (Assistant Director, Civil Defense, Norfolk); and James M. Wagenbach (Fire Chief, Franklin).

Shortly thereafter, the Steering Committee, chaired by Dr. Robertson, was expanded to include Robert D. Brickman, MD (Cardiovascular Surgeon, Norfolk) and Frank M. Yeiser, Jr., (founder and Superintendent of Norfolk Paramedical Rescue Services) and became a standing committee of TRHPC. D.J. Joseph Moore, Executive Director TRHPC, provided staffing, administrative and logistic services initially through a Virginia RMP grant and when those funds were exhausted, from federal funding provided to the Comprehensive Health Planning Agency.

The Emergency Medical Services System (EMSS) Act of 1973 (P.L. 93-154) offered a new opportunity to obtain needed funding. To become an eligible applicant, the TEMS Council was chartered as a separate corporate entity in November 1974 with an initial Board of Directors which included EMS providers and consumers representing the 8 political jurisdictions in state Planning District 20 and the two counties on the Eastern Shore (Planning District 22). Robert J. Robertson, Jr., MD, was elected President; Robert D. Brickman, MD, President-Elect; Donald C. Pryor, MD, Vice President; and Floyd E. Waterfield, Jr., Treasurer. In addition to the officers, the following persons became charter directors: Robert G. Bagley; Harry W. Bleh; E. Franklin Dutton, Jr.; Henry N. Hassel; Edward M. Holmes, III; Ralph L. Horn; Robert W. Hundley; Harold H. Koenig; Philip G. Leavy, Jr., MD; Bartholomew D. Myles; Sarah O. Raby; Alvin C. Rogers, DVM; Norman T. Scott, MD; Robert L. Smith; James M. Wagenbach; Bill J. Wright; and Frank M. Yeiser, Jr.



Ten years at the helm of TEMS—Kent J. Weber, Executive Director.

In early 1975, the Council obtained $30,000 of federal supplemental funding through TRHPC. This money was matched by individual hospitals and utilized to purchase VHF radio communication equipment which linked 14 Tidewater hospitals on a frequency of 155.400 MHz. The Tidewater Hospital Council assumed net control and the system became operational on April 1, 1975. This marked the initial success of the TEMS Council in developing a regional EMS communication system.

Kent Weber and Robertson C. "Flash" Dailey, who were employed by TRHPC, were involved in the "spin-off" of TEMS as an independent entity. Subsequently, both were employed by the new council, Kent as Project Director and Flash as Associate Director.

In April 1975, an application was submitted to the Department of Health, Education and Welfare (DHEW) for the initial establishment of a coordinated EMS system in eastern Virginia. In June of 1975, the TEMS Council was notified of its first one-year award of Federal funds in the amount of $323,782. The bulk of the funds were programmed to complete the EMS regional communications system with lesser amounts for emergency vehicles and training equipment. From 1975 through 1980, the TEMS Council applied for and received annual awards from DHEW/DDHS (Department of Health and Human Services) for the establishment and improvement of a regional EMS delivery system.

These funds were utilized for the purchase and installation of four channel VHF radios with EMS assessory groups for some 78 ambulances and biomedical telemetry mobile and base station radios for advanced life support systems in the five-city area. Funds were also expended to purchase pager units for rescue squads and assist in the purchase of ambulances by urban and rural rescue organizations. In conjunction with the counties of Accomack and

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EMS Works Together To Solve A Problem

In designing the interior of the B0105 Twin Engine Aircraft perhaps the biggest issue we faced was how to mount the cardiac monitor. The rest of our equipment including the defibrillator was neatly recessed into the back wall. The Life Pak 5, because of the location of the screen on the monitor, presented a special problem. It would have to be mounted horizontally in order for the crew members to see the rhythm. A horizontal mounting was not optimum because it sticks out too far interferring with head room in the cabin. In addition, we considered it a safety hazard due to an inadequate means of securing the monitor positioned in this way to the back wall.

Our assistant Medical Director, Dr. Frank Yeiser, suggested a flush or vertical mounting so the monitor's screen pointed up toward the ceiling of the aircraft. He suggested mounting a prism on top of the screen so the rhythm could be evaluated. A simple mirror would not work because the rhythm would be inverted.

Bruce Edwards, Director of EMS in Virginia Beach, began working with his brother, Brandon Edwards of Edwards Optical to solve our problem. They designed a Parascopic Rectification System (PRS), which allowed us to safely mount our cardiac monitor and still evaluate the patient's rhythm in flight. Design included many exact measurements and precise calculations to give us a picture large enough and clear enough to be seen in the space available. Since installing the PRS we have worked a number of arrests including one patient who was intubated and either cardioverted or defibrillated a total of ten times in flight.

Does it work? YES!

But the best part of the entire experience is the way two different EMS services worked together to solve a problem and improve paitient care.

To Bruce and Brandon Edwards—Thanks from the Crew of Nightingale.

TEMS At Ten (cont. from page 1)

Northampton, a new antenna tower was purchased and erected which greatly enhanced EMS (as well as fire and law enforcement) communications on the Eastern Shore. Medical Anti-Shock Trousers (MAST) garments were also procured for each ambulance in the region served.

The main thrust of the organizational efforts of the TEMS Council has been to coordinate and integrate multiple and varied system elements to provide a continuum of emergent patient care. These elements not only include the spectrum of manpower to operate the system but also the vehicles, facilities and communications equipment necessary to join the components in a cohesive, organized fashion. The underlying principle of these organizational efforts has been "volunteerism". Basically, the system has been developed to meet the needs and desires of the people who reside within the Tidewater region.

In the early days priorities were established as follows: 1.) to develop an effective management organization to coordinate the efforts and activities of the Council; 2.) to obtain "state-of-the-art" communications equipment for all elements of the system; 3.) to provide the mechanism to facilitate the transport of patients to an appropriate medical facility with minimum delay; and 4.) to upgrade training and education of all persons involved in the delivery of EMS.

Recognized assets that spurred organizational and continuing efforts are Tidewater's significant number of acute care hospitals available to provide optimum management and treatment of cardiac, burn and trauma emergents, high risk neonates, and poison victims. Excellent psychiatric and detoxification treatment facilities are also available.

Under the leadership of Dr. Brickman, who served as Council president and medical director for six years, the Council became nationally recognized as a model EMS program. The second and current Council president, Joseph T. Mullen, MD, has continued to build and expand on the firm foundations established.

On the Eastern Shore, twelve rescue squads have developed a strong Sub-Council which has greatly enhanced prehospital care in this predominately rural area. Nightingale—a hospital based helicopter ambulance—was initiated some two years ago, the first such service in the Commonwealth. This highly visible ALS transport unit complements the regional ground and water elements. The simultaneous introduction of the universal emergency number 9-1-1 by the three largest cities simplified access to the system for the majority of the region's population.

However, resources in themselves-facilities, vehicles, equipment, personnel, material, etc.—do not constitute an EMS system. The effective integration, coordination and utilization of these components is necessary to provide the desired continuum of patient care and thereby reduce mobidity and mortality. Thus, some of the most significant accomplishments of the Council have been the development, implementation and acceptance of regional standards and procedures such as regional medical protocols, patient record forms, a drug box exchange system and a system of physician directed medical control. Regional training of cardiac technicians and paramedics has reinforced these uniform standards of EMS care.

Accomplishments are attributed to the dedication and concern of scores of individuals representing prehospital providers, emergency departments, critical care facilities, medical societies, hospitals, public safety and emergency services agencies, consumers, municipal jurisdictions and federal and state agencies who have participated in this unique regional endeavor. Thanks to their sustained commitment and concerted efforts, a modern effective EMS delivery system exists today in Tidewater.

Although much has been accomplished, much remains to be done in an ever-changing environment. As we entered the new decade, continued efforts by personnel of all components will be required to sustain a first-rate system providing optimum emergency medical care for all residents of the Tidewater region.

Robert D. Brickman, MD, Council President 1975-1981, led the council to become a nationally recognized model EMS program.

RESPONSE

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Comments and editorial contributions can be sent to: TEMS, 855 W. Brambleton Avenue, Norfolk, Virginia 23510.

Chin Lift More Effective

A recent article in the American Heart Association's July, 1984, **National Faculty Newsletter** has brought forth some interesting statistics on the effectiveness of opening the airway with different techniques.

Dr. Charles W. Guildner found in a study that the chin lift was much more effective than using the neck lift. On 120 patients, he found the following results:

EFFECTIVENESS	NECK LIFT (%)	CHIN LIFT (%)	JAW THRUST (%)
Total obstruction Unable to ventilate	6	0	1
Partial obstruction Inadequate ventilation	7	2	2
Partial obstruction Adequate but difficult ventilation	48	7	19
Good airway Easy ventilation	39	91	78

Dr. Guildner reminds emergency cardiac care providers that all too often we practice on manikins that are making no respiratory effort. In real situations, most patients are making some respiratory effort and the chin lift is the most effective technique to ensure an open airway.

The article describes in detail the proper procedure for opening the airway as well as other hints on airway management.

For more information or reprints of the article, contact the American Heart Association, 7320 Greenville Avenue, Dallas, Texas 75231.

A Review of Anti-Shock Trousers

By James M. Chandler, REMT-P

Medical Anti-Shock Trousers, pneumatic counter pressure device, pneumatic anti-shock garment. These are names given to the relatively new but effective civilian prehospital device for combating hypovolemic shock, tamponading abdominal and lower extremity hemorrhage and splinting the lower body. Now taught in Virginia in the basic EMT-A course, the operational medical directors in the Tidewater EMS region have approved the application and inflation of MAST as a standing order for all EMT levels when indicated.

Briefly, a review of the indications for MAST are:

1. Blood pressure less than 90 mmHg with other clinical signs and symptoms of shock
2. Abdominal injury with signs of shock
3. Pelvic fractures with signs of shock
4. Femur fracture with signs of shock
5. Multiple trauma with signs of shock
6. Pregnancy with signs of shock (leg sections only)
7. Other cases as ordered by medical control

Contraindications are divided into absolute (never inflate MAST) and relative (consult medical control). The only current absolute contraindication to MAST is the patient in pulmonary edema. Signs of this include fluid in the lungs, rales and distended neck veins (in a seated or semiseated position). Relative contraindications include eviserations and lower body impaled objects. Earlier described contraindications such as head and chest injury do not apply if signs of systemic shock are present. When in doubt, contact medical control. If the patient is in obvious shock (uncompensated), application and inflation of the MAST should be swift and deliberate. In lesser cases, application without inflation will prepare you for sudden changes. Application techniques vary depending on the patient's position and condition. However, when moving the patient onto MAST, spinal injuries must be considered and protected. Lifting and/or logrolling must be minimized.

Inflation generally includes all three compartments (2 leg and 1 abdomen) at one time. The MAST should be inflated until the patient's BP reaches 100 mmHg systolic, the Velcro fastners "crackle" and/or the pop-off valves release. After inflation, all valves should be closed and taped for security. Slight pressure adjustments may be made in the prehospital phase especially if the temperature difference between the environment and ambulance cause a MAST garment pressure change. Leaving the hoses attached to the MAST will make routine and emergency pressure adjustments easier and timely. The patient's vital signs should be checked frequently, preferably every five minutes.

While enroute to the appropriate hospital, advanced life support personnel, if available, should initiate large bore IV's with Lactated Ringers solution.

MAST deflation is performed in hospital as the patient is stabilized and definitive care is provided. Only those persons knowledgable of the dangerous consequences of improper MAST deflation should direct this procedure.

Training and practice are necessary for prehospital personnel in order to achieve proficiency in the use of MAST. The responsibility for obtaining this proficiency rests with the prehospital provider. Contact your local EMS training officer or the TEMS Council office for assistance.

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