

Maryland

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NEWSLETTER

Vol. 19, No. 3

For All Emergency Medical Care Providers

January 1993

New Hyperbaric Chamber at MIEMSS

The Center for Hyperbaric Medicine opened at the MIEMSS Shock Trauma Center in June. Housed in a new 10,000-square-foot building and equipped with a modern 52-foot hyperbaric chamber, the center is one of the largest facilities of its kind in the country.

The MIEMSS Department of Hyperbaric Medicine, founded in 1967, was originally located in the Bressler building on the campus of the University of Maryland at Baltimore. In 1972, the department moved to the basement of the former Shock Trauma Center, which has been razed to make way for the patient care tower now being constructed by the University of Maryland Medical Center. Instead of moving and modernizing the original equipment, the more cost-efficient decision was made to construct new

environs and install a new chamber. The new hyperbaric chamber was transported from Florida on a massive 38-wheel truck, a journey requiring 6 days.

In the hyperbaric chamber, patients breathe 100 percent oxygen while they are in a pressurized atmosphere. The pressures are controlled between 17 and 165 feet below sea level, the depth being adjusted according to patients' disease conditions and needs.

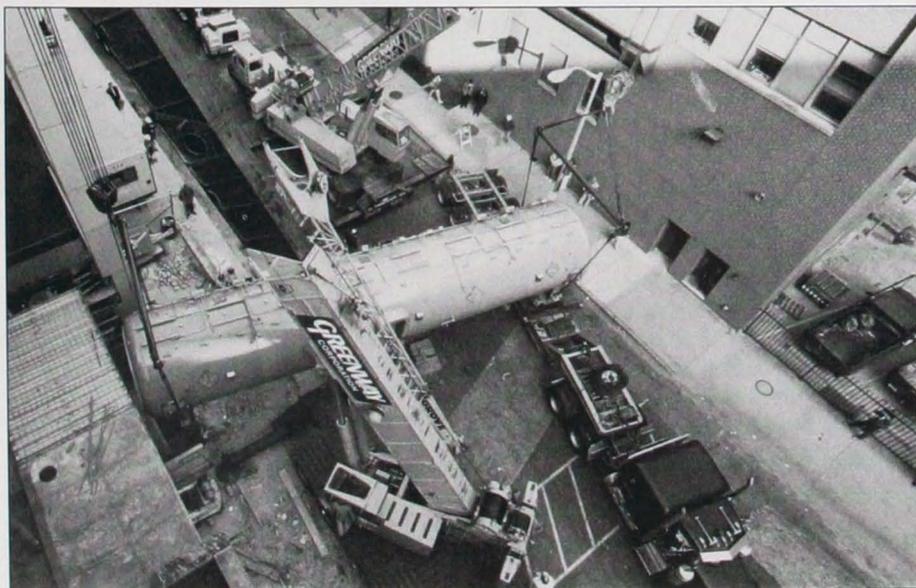
Hyperbaric oxygen is the treatment of choice for various acute conditions, such as carbon monoxide poisoning, smoke inhalation, and decompression sickness. It also has application in acute trauma conditions such as reimplantation of amputated ears and noses, crush and degloving injuries, and acute compartment

syndrome. It has excellent adjunctive application in the treatment of gas gangrene following trauma or soft tissue infections in compromised hosts such as diabetic, obese, malnourished, or immunosuppressed patients or those with peripheral vascular disease. For a number of chronic conditions, hyperbaric oxygen is an adjunct to other therapies. Examples of those conditions are diabetic ulcers, refractory osteomyelitis, osteoradionecrosis or soft tissue radionecrosis following radiation tissue damage, and chronic nonhealing wounds. In all of these uses, the therapy is designed to boost the supply of oxygen to ischemic tissue by increasing the volume of oxygen dissolved in the fluid state (plasma) of the blood.

Approximately 400 patients receive hyperbaric oxygen therapy at MIEMSS each year. In the new chamber, 23 patients can "dive" simultaneously (compared with 12 in the former chamber). Three locks within the chamber provide flexibility and efficiency in treatment: one is small enough for 3 patients, a second can accommodate 8, and the largest, 12. Three nurses would accompany 23 patients during a treatment.

In addition to the chamber, the Center for Hyperbaric Medicine has a waiting and changing area for the patients; rooms for pretreatment assessment and wound care; professional offices; a conference room; and rooms for technical, safety, and monitoring equipment. Medical professionals (residents, fellows, attendings) come to the MIEMSS facility for training in hyperbaric oxygen

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The new hyperbaric chamber is moved into the MIEMSS Shock Trauma Center.

EMS Means Emergency Medical Services

There is much talk these days about the workings of our EMS system. Lest anyone reading this newsletter be confused, our EMS system is working—and working well. Is it unique? You bet it is. Maryland's EMS system derives its uniqueness from the link between EMS Field Operations and the R Adams Cowley Shock Trauma Center—a clinical facility dedicated to teaching, research, and, most importantly, the care of our most critically ill and injured. By drawing on the clinical resources of Shock Trauma and the educational resources of our state university, Maryland EMS has been described as a model for others to emulate. However, this system and all who work within it are currently under close scrutiny to determine whether some other "model" might work better. While we should always seek opportunities to improve, with people visiting Maryland from all over the world to learn from what we do, doesn't it seem somewhat nonsensical to radically alter such an acclaimed operational design?

Let us look, then, at one problem described by our critics. It has been stated that since trauma makes up a minority of emergency calls in the state, the emphasis on trauma has somehow interfered with the evolution of quality care for the majority of patients requiring emergency transports, those suffering non-traumatic ("medical") emergencies. Is this true? The facts do not support such a contention. In calendar year 1991, 97,000 injured patients (that is, those not suffering medical emergencies) were transported by Maryland EMS, not a small number by any yardstick, but still fewer than the 193,000 non-injured patients requiring transport.

But do the numbers say it all? As EMS systems evolved over the past 25 years, it is important to remember that it was surgeons who provided the original leadership in organizing and promoting improved emergency care for the ill and injured. It was largely surgeons who authored the famous "white paper" of the National Academy of Sciences, "Accidental Death and Disability: The Neglected Disease of Modern Society." The founders of the American College of Emergency

Physicians were mostly surgeons. The first several presidents of the University Association for EMS (now the Society for Academic Emergency Medicine) were surgeons. When the U.S. Government passed the EMSS Act of 1973, it was a surgeon, Dr. David Boyd, to whom they turned for leadership in EMS. Closer to home, it was Dr. R Adams Cowley who defined the CRT – **cardiac** rescue technician (the most advanced field provider at the time), because he knew the needs of all EMS patients, not just the injured. The ability to start intravenous infusions in the field and to give drugs was specifically directed toward the cardiac patient, not the trauma patient. In his presidential address to the American Association for the Surgery of Trauma in 1982, Dr. Robert Freeark perhaps expressed it best: "The concept of trauma as the organizing basis for all emergency care seems well established and likely to continue ... and offers the greatest chance for matching facilities with patients' needs." Maryland has been a leader in doing just that—and

also doing it rapidly and safely—whether the patient has a heart attack or is run over by a car.

But we live in the 1990s. Old ways must give way to the new; change is at hand and needed. The appointment of an emergency physician, Dr. Richard Alcorta, to lead our EMS effort is one good example. As we welcome emergency physician leadership and all it means for a more inclusive system; as we thank all the CRTs for years of dedicated service and urge them to continue their training to full paramedic status; as we empower the paramedics to use **all** lifesaving skills for which they so rigorously train; and, even as political forces gather to tell us how our system can be made better, let us remember and support what makes the Maryland system work so well—the firm bond between the clinician and the EMT. **MIEMSS is Shock Trauma and EMS Field Operations.** I haven't heard anything yet that sounds any better. Have you?

◆ *Kimball I. Maull, MD*
Director, MIEMSS

Funding Maryland's EMS System

An optimal Emergency Medical Services System demands excellence, obligates and involves the entire community, and necessitates adequate resources.

If Maryland wishes to regain its leadership role in EMS, then there must be very high standards for prehospital and hospital care, and a strong financial commitment to meet the needs of the entire EMS community.

We are grateful for the efforts of the Emergency Services community and the citizens of Maryland for petitioning the legislature to address the immediate fiscal needs of Maryland's Emergency Services. As you know, the culmination of these recent efforts resulted in the creation of a Transportation Trust Fund. This Transportation Trust Fund, better known as the "\$8 Bill," identifies essential resources for fire, rescue, and EMS in Maryland.

Contrary to popular belief, the "\$8 Bill" commits funds to several Emergency Services agencies and institutes, the 23 counties, and Baltimore City. EMS Field Operations

actually receives only about 25 percent of the funds generated by this levy. As of this date, the revenues collected from the "\$8 Bill" are expected to be allocated as follows:

Maryland State Police—Aviation	\$10,469,555
EMS Field Operations	\$ 7,000,000
508 Grants to local jurisdictions	\$ 4,950,000
Maryland Fire and Rescue Institute	\$ 3,036,719
Shock Trauma Center	\$ 2,900,000
	<hr/>
	\$28,356,274

Although EMS Field Operations (EMSFO) is funded at \$7 million, the operating budgets for several EMSFO departments reflect short-falls of nearly 9 percent from last fiscal year. This means that we cannot currently meet all of the requests for training and support services that we had planned to provide this fiscal year. Yet, we recognize an urgent need to greatly expand our training programs. How we achieve our educational mission in the face of limited resources is our greatest challenge for the future.

Optional & Special Study Procedures

The "pilot project" program, introduced into Maryland EMS in 1985, has been completely restructured. The term "pilot project" is no longer used. The introduction of new procedures relating to medication, equipment, or skills currently not included in Maryland's current First Responder, EMT-A, CRT, or EMT-P curricula is now covered by "Optional Procedures" and "Special Study Procedures." Both can be adopted only with the approval of the Board of Physician Quality Assurance (BPQA).

Optional Procedures are ALS or BLS procedures that are generally accepted as effective and they may or may not be currently in the National Standard EMT Curricula. They will be implemented at the discretion of local EMS jurisdictions after considering the financial and personnel resources available to them.

Before being implemented, Optional Procedures must first be

approved by: (1) the five regional EMS medical directors; (2) the EMS Committee of the BPQA; and (3) the entire BPQA.

Seven procedures (six of which were listed as pilot projects in the July 1991 revision of the *Maryland Medical Protocols for CRTs and EMT-Ps*) have been submitted to the five regional EMS medical directors for consideration as optional procedures. Those techniques and medications are the use of automated external defibrillators by BLS providers, glucagon, intraosseous infusion, nasotracheal intubation, nifedipine, thoracic decompression, and transcutaneous cardiac pacing. Automated external defibrillation is the only procedure that could be performed by BLS as well as ALS providers.

Of the seven skills being considered for approval as optional procedures, glucagon, nifedipine, thoracic decompression, and intraosseous infusion have received a favorable recommendation by the regional medical directors and currently are being considered by the EMS

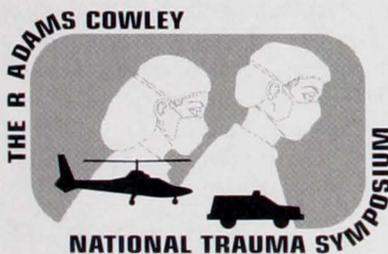
Committee of the BPQA. They are expected to be submitted to the entire BPQA for final approval in January. Revisions for the implementation of transcutaneous cardiac pacing and automated external defibrillation were requested by the regional medical directors, and those changes were submitted to them by MIEMSS on December 2.

"Special Study Procedures" are techniques that are not in the National Standard EMT Curriculum and are not generally accepted (that is, have not been proved in controlled trials or debated in the medical literature) but are being tested in Maryland as research projects. For example, an esophageal detection device to ensure correct placement of the endotracheal tube is being evaluated on the Eastern Shore. Special Study Procedures are on the "cutting edge" and will expand our knowledge of emergency medicine and services, as well as the quality of patient care.

In the future, each prehospital care certification level will have minimum, optional, and special study procedures.

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Evolution of Pilot Programs To Optional Procedures

Advanced life support began in Maryland in 1974, when training in invasive patient care procedures was first offered to EMS providers. The original CRTs met many of the knowledge and skills objectives in Modules 1 - 6 and 15 of the National Standard EMT-P Curriculum. As experience was gained, the CRT program was enhanced to encompass all of the knowledge objectives from the EMT-P modules. Over time, many medications and procedures were added to the armamentarium available to the CRT.

In 1984, the certification level of EMT-P was introduced in Maryland. Although the EMT-P program included only a few additional skills compared to the CRT program, the knowledge gained by EMT-P students allowed them to better understand the disease process, which improved their assessment skills and enabled them to anticipate complications.

To allow all prehospital care providers to use new procedures, the

concept of *pilot* programs was introduced in 1985. The intent of those programs was to ensure that any new procedures would be efficacious and feasible in the prehospital phase of care. Many of the procedures that had been accepted by paramedic programs around the country proved to be appropriate for use by EMT-Ps in Maryland.

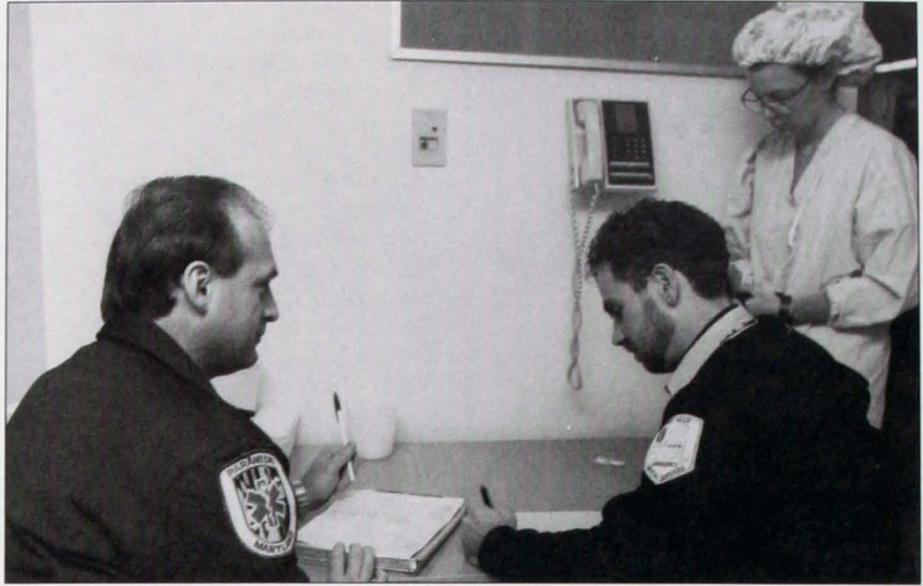
Maryland EMS is currently updating its training programs to meet the National Standard EMT-P Curricula. This will expand the skills of many providers. In addition, changing former "pilot" interventions into optional procedures will allow providers to further expand their knowledge and skills, after they have completed the minimum training in their certification level. Standardized training modules in these new procedures will be offered statewide, but each individual jurisdiction in the state will now have the option of implementing the procedures.

Ambulance Runsheets Revised

New runsheets for the Maryland Ambulance Information System (MAIS) were issued recently by MIEMSS. As of July 1992, the revised forms are to be used to document all EMS responses.

The runsheets have been redesigned. The primary goal of the revision process was to make the documents easier to use—for prehospital personnel and for the people who extract the MAIS data. The process was coordinated by MIEMSS staff members of Operations Research and Systems Analysis (ORSA). Through careful consensus-building, suggestions for changes were gathered and the most practical were implemented. The form's useability was improved: MAIS variables were expanded, spaces for marking responses were clarified, and informational flow was enhanced.

The changes in questions and runsheet format are described in detail in the MAIS User's Manual. A copy of the manual should be available in every fire house/EMS station. Supplementary to the User's Manual is a 16-minute videotape that was produced by MIEMSS Information and Media Services and distributed to the regional administrators in mid-June. Any prehospital care provider who has questions about the new runsheets is encouraged to review the manual and videotape for assistance. Matters that are



Prehospital care providers complete runsheet after transporting a patient to the Shock Trauma Center.

still unclear should be discussed with your EMS supervisor, who may want to relay them to your regional administrator or ORSA for clarification and possible inclusion in future revisions.

The revised runsheet is actually a five-part form. The top sheet is for scanning by ORSA for the maintenance of a standardized statewide prehospital care database. The second sheet should be kept by the respective fire/EMS company as the

official copy for all future references. The third and fourth copies are for the appropriate jurisdictional authority and the receiving hospital. The fifth part, new with this revision, is the Hospital Tear-Off Sheet. This portion is filled out by the emergency department or admitting area staff at the receiving facility and thus becomes a record of patient assessment and disposition. That portion of the MAIS runsheet eventually comes back to MIEMSS so that the information it contains can be entered into a computer. This process will allow linkage of EMS response data with patient outcome. Confidentiality is of great concern and will be protected at both the patient and institutional level. MIEMSS and hospital representatives have been discussing a mechanism for the transmittal of the tear-off sheets to ORSA. Business reply envelopes are being tested in Region III.

During their decade of use in Maryland, runsheets have proved their value as the backbone of the MAIS. The data are compiled as monthly, quarterly, and annual reports and distributed to EMS jurisdictions. The monthly reports contain useful information for each company, for example, the number of runs, call priorities, and average response times. Quarterly and annual reports are more detailed, listing the number of runs to each hospital, injuries and illnesses treated, and time of day/day of week trends. With the addition of the Hospital Tear-Off Sheet, monthly reports will also be available to emergency departments.

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Seminar on Poison Gas Exposure Offered By National Center for Disease Control

The National Center for Disease Control (CDC) will present a four-hour seminar on the treatment and decontamination of victims of poison gas exposure on April 29 from 12:30 to 5:00 pm at the College Park Convention Center.

The program is especially timely since the Army is considering the destruction of mustard gas and other chemical weapons stored at Aberdeen Proving Grounds and other sites around the country. Many of the concerns surrounding the destruction of chemical weapons can be answered by attending this program.

The CDC will cover the decontamination and treatment of patients exposed to war gases and to organophosphate insecticides, which are chemically similar. Improperly treating patients exposed to these substances can sometimes cause contamination of ambulances and

emergency departments.

Hank Siegelson, MD, the chairman of the American College of Emergency Physicians (ACEP) section on disaster medicine, will be the primary presenter at the seminar. Representatives from the Army and civilian sectors who have experience dealing with poison gas will also be available to answer questions.

Primary care and emergency physicians as well as emergency nurses, EMTs, and paramedics are encouraged to attend the seminar because hazardous materials and poisonous chemicals are being transported daily on our highways. Hospital administrators also are encouraged to attend to find out how their hospitals can care for patients exposed to poison gases without causing their emergency departments to be closed down for several days during decontamination procedures.

ET Program Now Part of CRT Curriculum

Beginning January 1, 1993, endotracheal (ET) intubation will become part of the core curriculum for cardiac rescue technicians (CRTs). The incorporation of the ET training program into the CRT program was approved by the State Board of Physician Quality Assurance in November. Although incorporation of the ET module is not mandatory until January 1, 1993, CRT programs had the option of including the ET program in CRT classes one



Mark your calendars! EMS Care '93 returns to the Greenbelt Marriott Hotel on April 23 to 25, 1993. One highlight of this year's program will be airway enhancement. Both ALS and BLS providers will hear presentations on airway management, and all EMTs will have the opportunity to complete the new Airway Adjuncts Enhancement Module, a skills workshop that will be repeated throughout the conference. Participants will also be able to pursue a track on Emergency Medical Services for Children coordinated by Associate EMS Medical Director for Children J. Alex Haller, MD, and Nurse Coordinator Cynthia Wright, RN, MS. Topics will include medical emergencies, head injuries and other types of trauma, as well as poisonings.

Preconference programs on Friday, April 23, include Extrication for EMS, Street Smart (a daylong workshop on provider protection), and an Instructor Workshop on the Airway Adjuncts Enhancement Module. A two-part seminar on critical issues in EMS, such as the Americans with Disabilities Act and Budgeting in Hard Times, will be presented in the afternoon. The Spring Educational Program for the Critical Incident Stress Debriefing Team will also be part of EMS Care '93.

Complete program details and registration information will be published in the February issue of the *Maryland EMS Newsletter*. For further information, contact the Region V Office at 301-474-1485.

month earlier in December.

The ET program in the CRT program that was approved by the State Board of Physician Quality Assurance differs from the one included in the original EMT-P training program: Five intubations of live patients are no longer required; only two intubations are now required and they may be any combination of live or recently deceased patients or cadavers (see box for requirements for ET certification). These changes have also been incorporated into the EMT-P training program so that the ET requirements for CRT and EMT-P certifications are the same.

The ET training program is also available for classes recertifying current CRTs.

Any certified CRT successfully completing the ET module will be allowed to perform endotracheal intubations in the prehospital setting.

The ET training program is the

first step in the projected CRT-to-EMT-P transition and the phasing out of the CRT as a state standard. It is also the first step in phasing out the use of the esophageal obturator airway (EOA) by CRTs and EMT-Ps. By July 1, 1995, the EOA will be removed from all Maryland ambulances.

EMS Seminar in Salisbury

An EMS educational seminar offering 12 hours of continuing education credits will be offered January 21-24 at the Peninsula Regional Medical Center in Salisbury. The seminar is cosponsored by the Lower Eastern Shore EMS Advisory Council and the MIEMSS Region IV Office. For information, contact Madeline Leyda, 410-632-2504.

Requirements Regarding Endotracheal Intubation In the CRT & EMT-P Programs in Maryland

Requirements Phase I:

1. Successful completion of DOT-P Guidelines for didactic teaching of intubation module to the following objectives:

- (a.) Review of anatomy and physiology of the respiratory system and mechanics of respiration.
- (b.) Patient assessment and signs and symptoms of respiratory failure.
- (c.) Pathophysiology and management of respiratory problems.
- (d.) Review of airway adjuncts.
- (e.) Techniques and methods of intubation with and without other approved airways in place.

2. A Grade of at least 75 percent based on DOT guidelines. Students must be participants in a recognized EMT-P training program and/or employed by or affiliated with an approved ALS organization.

3. Under the supervision of a "Board"-approved instructor experienced in intubation, students must

have intubation manikin practice with five successful manikin intubations each in 25 seconds or less (40 seconds with other approved airway in place) to be performed on both table and floor levels.

Requirements Phase II:

(Candidates must complete Phase I prior to starting Phase II.)

Candidates must perform two successful intubations using any combination of the following:

1. Cadavers at the Maryland Board of Anatomy or another recognized anatomy laboratory,

-OR-

2. Anesthetized patients in the operating room under the supervision of a CRNA or Anesthesiologist.

-OR-

3. Cadaver (recently deceased) under the supervision of a physician who is recognized as skilled in intubation (ACLS trained or equivalent).

CRT Training Program Being Reviewed

The Maryland Cardiac Rescue Technician (CRT) program is currently undergoing close scrutiny to ensure that it remains valid as a standard of care.

According to Acting State EMS Director Richard L. Alcorta, MD, the immediate goal is to bring the CRT training objectives (which are currently based upon Modules 1-6 and 15 of the now outdated version of the Department of Transportation's EMT-Paramedic National Standard Curriculum) in line with the training objectives from the National Standard Curriculum Guidelines for EMT-Paramedic training. "Another goal is to facilitate the process for currently certified CRTs or for those in the process of completing CRT programs to continue to advance their level of emergency care training should they desire to do so."

During the past months, staff from MIEMSS Prehospital Training and Certification Office have been reviewing the CRT training program and scope of practice to identify similarities and differences between it and the National Standard Curriculum Guidelines for EMT-Paramedic training. Their findings were included in a document that was sent in November to approximately 100 members of the Maryland EMS community, involved in various aspects of ALS training. The "reviewers" were asked to address three items:

1. Do the areas described in the document adequately describe the training and scope of practice for CRTs?

2. Does their jurisdiction or training program provide additional

Runsheets Revised

(Continued from page 4)

Approximately 275,000 EMS transports occur each year in Maryland. This represents a tremendous amount of patient information related to system demand and response as well as patient outcome. The resulting database provides a broad, detailed picture of Maryland's EMS system—its effectiveness, its scope, and its resource utilization.

Implementation of the new MAIS runsheet on a statewide basis remains a future goal but an achievable one, if we continue to work together to improve our system.

material to CRT students not reflected in the document?

3. Do they think that other training programs that the CRT or CRT student may have completed (for example, Basic Trauma Life Support [BTLS] or Pediatric Advanced Life Support [PALS]) may have reciprocal value toward EMT-P certification?

Their comments will then be incorporated into a revised, consensus document that will again be sent to the Maryland EMS community for review.

Physio-Control Lifepak Defibrillators: Users Beware

Physio-Control Corporation, which markets models of Lifepak external defibrillators, has been charged with violating regulations set by the Food and Drug Administration (FDA). The FDA has issued a notice to inform emergency care providers of the agency's concerns about the defibrillators and to recommend precautions to be taken by those who use them.

In July 1992, Physio-Control Corporation of Redmond, Washington, voluntarily signed an agreement with the FDA, stating that the company would stop making and distributing defibrillators until problems involving manufacturing practices and other issues are resolved. The corporation has marketed various models of Lifepak external defibrillators since the 1970s. The FDA cited Physio-Control Corporation with repeated violation of the FDA's Good Manufacturing Practice (GMP) regulations, resulting in numerous product recalls and five safety alerts over the past several years.

In 1990, the FDA issued a regulatory letter to the firm, which focused on Physio-Control's Lifepak 9 defibrillator. That device reportedly "locked up" when the power was turned on. The agency also cited numerous GMP violations as well as the company's failure to report possible device-related deaths and device malfunctions, as required by the FDA. Follow-up inspections in 1991 and 1992 disclosed that the company still had not adequately resolved quality assurance problems.

The FDA has particular concerns about the reliability of the Lifepak 300

Although the CRT program is being upgraded (see article, page 5, on ET intubation in the CRT curriculum), Dr. Alcorta says that the long-term plan calls for the "phasing out" of the CRT curriculum, with the majority of CRTs trained and certified as EMT-Ps by the mid-1990s and the remainder by the year 2000.

For information on the CRT/EMT-P review document, contact Mike Olds (MIEMSS Prehospital Testing & Certification) at 410-706-3666.

Automatic Advisory Defibrillator, which employs relatively new technology and has experienced multiple component failures. Some of the Lifepak 300s are equipped with a manual override feature, which allows a qualified operator to overcome certain failures. Units without this feature will be inoperable if the device malfunctions, resulting in failure to deliver a shock.

The FDA recommends the following precautions for units now in use:

- Test Lifepak defibrillators at the beginning of each shift.
 - Perform all periodic maintenance as recommended by the manufacturer.
 - If practical, have a back-up defibrillator available in case of device failure during a medical emergency.
- These recommendations are appropriate for all makes and models of external defibrillators.

The FDA recognizes that existing Lifepak defibrillators must be maintained to be kept in service. Therefore, the agency is allowing Physio-Control to continue to manufacture and sell parts and accessories for them.

One of the roles of the FDA is to identify and define problems related to medical devices. If you are aware of any deaths, serious injuries, or serious illnesses related to Physio-Control defibrillators or other devices, please report them to your EMS regional administrator. The FDA's Center for Devices and Radiological Health, Office of Compliance and Surveillance, can be contacted at 301-427-1100.

Field Feedback Program for Prehospital Providers

The MIEMSS Field Feedback Program gives prehospital care providers access to information about the status and outcome of patients they transport to the Shock Trauma Center. Karen Parkison, RN, EMT-A, is the coordinator for this program, which is now formally within EMS Field Operations. She can be reached at 1-800-528-1732 (from anywhere in Maryland) between 8 am and 4 pm on weekdays. At other times, an answering machine will record your message, and Ms. Parkison will return your call.

To protect patients' confidentiality, all callers will be verified as EMS personnel before any information is released. Please be prepared to give the following identification when you call: your name, station/unit number, provider number, MAIS number, and return phone number. Additionally, Ms. Parkison will need to know the incident date and time, the patient's age and gender, injuries assessed at the scene, and your specific concerns. Then, following verification, she can tell you what injuries were diagnosed or ruled out in the trauma center, the patient's disposition, and additional limited information about the clinical assessment.

By completing this loop, MIEMSS administrators hope to provide one more educational resource for

prehospital care providers. Individuals can find out if their suspicions about a patient's injuries were correct or if their assessment could have been better in any way. Ms. Parkison stated, "It's not a matter of who's right or wrong. It's a learning experience and an open door for the exchange of information." Many callers are simply curious about what the Shock Trauma doctors found during their examination of the patient. Information from the Feedback Program is also being used in stations for incident critiques, response reviews, and quality assurance mechanisms.

The Feedback Program does more than offer valuable information to EMS providers. As a component of the EMS Outcomes Management System, it is also the newest addition in Shock Trauma's patient data collection system and the first link of land and air transport registries. Each EMS/fire station in Maryland has an essential role in supporting the registries that document every patient transport.

A MIEMSS Feedback Form will be generated by Ms. Parkison for each patient transported to the Shock Trauma Center from the scene of injury. The two-part form will then be mailed to the prehospital unit responsible for that patient's care. The top part of the form (Section I) identifies the incident and transport and describes the results of assessment at

the scene and the clinical diagnoses. The bottom portion (Section II) is to be filled out by the transporting crew. Please ensure that the linking identifiers—the Reference Number, the EMS MAIS Number, and/or the MSP MAIS Number—appear on the form. The numbers link prehospital care data with clinical data and thus enable analysts to follow a patient from injury to the hospital and on to rehabilitation. The completed forms are to be sent to your EMS office and from there will be returned to MIEMSS.

The Feedback Program was developed by an EMS committee formed by Kimball Maull, MD. Soon after he arrived in Maryland, Dr. Maull visited the regions and talked with prehospital personnel. One request arising from those meetings was access to information about patients' dispositions. Dr. Maull asked the committee, consisting of Brad Cushing, MD, Mike Groves, RN, Kathy Ross, RN, and Ms. Parkison, to finalize the processes for the Feedback Program, which complements the monthly case review sessions held for field personnel at the Shock Trauma Center.

The program's forms are adaptable for local use. If you would like to discuss the creation of a similar program in your community, please call Ms. Parkison at the toll-free number.

◆ *Linda Kesselring*

New Hyperbaric Chamber at MIEMSS

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therapy. Many of them participate in ongoing research projects at the center.

Current research topics include treatment of exposures to toxic substances, healing enhancement for skin grafts and flaps, and the effects of drug overdose. Also being investigated are the potential benefits of hyperbaric oxygen for people who experience migraine headaches, for those

with chronic fatigue complex, and for people with the acquired immune deficiency syndrome.

The Center for Hyperbaric Medicine is the statewide referral center for fire fighters and other victims of smoke inhalation, carbon monoxide poisoning, and burns. It also serves as an information center for the national Diving Alert Network (DAN), directing the victims of scuba diving accidents in the northeastern United States to the nearest hyperbaric chamber (including MIEMSS) and providing simulation training for new divers.

According to Roy A.M. Myers, MD, director of the Center for Hyperbaric Medicine, the MIEMSS facility is one of the busiest programs in the country, doing some 9500 patients hours of diving (treatment) time and a further 2000 hours for research. The program offers 24-hours-a-day, 7-days-a-week coverage for emergency and routine treatments.



Director of the Center for Hyperbaric Medicine, Dr. Roy Myers, shows the new chamber to MIEMSS Staff.



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**Maryland Institute
for
Emergency Medical Services Systems**

**University of Maryland at Baltimore
22 S. Greene St., Baltimore, MD 21201-1595**

MIEMSS Director: Kimball I. Maull, MD
Acting State EMS Director: Richard L. Alcorta, MD
Managing Editor: Beverly Sopp (410-706-3248)

Address Correction Requested
MIEMSS, Maryland EMS Newsletter,
22 S. Greene St., Baltimore, MD 21201-1595

DATED MATERIAL

When It's the ONLY Means to Save a Life. . .

The holidays have come and gone and probably left us all a few pounds heavier and/or a few dollars shorter. But hopefully we are all more contented, refreshed, and infused with more energy for the new year ahead of us. We have many old and new challenges ahead of us. Together as a unified Maryland system, I feel that we can conquer any obstacle.

It has been brought to my attention that the "Physician Orders for Extraordinary Care Not Covered by Maryland Protocol," Section 1.8 in the *Maryland Medical Protocols for Cardiac Rescue Technicians and Emergency Medical Technician-Paramedics*, is somewhat vague. The ALS protocols provide both prehospital ALS providers and on-line physicians with parameters for the prehospital treatment and transport of patients in almost every imaginable medical or traumatic emergency. However, it is possible that the ALS provider may face a potential moral/ethical dilemma as a result of unanticipated or unforeseen situations not specifically addressed within protocols. Let me emphasize that these unforeseen or extraordinary situations arise extremely rarely, perhaps a few times over a span of years. It is in these cases only – where both the consulting physician and ALS provider agree that the patient's condition and extraordinary care is not addressed elsewhere in the ALS protocols and the extraordinary care is absolutely necessary to maintain the life of a patient – that Section 1.8 of the ALS protocols should be invoked.

The extraordinary care protocol is **not**

a protocol for "last ditch" efforts where you "can't do any harm." **Nor** is it a means of circumventing or avoiding protocols. For example, people may be trained and affiliated as EMT-Ps in one jurisdiction but may be working or volunteering in another jurisdiction that has different standards (such as a CRT-only jurisdiction). The paramedic must be familiar with the CRT jurisdiction's regulations and **cannot** initiate the 1.8 protocol to justify the standard use of EMT-P skills. However, if a procedure not covered by the ALS protocols would be truly life-saving in a particular situation – that is, without it, the patient would die – the extraordinary care protocol may be invoked. For example, in a CRT-only jurisdiction, if there is a case of tension pneumothorax, Section 1.8 could appropriately be invoked by the CRT or EMT-P in order to perform needle decompression, if he/she is trained in this procedure.

Both prehospital ALS providers and on-line physicians providing medical direction are clearly accountable for their actions in giving patient care. When an extraordinary care order is given, the prehospital provider must state this clearly to the physician so that the physician knows that the procedure about to be performed is beyond protocol. Then the prehospital care provider must accept the order and be comfortable with the procedure or medication that is being ordered over the communications system. Once this procedure or medication has been administered, the physician **and** the prehospital care provider are committed to

notifying within 24 hours both SYSCOM and the local ALS medical director about the use of the extraordinary protocol. A detailed written report is then submitted within seven days by the local EMS jurisdiction and the local ALS medical director to the Regional Medical Director and the State EMS Director for review and evaluation. A face-to-face interview with the prehospital care provider and the on-line physician is then conducted by the appropriate local jurisdictional officials, local medical director, regional medical director, and State EMS Director. The case is then submitted to the State Board of Physician Quality Assurance for review. The Assistant Attorney General for this Board has the responsibility of initiating legal action against the prehospital care provider who inappropriately invokes Section 1.8. The Board also has the responsibility to decertify the prehospital care provider based on a single incident of inappropriately invoking Section 1.8. The physician could also receive disciplinary action.

Prehospital care providers will save many lives during their careers. They should realize that their decisions to invoke the extraordinary care protocol carry with it the possibility of decertification and potential legal action. Section 1.8 is an **extraordinary care intervention** and should be invoked only when it is the **only** means to save the patient's life.

◆ *Richard L. Alcorta, MD*
Acting State EMS Director