



Maryland EMS News

Vol. 24, No. 1 For All Emergency Medical Care Providers December 1997



Scene of the 13th Annual Hazmat Drill: an MTA bus crashes into an overturned gas tank truck that has just collided with a rail tank car carrying 98% sulfuric acid.



Decontaminating the hazmat teams.



The Shock Trauma Go Team and paramedics check a patient who will be transported by Maryland State Police Med-Evac helicopter.

Testing Local Resources

The emergency plan of South Baltimore Industrial Mutual Aid Plan (SBIMAP) and Baltimore City's Hazardous Materials Action Plan were tested on September 23 during its annual hazmat drill. The *Baltimore Sun* cosponsored the event.

SCENARIO: A live sulfuric acid spill resulted from the collision of a rail tank car carrying 98% sulfuric acid with a fully loaded gasoline tank truck at a railroad crossing. The spilled gasoline and sulfuric acid started to enter a nearby wetlands area, requiring quick action to protect the plants and animals. This hazmat incident and potential fire were complicated when an MTA commuter bus with 30 passengers crashed into the overturned gasoline tank truck.

COMMENTS: State EMS Medical Director Richard Alcorta, MD, FACEP, praised the SBIMAP for a successful multi-faceted, multi-

agency drill that involved participants and resources from local, state, and national agencies, as well as from business and industry. "They are to be complimented for their integration of critical resources into a real-time scenario-based exercise with live hazmat materials. . . . This is the first time that *live* hazmat materials needing to be neutralized and *live* moulaged victims representing victims needing medical intervention were integrated in one drill."

During the drill, the Baltimore City Fire Department Medical Bureau tested the Virginia patient triage/tracking system which is being considered for use in Maryland.

The disaster exercise also tested interagency communications, as it included 14 participating commercial ambulance services. Although most of the 11 participating hospitals were well prepared, the drill highlighted some areas needing improvement.



Decontaminating a patient.

FYI: Quality Assurance

Editor's Note: This is the first in a series of articles highlighting the findings of the Quality Improvement Committees (QICs). The QICs focus on seven areas: MIEMSS administration, pediatrics, aeromedical, medical, trauma, pre-hospital education, and regional/jurisdictional programs. Several additional committees report to the MIEMSS Administration QIC. One of these focuses on Maryland Ambulance Information System (MAIS) accuracy. More than 200 elements are optically scanned and entered into the MIEMSS central database for MAIS. The MAIS data are used in the monthly production of jurisdictional reports that MIEMSS EMS managers and the state legislature use to plan for and improve the EMS system throughout Maryland. The goal of the MAIS accuracy committee is to improve the use of the MAIS to ensure a reliable assessment of EMS demand, response, and call outcome.

We are all aware that allergic anaphylactic reactions can be life-threatening with wheezing, pulmonary edema, and/or severe hypotension. A patient's airway can be compromised within minutes. The rapid onset of these reactions makes timely recognition and appropriate intervention of the utmost impor-

tance. Our training tells us that epinephrine is the single most effective medication in the treatment of priority 1 allergic reactions.

As part of an analysis of eight indicators identified by the Maryland Ambulance Information System (MAIS) Data Accuracy Committee at MIEMSS, a review of systemwide performance regarding the accuracy of documentation and the appropriateness of care provided to patients experiencing priority 1 allergic reactions was undertaken. This review examined MAIS forms during a 2-year period (totalling 510 calls) documenting priority 1 allergic reactions. The committee found that 55% of the time (270 calls) epinephrine was either not administered or not documented as being administered to patients triaged with an acute priority 1 allergic reaction (see graph below).

In an effort to further define the nature and scope of this problem, a random review was done of 10% of the 270 MAIS runsheets (27 forms) documenting priority 1 allergic reactions without epinephrine administration. (Note: The additional narrative forms that are kept by individual jurisdictions were not available for review and thus were not reflected in the findings below.) The results of the random review are as follows:

- 33% of runs reviewed involved true priority 1 patients who did not

receive epinephrine. This is a questionable quality of care issue.

- 26% of runs reviewed had the allergic reaction optical mark on the MAIS form inappropriately marked. This is a documentation error.

- 19% had unclear etiology or no "chief complaint" written in to allow comparison with optically marked data. Many had "See Additional Narrative" written instead. This is a documentation error.

- 7.5% were true allergic reactions that did receive epinephrine; however, the epinephrine medication option was not marked on the MAIS form. This is a documentation error.

- 7.5% had an inappropriate priority 1 status designation. This is an issue of questionable assessment.

- 3.5% had a true allergic reaction but had potential contraindications to the administration of epinephrine, such as age or underlying disease (eg, cardiac problems). This is appropriate care and documentation.

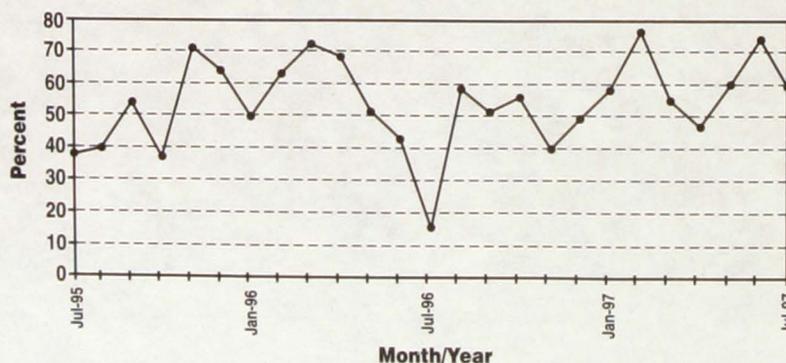
- 3.5% involved patients who refused administration of any medications.

From this review we identified two issues that we feel are most significant and require further attention. They are: (1) Are we providing optimal care to our priority 1 allergic reaction patients? and (2) how accurate and complete is our documentation of the care we are providing? Since our ability to determine optimal care is dependent upon the accuracy and completeness of patient care documentation, this issue will be addressed first.

The importance of accurate, complete, and timely data cannot be overemphasized. All of us have been trained to understand that documentation of patient care is important from a medical-legal standpoint. We can each recall the old legal axiom "**if it is not documented, then it was not done.**" This plays an extremely important role in the patient who refuses transport. It will only take one patient who expires at home after being seen by your EMS service to have significant financial impact on

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Priority 1 Allergic Reaction Transport With No Epinephrine Administered



FYI: Quality Assurance

(Continued from page 2)

your company and perhaps even on your jurisdiction. Therefore, incomplete documentation is obviously worrisome from a legal standpoint.

There are, however, other issues that make thorough patient care documentation very important. As most of you are aware, our healthcare system is changing rapidly and dramatically. The shift toward managed care and an emphasis on cost effectiveness and quality are the forces driving this change. For Maryland EMS, this means that the care we provide and the means by which we provide it will be coming under increasing scrutiny. Our ability to accurately and thoroughly evaluate our system will play a major role in **proving** that we provide high-quality and cost-effective service and that this service has a positive impact upon the outcome of our patients. It is important to note the emphasis on the word "proving" above. Simply *saying* that we provide quality service is not going to be sufficient. Even though we see the success stories and believe that we provide quality care, we will still have to use data to show that we are making a difference. And that data must be complete and accurate.

In some instances, important variables (bubbles) on the MAIS run-sheet relating to patient complaints, assessment of those complaints, or the treatment rendered are left blank or are inappropriately filled out. Each provider agency in the state should have been issued a booklet describing the meaning of various MAIS sections and the proper way to fill them out. Anyone who is unsure of the proper use of the MAIS form is encouraged to review this booklet. Thorough, complete, and accurate data are very important to our efforts to justify our EMS resources and to prove that we deliver quality, cost-effective care.

As part of our efforts to address the changes in our healthcare system and the need to justify what we do,

MIEMSS has adopted the principles and practices of Total Quality Management (TQM). Those of you who are familiar with this approach know that it places great emphasis on customer satisfaction. In fact, identifying the needs of customers and creating processes by which those needs can be satisfied are the driving force behind the implementation of any TQM process. Looking at this data accuracy issue from a TQM perspective, Maryland's EMS providers are one of MIEMSS primary customer groups. The reverse is also true. We (MIEMSS) are a customer of Maryland's EMS providers. One of the products you provide us with is information in the form of MAIS data. We, in turn, provide you with technical assistance, representation, oversight, and feedback on a statewide level. It is important to note, however, that the quality of the data we are able to feed back to you is only as good as the quality of data we receive from you.

The second issue we identified is a patient care issue. *Appropriate* care is always key in the management of your critically ill, allergic reaction patients. The protocol calls for early and repeated administration of SQ epinephrine (for the extremely anaphylactic patient, IV epinephrine 1:10,000 in 1 cc increments) and nebulized albuterol treatments to decrease bronchoconstriction and respiratory distress. IV Benadryl has been added as a new tool to combat this life-threatening reaction. If significant hypotension is a component of your patient's reaction, administer boluses of lactated Ringer's IV and get on-line medical direction for possible dopamine infusion and/or inflation of the pneumatic anti-shock garments (PASG).

Through accurate documentation and routine monitoring of system-critical indicators, we can prove we make a difference in the outcome of our patients and justify the dedicated

resources and costs of Maryland's superb EMS system. The roadmap leading to a successful future for Maryland's EMS system is in your hands. Document your way to success!

◆ Richard Alcorta, MD, FACEP
State EMS Medical Director

Quick-Combo™ Pad Failures During Cardiac Arrest & LifePak Pacing Failures

During the last several months, LifePak 11™ pacing failures during the course of treating cardiac arrest patients have been reported. PhysioControl is aware of the problem and has concluded that it occurs when the cable separates from the foil inside the Quick-Combo™ Pad. When this connection breaks, the pacing function stops. Further analysis suggested that the pads are either being applied in such a manner that the cable/foil interface is subjected to repetitive bending during cardiopulmonary resuscitation (CPR) or are being folded when stored.

Within Maryland we have also noted that there have been several pacemaker failures that we believe are attributable to the separation of the left and right components of the LifePak 11™ monitor defibrillator pacemaker. The current design of the carrying case may apply pressure over the release button for the left and right halves of the device. Improper contact between the left and right components on the monitor defibrillator unit, we suspect, will cause the system to fail to pace.

Quick-Combo™ Pad Application

On the advice of PhysioControl, department personnel should apply the Quick-Combo™ Pads so that the right anterior pad is in the right anterior mid-clavicular line, and the left patch in the left lower chest midaxillary line. Also do not fold the pads when storing them.

Pacemaker Failure

When using the LifePak 11™ monitor defibrillator pacemaker, if you wish to pace and it is failing to pace, stating a "pacing leads off," check to

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Billy Pugh Net Now Also Used For Patients in Supine Position

The Maryland State Police (MSP) Aviation Division recently expanded its aerial rescue capabilities. The Billy Pugh net can now be used in the aerial rescue of patients not only in the sitting position but also for those who are supine.

Throughout its history, the MSP Aviation Division, in keeping with its three-fold mission of Med-Evac transports, law enforcement, and search and rescue, has often used an overhead hovering aircraft to remove persons from dangerous situations. Such rescues were most frequently accomplished by using a specially designed suspended basket known as the Billy Pugh net, named for its manufacturer.

In the UH-1 Huey and in the 206B Jet Ranger, the Billy Pugh net was suspended on a fixed-length strap and was positioned by moving the aircraft. A victim placed inside the net was then moved to a safe location and offloaded. With the new fleet of Dauphins came the electric hoist. A similar version of the original Billy Pugh net was used and could

be raised or lowered by the flight paramedic using the hoist. Positioning the net was still accomplished using relative aircraft movement, and hoisted victims were removed directly into the aircraft.

Since the Billy Pugh net was designed to accommodate a patient in the sitting, not the supine position, it became clear that it could not be used to rescue an entire population of severely injured patients.

Unconscious patients and those with injuries requiring spinal immobilization could not be safely moved in the net. Ironically, the rescue missions of the greatest urgency often involve patients with these types of injuries. Aviation Division personnel, recognizing this, worked with the manufacturer and distributor of Billy Pugh nets to design a new basket. This basket can still be used to hoist a seated victim; however, it can be converted by the flight crew to the supine mode to accommodate a patient on a long backboard or stokes stretcher. Patients are hoisted to the outside of the airframe, secured to it, then flown

to a secure landing zone staffed by additional personnel. Upon landing, the victim is removed and either flown in Med-Evac configuration to the appropriate receiving facility or turned over to ground EMS personnel.

The rescue commander, EMS commander, and flight crew must reach a consensus on whether the chair or supine mode should be used; the decision is dependent upon several factors. For example, obviously an unconscious or immobilized victim would be rescued using the supine mode. However, multiple victims who are ambulatory can be rescued more rapidly by using the chair mode.

A trail line has also been added to the rescue equipment. The trail line, mandatory for supine mode rescues and optional for chair mode rescues, is deployed first to ground rescuers. Once ground rescuers have control over the trail line, the basket can be deployed directly to them more quickly. Once a victim is placed in the net, the trail line prevents excessive spinning and "pendulum" effect.

Since it is nearly impossible for the MSP to personally train providers statewide in the use of the new aerial rescue net and procedures, the MSP Aviation Division, with the assistance of MIEMSS Educational Support Services, has produced an instructional video. Designed to explain the advantages of the new aerial rescue net and what ground rescuers need to do to assist the MSP in using the device, the video is being distributed to jurisdictional public safety entities this fall.

For additional information on the enhanced aerial rescue capabilities of the MSP Aviation Division, call the MSP Training Section at 410-391-0700.

◆ Sgt. W. Patrick King
MSP Aviation Division



A patient in the supine position is positioned inside the Billy Pugh net.

WINTERFEST EMS '98

January 31 – February 1, 1998

SPONSORED BY

Easton Volunteer Fire Department
Maryland Institute for Emergency Medical Services Systems
Shore Health System
Talbot County Advanced Life Support
Tilghman Volunteer Fire Department
R Adams Cowley Shock Trauma Center

HOSTED BY

Tilghman Volunteer Fire Department
Harrison's Chesapeake House

LOCATION

WINTERFEST EMS will be held on Tilghman Island, with headquarters at Harrison's Chesapeake House. A detailed map and directions will be sent with your confirmation letter.

PAYMENT AND CANCELLATION POLICY

Pre-registration is required. No walk-in registrations will be accepted. Registrations will be accepted until January 9, 1998 or until the conference is filled – whichever comes first. Confirmation letters will be sent. All cancellations must be made in writing to:

WINTERFEST EMS '98 , c/o Talbot County ALS, 506 Idlewild Ave., Easton, MD 21601.

Refunds, excluding a \$10 processing fee, will be mailed for cancellations received prior to January 2, 1998. Cancellation after January 2, 1998 will result in forfeiture of your entire registration fee. (Note: There is a \$25 fee for bad checks.)

SPECIAL NEEDS

Individuals with disabilities are encouraged to fully participate in the conference. If you are a person with a disability who requires additional assistance, please contact one of the people listed below.

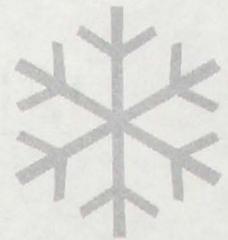
INFORMATION

For additional information, please contact Mark Cummings (Talbot County ALS, 410-820-8311), Terry Satchell (Easton Fire Dept., 410-822-4848), or Mary Alice Vanhoy (Shore Health System, 410-822-1000, x5554).



WINTERFEST EMS '98

CONFERENCE SCHEDULE



Saturday

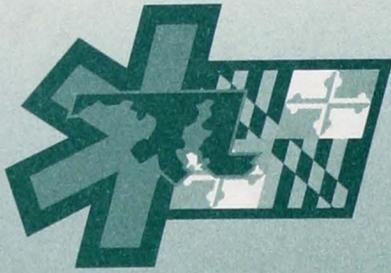
January 31, 1998

7:30 AM	Registration	1:00 PM	BREAKOUT SESSION #1 A - Tricks of EMS (1 T or B) B - Tactical EMS (1 T or B) C - Street Drug (1 M or B) D - 12-Lead EKG (Part 1)(2 A)
7:45	Welcome		
8:00	Terrorism and EMS (2 L or Cat. 2) <i>Richard Alcorta, MD, FACEP</i> <i>State EMS Medical Director</i>	2:15	BREAK
9:45	BREAK	2:30	BREAKOUT SESSION #2 A - Tricks of EMS (1 T or B) B - Tactical EMS (1 T or B) C - Street Drug (1 M or B) D - 12-Lead EKG (Part 2)
10:00	Documentation: How to Protect Yourself! (1.5 L or Cat. 2) <i>Roy Cowdrey, JD</i>	3:45	On your own
11:30	LUNCH WITH VENDORS	TBA	SUPPER/PARTY

Sunday

February 1, 1998

9:00 AM	Current Trends in Trauma Care (1.5 T or B) <i>Thomas Scalea, MD, FACS</i> <i>Chief of Trauma & Critical Care</i> <i>R Adams Cowley Shock Trauma Center</i>	11:45 AM	BREAKOUT SESSION #2 A - Medical Case Review B - Special Needs of Children C - Tricks of EMS D - "A" Is for Airway (1 M or A)
10:15	BREAK	1:00 PM	Helicopter Demo and Vendors
10:30	BREAKOUT SESSION #1 A - Trauma Case Review (1 T or B) B - Diving Emergencies(1 T or B) C - Why Is Your Patient Not Talking? (1 M or A) D - Patient Care vs Scene Preservation (1 M or A)	3:00	Closing Prehospital care providers will receive 9 continuing education hours. Nursing CEUs are pending.



Governor Parris N. Glendening

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DATED MATERIAL

Helmet Removal Protocol Update

Can the EMT-B use the Helmet Removal Protocol in the *Maryland Medical Protocols for Cardiac Rescue Technicians and Emergency Medical Technician-Paramedics*?

Definitely yes. This helmet removal protocol is applicable for both ALS and BLS providers. It delineates appropriate indications and contraindications for helmet removal in the field. Medical literature supports that if an isolated cervical spine injury is suspected, the patient should be immobilized in his/her helmet, as long it does not impair cervical immobilization or airway maintenance.

This shifts the responsibility of helmet removal from field providers, who are very adept at removing multiple types of helmets, to emergency department personnel. Emergency department personnel must now

become proficient in removing various types of helmets (football, motorcycle, bicycle, lacrosse, etc.) and the associated athletic or protective paraphernalia that patients may be wearing.

Several programs are available to supplement the education of emergency department personnel regarding the handling of patients in athletic gear. One of these is the program developed by Dr. Andrew Pollak, an orthopedic surgeon at the R Adams Cowley Shock Trauma Center. His training program for hospital and EMS personnel focuses on the athlete with suspected cervical spine injury who is wearing protective headgear and athletic attire, discussing his/her stabilization and appropriate techniques for removing the different pieces of protective headgear and athletic attire. You can contact Dr. Pollak at 410-328-6280, or call your local EMS officer to see if there is a similar training program in your jurisdiction.

◆ *Richard Alcorta, MD, FACEP*
• *State EMS Medical Director*

Pacing Failures

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make sure the left and right halves are appropriately latched and secured together to confirm contact between the left and right halves on the monitor defibrillator unit. Hopefully this will remedy the pacemaker failure; if it does not, consider changing the Quick-Combo™ Pad.

Procedures to Follow for an Equipment or Pad Failure Pursuant to General Order 97-026, Complying with the Safe Medical Devices Act of 1990

Any instance that a medical device contributes to the injury of or death of a patient shall be reported on form FDA3500A.

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