

# Legislators Report On Med-Evac Program

*The Executive Summary of the Joint Legislative Committee on the Med-Evac Program is printed verbatim and in its entirety below. Note: "IRF" means Instrument Flight Rules.*

The crash of a Maryland State Police helicopter on a Med-Evac mission on January 19, 1986 with the loss of its flight crew raised serious questions during the 1986 Session about the State's Emergency Medical System (EMS). Budget language subsequently was adopted requiring a consultant study that would address the organization and management of the Med-Evac Program, analyze the need to replace the State Police helicopter fleet and recommend the type of aircraft to be acquired if a need was found to do so, recommend how the helicopters should be deployed, examine the training requirements of Med-Evac personnel (particularly pilot flight hours and experience), study whether pilots and medical technicians should be uniformed police officers or civilians, and make recommendations regarding the adequacy of the current EMS communications system and training programs.

This report was to be presented to a joint committee composed of members of the budget committees — the Joint Legislative Committee on the Med-Evac Program.

The resultant study, prepared by PHH Aviation Services, Inc. recognized the uniqueness and exceptional quality of Maryland's public use, systemwide, emergency trauma-care system. It did recommend enhancements, however, including replacement of the existing fleet of Bell Jet Rangers with larger, twin-engine helicopters; a requirement that current State Police pilots should have a minimum of 1,500 helicopter flight hours (with a possible waiver to 1,000 hours) and new pilots a minimum of 2,000 hours; the use of flight crew incentive pay to aid in recruiting; and a number of communication, training, and procedural enhancements.

The Joint Committee has held lengthy hearings and work sessions on the State's Emergency Medical System and inspected the helicopters that could be suitable replacements for the current aircraft. As the Committee delved into



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the "hardware" issues and addressed such questions as whether or not the current fleet should be replaced and what avionics equipment is necessary, it became increasingly evident that the more crucial questions involved people. While the acquisition of larger, more powerful helicopters would clearly enhance the State Police capability to safely

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*Representatives from MIEMSS, the Maryland State Police, and the Maryland General Assembly viewed and tested the patient-care*

*capabilities of 13 helicopters from various manufacturers at Martin Airport on November 24.*

# Report on State Med-Evac Program



The Joint Legislative Committee on the Med-Evac Program are (l-r): Delegate John Ashley, Jr., Delegate Samuel Linton, Senator John Coolahan, Senator Francis Kelly (chairman), Delegate John Astle, Senator Frank Komenda, Senator Catherine Riley, and Senator Bernie Fowler. Not shown are Delegates Paul Muldowney and Timothy Maloney.

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fulfill its Med-Evac, law enforcement, and search and rescue missions, the use of more sophisticated aircraft requires more experienced and proficient pilots. While the pilots of the Maryland State Police have done an exceptionally fine job and established a truly remarkable safety record while flying missions second in difficulty only to combat, the flight hours and experience levels of a number of its pilots fall below the current EMS industry minimum standard of 2,000 helicopter flight hours. The Joint Committee is concerned about the relatively low flight hours of some of these pilots and strongly believes the pilot selection and training issues, the people issues, are more important than equipment. At the same time, the Joint Committee believes that both of these aeromedical components need to be addressed to ensure that Maryland's unique and world-renown trauma care service remains a premier system and a safe one. To accomplish this, the Joint Legislative Committee on the Med-Evac Program makes the following recommendations:

1. The Maryland State Police Aviation Division mission is a three-pronged one involving emergency medical transportation, law enforcement, and search and rescue. Protocols for cooperative use, deployment, and priority of helicopter service are to be developed by the Executive Helicopter Advisory Committee.

It is further recommended that the Aviation Division increase the utilization of its fixed-wing aircraft for law enforcement activities and for such medically related missions as interhospital transports, for example, for interstate patient transfers to appropriate treatment centers in Maryland. Better utilization of the existing fixed-wing assets would increase the availability of Med-Evac helicopters for scene flight responses and be more economical than the use of helicopters. In order to accomplish this in an efficient and effective manner, the State Police should develop a plan for the employment of its aviation assets for all three of its missions and submit the plan to the Joint Committee by June 1, 1987.

2. There should be seven helicopter sections (with the seventh one deployed in Southern Maryland) operating 24 hours a day, 7 days a week. The need for an eighth section should be ascertained by September 1, 1987. A minimum of 10 helicopters should be purchased. All should be medium-sized, IFR-certified, twin-engine helicopters of the same model; purchased from the same manufacturer; and meet the multiple mission criteria established by the specifications provided in the Request for Proposal. At least one of these should be configured for multiple mission requirements and should also serve as a training helicopter. Two helicopters should be equipped with hoists.

Recognizing that the existing Bell

Jet Ranger helicopters may continue to play a role in training and law enforcement, it is recommended that at least some of these helicopters be retained during the phase-in of the new helicopters. Their continued role should be examined by the Executive Helicopter Advisory Committee.

3. The newly purchased helicopters should be phased-in as soon as possible over a maximum period of five years but it must be recognized that the need for and timing of the fleet upgrade may change. The phase-in must be within budget and training constraints and the Joint Committee recognizes that it will be influenced by the availability of properly trained and qualified personnel.

4. The Request for Proposal for the Med-Evac helicopter purchase is to be based upon minimum mission specifications, recommended by MIEMSS and the State Police. The Request for Proposal must be designed in a manner which ensures competition. The proposal process is to be expedited. The specifications are to be submitted to the Joint Committee for its review prior to the finalization of the Request for Proposal. Procurement is to be conducted by the Department of General Services and is to be by competitive negotiation in accordance with Title 21 of the State Procurement Regulations. If it is determined that expertise in developing specifications or in any other aspect of the procurement process is needed that is not available through a State agency, the Joint Committee recommends that it be obtained on a contractual basis. The Joint Committee's intent is that a low bid should not be the sole and ultimate determinant in selecting the successful proposal.

Consideration should be given to such criteria as the manufacturer's willingness and ability to provide on-site and off-site training and to absorb all or part of the training costs; the availability of a flight simulator; operational time lost for maintenance; cost per operating hour; engine reliability and serviceability; and adherence to the mission standards as developed in the Request for Proposal.

5. The Joint Committee is uncomfortable with the low helicopter flight hours of many of the Maryland State Police pilots, particularly in light of the planned introduction of more sophisticated helicopters that require pilots with

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*Howard Belzberg, MD, led the critical care evaluation team which examined each helicopter during the November 24 helicopter evaluation and actually loaded approximately 400 pounds of equipment and a "mock" patient on a stretcher into each aircraft. In addition to the critical care evaluation team, there were evaluation teams focusing on neonatal/perinatal transport, trauma care, and cardiac assistance.*

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even higher levels of experience. At the same time, the Med-Evac system must be expanded and not have its growth retarded. To accomplish both of these goals, the Joint Committee recommends that only current Maryland State Police pilots who have a Commercial Pilot Certificate with a helicopter rating and instrument rating for helicopters, and a minimum of 1,500 helicopter flight hours should fly the new helicopters as pilot-in-command. This requirement may be reduced by a waiver to 1,000 helicopter flight hours for current State Police pilots who have flown Med-Evac missions as pilot-in-command for at least three months. All current State Police pilots, including those currently in training with the Aviation Division, with under 1,000 helicopter flight hours should be sent, at State expense, to intensive flight-training schools to upgrade their helicopter flight hours to the 1,000 hour waived minimum. This is to be done as expeditiously as possible. No new pilots are to be hired with less than 2,000 helicopter flight hours, and they must have a Commercial Pilot Certificate with a helicopter rating and instrument rating for helicopters. All pilots are to be IFR-certified as soon as possible.

6. The Joint Committee is not convinced that the State's Emergency Medical System (EMS) pilots need to be law

enforcement personnel. Given the existing situation that all pilots are sworn police officers, it is the Joint Committee's preference that this requirement be maintained for the present. However, if the planned flight hour upgrade is stymied or delayed by an inability to attract pilots who are willing to be police officers, civilian pilots are to be hired. A State Police recruiting effort is to begin immediately and the Joint Committee is to be advised of its progress. It is also recommended

that attendance at the State Police Training Academy be waived for police officers who have been trained by a police agency certified by the Maryland Police Training Commission and who qualify to be State Police pilots. It is also recommended that the requirement of serving as a road trooper immediately after the Training Academy be waivable in order to meet pilot manpower needs.

7. The salary levels of the flight crew need to be upgraded and the State Police are to develop a salary and/or position classification plan that creates special aviation rank(s) for the flight crew with the goal of the State Police compensation package being competitive with the private helicopter industry. This plan, with cost projections, is to be submitted to the Joint Committee during the 1987 Session.

8. The Joint Committee is committed to a 24-hour, statewide EMS service which places extraordinary demands upon pilot skills. In view of this, the pilot-in-command must have the authority to make the final decision as to whether or not to fly and must be allowed to do so in an environment in which his professional judgement is not impaired or pressured by external forces. Because of the nature of this mission, it is crucial that all State Police pilots are IFR-rated, but the Joint Committee wishes to make it very clear that helicopter flights shall not be attempted or planned into IFR conditions. The IFR capability is intended to serve only as a safety measure when inadvertent IFR conditions are encountered. The

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*Maryland State Police medic Tom Barker loads a "mock" patient into a helicopter during the November 24 helicopter evaluation at Martin Airport.*

# Report on State Med-Evac Program

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State Police are to develop a policy to ensure that its pilots may exercise their judgement in a positive environment and this policy is to be reviewed by the Executive Helicopter Advisory Committee.

It is further recommended that the Executive Helicopter Advisory Committee develop protocols regarding reciprocity of helicopter services with adjoining states. State Police assets should not be used when other resources are available.

9. The Executive Helicopter Advisory Committee should be reconstituted to deal with policy and operational matters. It should be comprised of the Lieutenant Governor, the Director of MIEMSS, the Superintendent of the Maryland State Police, the Director of Medical Field Services (MIEMSS), the Commander of the State Police Aviation Division, a representative from the Department of Budget and Fiscal Planning, a representative from the Department of Health and Mental Hygiene, a representative of fire and rescue services, and the Chairman and Vice Chairman of the Joint Legislative Committee on the Med-Evac Program.

10. There should be a separate budget MARC established for MIEMSS field services and for the State Police Aviation Division and appropriations made through the normal budget process. In recognition of the significance that over 80% of the patients treated by Maryland's trauma care system are motor vehicle related, it is recommended that the capital purchase of the new helicopters should be funded by the Transportation Trust Fund. The Joint Committee wishes to make it clear that this revenue source is to be used only for this purpose and should not be construed as a dedicated tax. All other funds (for example, maintenance, training, personnel, etc.) are to be provided from the General Fund.

11. The existing eight-year plan for upgrading the Emergency Medical Services communications and training network, including personnel, should be fast-tracked and completed within a maximum of four years. A plan for doing so should be submitted to the Joint Committee as soon as possible. The University of Maryland should take immediate steps to prepare Dunning Hall on the University of Maryland of Baltimore campus for occupancy by MIEMSS field ser-

vices. The Joint Committee is to be advised in writing by January 14, 1987 of the University's actions in this regard.

12. The Aviation Division should meet all applicable Federal Aviation Regulations, even though the Division is exempt as a public use entity. Check rides for all helicopter pilots should be conducted annually by Federal Aviation Administration flight standards examiners.

13. The Joint Legislative Committee on the Med-Evac Program should be continued as an oversight committee and should be comprised of five Senators and five Delegates.

14. The questions of the efficacy of field triage scoring systems, the opportunity for third party reimbursement, and the statutory rule-making authority of the Director of MIEMSS will be studied during the 1987 Interim by the Joint Committee.

15. Effective and efficient management of human and material resources is critical to the accomplishment of any organization's mission. In recognition of this, the Joint Committee recommends that both the MIEMSS and the Aviation Division components of the State Emergency Medical System be evaluated at least annually to monitor the progress and implementation of the recommended enhancements and to address budgetary, legislative, and other issues to ensure that the system is being managed and is operating in the best interests of the citizens of the State.

## Dissenting Opinion Regarding Recommendation 10: *While supportive*

of the Joint Legislative Committee on the Med-Evac Program in general, the undersigned are not in favor of again using Transportation Trust Fund revenues for non-transportation projects.

Senator John C. Coolahan  
Senator Frank J. Komenda  
Delegate Timothy F. Maloney

## Stavrakis Resigns As ALS Director

Peter Stavrakis, MD, recently stepped down from his positions as chief of emergency medicine at the Union Hospital of Cecil County in Elkton and as medical director of the ALS program in that county. Through his work, continuing education, case review, and certification for prehospital care providers were established. As chairman of the CRT committee at Union Hospital, Dr. Stavrakis oversaw CRTs and EMTs as they related to and interfaced with hospital personnel.

John Barto, assistant administrator for Region IV says, "Dr. Stavrakis was a key figure in establishing ALS in Cecil County and pivotal in its growth from one company to seven."

Although he was born in Greece, Dr. Stavrakis spent his early years in Kiev in the Ukraine, where traumatology was already a recognized medical specialty. He came to this country in 1950, did his residency in Wilmington, Delaware, and passed his Maryland Medical Boards in 1952. Dr. Stavrakis came to Union Hospital and participated in the Maryland EMS system from its inception in the early 1970s.

"There was some resistance to the concept of an emergency medical system at the beginning, but with the help of the Region IV office and the dedicated EMS volunteers in the Cecil County fire departments, we convinced the skeptics," Dr. Stavrakis says. "The system is well established now."

Still active in the emergency department although no longer its director, Dr. Stavrakis will continue to be available for interface and for consultation when he is on duty. And when he is off duty, Dr. Stavrakis will now have the time to reflect on his many experiences in the field of emergency medicine and to publish some of his own ideas on the subject.

—Erna Segal

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# Planning for Haz Mat Management. . .

"The haz mat team rushes in where everyone else is rushing out," explains Capt. Mary Beth Michos, RN, CEN, former EMS officer and now training officer of the Montgomery County Department of Fire/Rescue Services. "Haz mat" is an abbreviation for hazardous materials, which are described as substances that in a given quantity present potential risks to either health, safety, or the environment.

"Rescue workers are being injured or killed because they don't have a high index of suspicion as to what causes health hazards, and they become victims themselves," Capt. Michos says. "Our involvement in haz mat management must begin before we get on the ambulance or medic unit to respond. We need to plan in advance."

## People at Risk

Many groups at risk for illness or injuries from hazardous materials include the following.

**Workers**, especially those in high-tech industries. This includes those involved in the manufacture, storage, transportation, use, and disposal of those products.

**Law enforcement agencies**, who are usually first on the scene. They must provide security and maintain traffic. They do not usually receive training in methods of self-protection; many are injured, disabled, or killed.

**Firefighters**, who are extremely at risk. Hazardous materials are involved in 20-25 percent of their calls. They often don't use the appropriate protective gear they need, especially breathing apparatus.

**The general public**, because when a haz mat incident occurs it is usually at the worst time, in the worst place. It will affect large numbers of people who may have to leave their homes or businesses to escape the danger.

**The media**, who want to get the big news and don't care how dangerous it is. They will break through security lines to be first.

**Medics**, who may think they are dealing with a medical problem because their patient is having trouble breathing or is unconscious, but in reality the problem may be in the environment and pose a danger to them too.

**Hospital personnel**, who receive patients without proper notification about the potential dangers or, if notified, do

not know how to handle them.

## Locations of Haz Mats

Part of the planning process that EMS personnel should participate in is the identification of areas in which haz mat incidents are likely to occur. These include:

- **Transportation.** What type of transportation routes for hazardous materials exist in the EMS response area: airports, pipelines, railroads, major highways? What would happen in the event of a major derailment, fire, or explosion?

- **Fixed facilities.** Even a benign-looking office building or store might hold potential dangers. For example, jewelry stores use cyanide. **Hospitals:** Among haz mat materials are anesthetic gases, sterilizing gases, radioactive materials, biologicals, and chemicals. Hospitals are powder kegs of haz mat, and yet they are filled with sick and debilitated people. EMS personnel need to know where the hazards are located. **Chemical plants:** Find out what chemicals they contain and get specific information as to how to handle them.

## Identification of Materials

When the locations of hazardous materials have been identified, the specific materials must then be identified. This enables the emergency services to plan for the resources that would be needed to care for patients overcome by specific agents.

EMS personnel should have access to haz mat references, either on their ambulances, command unit, or haz mat response unit. Numbers for CHEMTREC and the poison control center for the area should also be available.

## Supplies Needed

In a haz mat situation, as in a disaster, there might be many victims who have the same problem. Identify the supplies that might be needed and make arrangements in advance for gathering supplies in quantity if necessary.

Protective gear, both disposable suits and full protective gear with self-contained breathing apparatus, should be on the unit or at least readily available. Suits sometimes do not offer adequate protection; for example, personnel may suffer from the heat and from fluid loss (some have been known to lose 10 to 12 pounds of fluid in 30 minutes while wearing a protective suit). EMS personnel must

learn to protect themselves, Capt. Michos says, "or they become part of the problem instead of the solution. A jacket with the 'Star of Life' symbol will not protect us."

If you approach a situation that seems out of the ordinary, consider whether the patient might have been exposed to a hazardous material. Park your vehicle where it won't be affected, upwind, away from contamination. Don't walk through a spill; the product may penetrate your shoes. Coordinate with other agencies. Find out their plan of attack and what they want from you.

## Participation in Haz Mat Incident

EMS personnel can participate in a haz mat incident in one of two ways: either by serving on haz mat teams directly as health and safety officers or by serving as backup units to the team. The role of EMS personnel serving on haz mat teams is to *help identify the hazardous substance*; make recommendations to the incident commander as to *what protective gear is needed*; *zone off the area* to give limited access to certain people; *recommend how long rescue workers can stay in*; and *monitor rescue workers* with radio communication on a one-to-one basis. A second rescue workers should be suited up and ready to go in when the first one comes out. *Evacuation* of a haz mat incident differs according to the procedures of each district. Capt. Michos says that in her area, fire suppression and haz mat personnel generally bring the victims out to EMS personnel, who stay out of the danger zone. *Stabilization* depends on the number of patients in need of care at one time. If there is one patient per ambulance crew, full treatment can be delivered. If, however, there is a mass casualty incident with 10 to 20 patients per ambulance crew, treatment may have to be only assuring a primary airway, breathing, circulation, and C-spine immobilization, for a while. *Decontamination* should take place as soon as possible, depending on the patient's condition. Regarding *medical support needed*, most symptoms will be respiratory or central nervous system in nature.

In handling a haz mat incident, at some time it may become necessary for EMS personnel to ask whether there are going to be patients or just victims. Capt.

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# Planning for Haz Mat Management. . .

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Michos emphasizes, "Sometimes we can tell from the magnitude of the incident that the people are not going to be viable. Rescuers' lives have been lost because they didn't know when to change from a rescue mode of operation to a recovery mode of operation. We do not risk our lives or the lives of other people when we have a high degree of suspicion that there is no person viable in that incident."

Injuries that might occur in a haz mat incident may differ, but Capt. Michos says that handling all of them calls for going down the checklist: protection of rescuers, decontamination, maintenance of an airway, administration of oxygen, blood analysis (if it's part of routine and won't cause delay), and IV therapy if needed. If IV therapy is to be given on a prophylactic basis only, it should be considered whether doing so will introduce an external contaminant internally, and it must be judged whether that danger outweighs the need for an IV. If the patient needs the IV for medical reasons it should not be withheld.

The hospital should be notified as soon as possible so adequate preparations can be made to receive these patients. Hospital personnel might need protective clothing; patients from a haz mat incident might need to be re-routed to a separate entrance so they don't contaminate the main entrance of the hospital. They may need to be put in isolated areas for decontamination. (Autopsy tables in the morgue are excellent for this purpose.) Suburban Hospital in Bethesda just opened a "decon" room with an entrance separate from the normal emergency department entrance.

## Followup Needed

When the incident is over it must be critiqued to see what was learned, and how to do it better next time. Revisions might have to be made to procedures and protocols. There should be a follow-up on the injured.

Everyone who was involved in a haz mat incident should be aware of latent symptoms and instructed to obtain medical assistance if they appear. One problem is that rescuers might be sneezing and have watery eyes and attribute these symptoms to smoke; however, the symptoms might also be caused by exposure to toxic products. A high index of suspicion must be maintained.

Records should be kept on all personnel exposures. There have been incidents that caused an entire shift of firefighters to have upper respiratory distress.

In many instances haz mat teams have no idea what substances confront them until the substances are analyzed, because a mixture of products has occurred. For example, a fire at a nursery/garden center involves fertilizers, pesticides, and other products in the smoke. These combine to form new substances.

Haz mat injuries are usually either thermal, radiologic, asphyxiation, chemical, biological, or mechanical. A short description of treatment for each of these follows.

## Thermal Burns

Many haz mat injuries are thermal burns. The patient should be removed from the source of heat, or the heat source should be removed from the patient. The burns should be assessed to determine whether they are partial or full thickness: first-, second-, or third-degree burns. Check local protocols as to whether a wet or dry dressing should be applied; if there is powder around the burn, a wet dressing could make it worse.

## Radiologic Burns

Radiation burns must be treated differently. Rescue personnel should wear dosimeters to ascertain their levels of exposure. Until the source of radiation has been detected, strategies for protection cannot be devised. Some radiation incidents are not as lethal as others. They can be controlled by limiting the care provider's time of exposure to the patient; putting distance between the care provider and the source; and shielding. Alpha rays are not a problem unless ingested, and they can be shielded by a sheet of paper. Gamma rays must be shielded by lead.

Approach the site of a radiation incident upwind. If there is particulate fallout, usually a Tyvek disposable suit will give enough protection. If, however, there is a fire with the product in the air, full protective gear should be used. Someone should be assigned to detect and measure the level of radioactivity.

## Asphyxiation

When a haz mat incident releases toxic inhalants the gases may displace oxygen, causing asphyxiation. Toxic in-

halants combine with moisture to form either acid or alkaline corrosives. Some combine with body moisture, causing symptoms such as burning in the nasal passages that causes sneezing; intense coughing that causes chest pain; increased secretions; and pulmonary edema. The more water soluble the inhaled gas is, the more upper respiratory symptoms there will be.

## Chemicals

The amount of damage chemicals do to the body depends on the length of time a person has been exposed, the concentration of the chemical, the nature of the chemical itself, and the type of exposure experienced.

Pesticides are among the most common causes of illness due to haz mat incidents. Pesticides used for bugs, rats, etc., can be ingested, inhaled, or absorbed. Some are so strong that one drop on the skin is fatal.

Organophosphates are among the most commonly used types of pesticides. These replace solid hydrocarbons such as DDT, which were found to enter the food chain. Organophosphates do the job, last about a week, and then are destroyed. They are the same products that were used years ago as nerve gases in chemical warfare. They are dangerous because they inhibit the function of ace-

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A decontamination facility must accommodate this process: (1) enter dirty area; (2) clothes removal; (3) shower; (4) dress; (5) medical evaluation; and (6) exit to a clean area (not back through the dirty area).

The shower facility should have mild soap, Q-tips, nail cleaners, laundry bags and a means to identify the clothes taken off, and clothes for the newly clean person to wear. Clothes can be old ones from thrift shops, uniforms, or coveralls from old civil defense shelters. There must be people to monitor the process and to help.

Determine where the contaminated water will be run off. If it goes through a treatment plant, notify the plant within four hours that the contaminants have been put into the system. If the water will be untreated, it must be contained. After the initial dirt has been removed, the dirty equipment must be cleaned.

# Planning for Haz Mat Management. . .

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tocholinesterase, which is needed for nerve impulse transmission. Symptoms of exposure include salivation, lacrimation, urination, and diarrhea. Gastrointestinal upsets and emeses may also occur. Besides oxygenation, the antidote is atropine given in massive doses (1 to 4 mg every 5-10 minutes), until the patient shows signs of atropine toxicity. Oxygen is contraindicated in paraquat poisoning.

For further information about pesticides, Capt. Michos recommends a booklet put out by the Environmental Protection Agency, "Recognition and Management of Pesticide Poisonings."

## Biological Contaminants

Exposure to etiologic agents causes disease. Factors affecting one's susceptibility to the disease are the point of entry of the microorganism, dose, virulence of the organism, and the susceptibility of the host. People who are young, old, and debilitated are more susceptible upon exposure. Some of the diseases possible in an EMS setting are measles, meningitis, hepatitis, and AIDS. EMS personnel should be immunized against conditions for which there are vaccines available.

Precautions should be taken in treating patients who may have a communicable disease: *wear gloves* to shield against body secretions if the patient is coughing up or bleeding, if wounds are draining, or while handling needles; *wear a mask* when appropriate; *avoid mouth-to-mouth contact*; *bag dressings* in an isolation bag; *change and remove linens*, don't just turn them over; *disinfect reusables and get rid of disposables* — you are legally liable if a patient catches something from a re-used disposable item; *clean your vehicle* with either a 5 percent Clorox solution or a strong detergent like Tide (airing it out is of questionable value); *wash hands* before and between treating patients.

## Mechanical Injuries

Mechanical injuries caused by blasts can affect certain organs, harm the central nervous system, or cause traumatic amputations or fractures. The wounds must be treated with care so that contaminants are not introduced.

## Decontamination

Decontamination can be defined as getting rid of toxic products that will hurt

you or your patient. One of the most important aspects of haz mat management, decontamination is often overlooked. Where and how it will take place must be considered from the beginning of the incident, not just as an afterthought.

The most common methods of decontamination are *brushing off the contaminants*, which has to be done without spreading them in the environment; *dilution* (washing them off), but first it must be known what the product is (if it is dangerous to put into the sewer system it must be contained); *absorption*, which is usually done after a spill (this leaves solid waste, which is still dangerous and must be disposed of); and *neutralizing* and destroying the toxic products with various solutions and strong detergents.

"The best treatment in a haz mat incident, as in every aspect of medicine, is prevention," Capt. Michos says. Limit access to dangerous substances and take measures to reduce spread. Prepare the ambulance or medic unit so vehicular contamination will be minimal. If you know in advance you will be transporting contaminated patients, drape the inside of the vehicle with plastic sheeting or disposable sheets. Tape the cabinets shut so contaminated products can't get inside; if they do seep in, the cabinet's contents will have to be discarded. Prior to draping, assemble all the equipment that will be needed. It does no good to carefully drape the interior of the ambulance only to break it down to reach a suction machine or a dressing, Capt. Michos says. Use disposable items when possible. Protect the vehicle and yourself.

Decontaminate the patient as much as possible, and contain what cannot be removed. Remove the clothing, and flush off as much as possible. (This may not be possible in sub-freezing temperatures.) When the patient has been cleaned up as much as possible, wrap him in a blanket.

Be sure to let the hospital know how many patients you are bringing in, and to what contaminants they have been exposed. Hospitals that do not have decontamination rooms go through a similar procedure of protecting their area. They must also close off the air systems to the rooms to which these patients are taken so toxic products don't get into the ventilation system and circulate to other parts of the hospital. They may designate a different entrance of the hospital for con-

taminated patients.

Emergency services personnel must be decontaminated as soon as possible. These procedures should be followed: move from the "hot" areas to the "decontamination" area. Remove the initial contaminants, possibly by hosing down the personnel in their full protective gear, to make it safe to remove their breathing apparatus. Remove the protective gear. To complete the decontamination process, personnel need to remove all clothing and shower thoroughly. This may be done on site if resources are available, or at a decontamination center remote from the incident.

Set up and identify decontamination centers in your community. "Montgomery County had two pesticide fires within 18 months, each leaving about 75 people in need of decontamination. This was accomplished very well by a local hospital, at the cost of \$125 per person to the county. The haz mat team was informed that we would have to find a better and cheaper way to do the job," Capt. Michos says. "Upon investigation, we determined that adequate facilities for decontamination were available at the Montgomery County Public Services Training Academy. Other facilities such as schools and fire stations could also be used."

—Erna Segal

## Reminder! We've Moved!

Several MIEMSS field operations offices have moved to Whitehurst Hall at 624 W. Lombard Street. The communications office is located on the first floor; the operations research and systems analysis office, on the second floor; the computer resources and testing and certification offices, on the third floor; and the prehospital care office and Region III office, in the basement.

The office phone extensions have remained the same. All mail should continue to be addressed to the specific office, MIEMSS, 22 S. Greene Street, Baltimore, MD 21201-1595.

The Region V Office moved to 5103 Berwyn Road, College Park, MD 20740. The new phone number is 301/474-1485.

**MIEMSS has a new  
telephone  
exchange:**

**328**



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## **Train Wreck Discussed At EMS Care '87**

The Amtrak-Conrail train accident in Chase, Maryland will be one of the subjects covered by Jeff Mitchell, PhD, in his talk on critical incident stress debriefing on April 25, at EMS Care '87. Plan to attend! For further information on the conference, call Marie Warner at 301/474-1485.

## **ENA Meeting Slated**

The Maryland State Council of the Emergency Nurses Association will hold its annual meeting and luncheon on Friday, April 24, from 10 am to 4 pm at the Greenbelt Hilton, the site of EMS Care '87. A mailing about this meeting is being sent to the membership. For more information, call Carol Mays at 301/494-8386.

## **Shock Trauma Gala Set for April 11**

You are invited to attend the black-tie, Shock Trauma Silver Anniversary Gala on April 11 at 8 p.m. at the Towson Center. Governor William Donald Schaefer is honorary chairman of the gala, which includes cocktails, dinner, and dancing. Tickets are \$150 per person, with all proceeds to benefit Shock Trauma. For additional information, call Karen Heidrick at 301/328-5118.

**Maryland Institute for Emergency Medical Services  
Systems  
and the Region V EMS Advisory Council  
Present**



Hosted by the Prince Georges County Fire Department  
at the Greenbelt Hilton and Towers

**APRIL 24 - 26, 1987**

**12 hours of continuing education credit for one low price—\$50.  
Free T-shirts for Early Bird Registrants.**

For information and program schedules, please contact the Region V  
EMS Office at (301) 474-1485 or write P.O. Box 1658, Bowie, MD 20716