Sledside manner and other facets of emergency care are constantly critiqued. Shown above, a "quickie" splint is being applied.

Maryland
EMS
NEWS

Vol. 10 No. 7 FEBRUARY 1984

Thank You, Volunteers!

Many thanks to all who volunteered to drive the neonatal transport van. Twenty-six EMTs responded to our request for volunteers!

Wisp Ski Patrol Rescues Injured Skiers

One of the oldest emergency care providers in western Maryland, the Wisp Ski Patrol has handled injuries to the skiing public for a quarter century.

Housed in the "Eagle's Nest" at the base of Marsh Mountain in central Garrett County, the patrol functions daily during ski season with at least two paid members during daylight hours and assigned volunteers at night, covering nearly 12 miles of trails. Communications throughout the mountain are by radio, and consequently response time to an accident is seldom more than seven minutes.

Patrollers are faced with not only a hostile environment but also an average of 5–7 injuries per 1,000 skiers per day. Most are traumatic injuries: fractures, dislocations, sprains, lacerations, and contusions. Lower leg fractures head the list and are dealt with by a unique device known as a "quickie" splint — two foam-padded pieces of plywood hinged with canvas — which quickly and effectively immobilizes the leg. Transport from the accident site to the patrol room is by a specially designed toboggan which carries splints, scoop stretcher, cervical collar, blankets, and waterproof body wrap. Dressings, bandages, and incidentals are carried by each patroller in a "fanny pack" pouch belted around the waist.

More positive release ski bindings have reduced lower leg injuries to some degree, but taking the place of leg fractures are upper extremity injuries such as shoulder dislocations, AC and clavicular fractures. Lacerations have a big share of statistics because the free-spinning ski with its razor-sharp edges incises tissue.

Injury potential is high: ranging from collisions between high-speed skiers to slow twisting falls while standing in lift lines. Last year well over 100,000 skiers visited Wisp slopes. Accident injuries totaled 272, far below the national average. The difference may be attributed to the constant grooming of slopes and trails by area management.

The average patroller is a person who not only loves to ski, but also is concerned for the well-being of other skiers. A patroller must ski well and demonstrate the ability to bring a loaded toboggan safely down the steepest slope of the ski area.

Advanced Red Cross first aid is the basic emergency care requirement. Additional skills in dealing with cold weather problems also are stressed in the annual two-day refresher required by the National Ski Patrol system. Wisp Patrol presently has 10 EMTs, 2 of whom are CRTs; one physician; and 3 dentists in its 25-member patrol. All members must complete a skills card each season, as well as demonstrate proficiency in evacuating skiers from chair lifts by sling and rope. Wisp Patrol is assisted by members of Oregon Ridge Metropolitan Patrol, Baltimore.

Once a person has completed his candidacy which usually lasts a year, he may wear the rust-colored parka with yellow cross of the National Ski Patrol System. He skies free, and after two years his wife and children are issued season passes as a fringe benefit of his endeavors.

—Robert B. Sincell

Region I

Dr. Gina Glick, area hospitals, and EMTs who have served more than five years recently were honored at Region I's annual awards dinner.

Dr. Alasdair Conn, the featured speaker at the dinner, congratulated the region on its 10th anniversary. "You have an extremely successful system in Region I. This anniversary is something you should be proud of. And I'm here to congratulate you from the state level."

A pioneer in emergency medicine in Region I and in the state, Dr. Glick was recognized for her many contributions to EMS. Dr. Frederick Miltenberger, medical director in Region I, described her as an unsung hero who has worked hard for prehospital medical care, the poison control center, advanced life support, and the training of prehospital personnel. Dr. Glick, who was president of the Region I EMS Council and chief of anesthesiology at Sacred Heart Hospital in Cumberland, moved to Dallas in January where both she and her husband are now practicing medicine.

Certificates of appreciation were presented to area hospitals. The following individuals accepted on behalf of their hospitals: Sharon Koeh, Frostburg Community Hospital; Dr. Daniel Miller, Garrett Memorial Hospital; Dr. Daniel Kohn, Memorial Hospital; and Dr. Ragaa Fadl, Sacred Heart Hospital.

Forty-one EMTs and CRTs received certificates for having served more than 10 years and 136 received certificates for having served between 5 and 10 years.

After reading a letter of the wife of an accident victim that thanked and praised those who cared for her husband, Dr. Miltenberger concluded the banquet on the note that the letter "capsulizes my feelings. I really think of you all as good samaritans, and when I think of all the efforts put in, I am impressed."

— Dave Ramsey, (301) 895-5934

Region II

On Sunday, December 11, 1983, at approximately 11 am, the Frederick County Central Alarm received a call to respond to Myersville Elementary School for an explosion. Gas-fired boilers and tanks located next to the cafetorium had exploded. Of great concern was a community meeting that was being held at the school that day.

Emergency crews were alerted and ready to respond, although unaware of what was before them. When the Myersville emergency crew and fire chief arrived at the scene, they were greeted by moans, wails, and screams coming from the cafetorium. Due to an electrical power failure, there was total darkness. A residual-type fire was quickly doused by rescue personnel, and emergency lighting established. More than 50 men, women, and children lay on the cafetorium floor covered with concrete blocks, ceiling tiles, and other debris.

Myersville Volunteer Fire Department initiated triage and, as soon as the size of the incident was determined, placed a call for assistance in both counties. Fire and ambulance personnel from the surrounding companies of Wolfsville, Middletown, Smithsburg, Community Rescue Service of Hagerstown, Civil Defense of Hagerstown, Mt. Aetna, and Boonsboro responded. Victims of the explosion had burns, impaled objects, blunt trauma, eye and ear injuries, and even some amputations. Victims were stabilized and transported to either the areawide trauma center at Washington County Hospital or to Frederick Memorial Hospital. Due to a shortage of ambulance and rescue personnel, rescue trucks and school buses were pressed into service. Both hospitals activated their disaster plans and coped with the flow of the injured into the emergency departments.

Sounds horrible doesn't it? Fortunately this was a drill and not the real thing. It was conducted for the hospitals to complete their annual certification requirements for accreditation and as an educational process for the fire and ambulance personnel in both counties.

Myersville was selected because it is located midway between Hagerstown and Frederick. The exercise was coordinated by committee action of the various providers under the leadership of Dr. Harold Jenkins of Frederick Memorial Hospital and Dr. Hugh Hill of Washington County Hospital. Emergency nursing supervisors Barbara Walters, RN and Mary Beachley, RN were responsible for obtaining drill evaluators.

The victims were volunteers of the Middletown High School drama club, students and parents of the Myersville Elementary School, and community volunteers. Even the principal of the elementary school, Roy Okan, was pressed into service as a stretcher bearer. EMT/CRT instructor Jay Frantz, of Hagerstown, assisted by Chuck Wood of MFRI and his wife Norene moulaged the more than 50 victims in the 2 hours prior to the incident.

During this incident, there were numerous ambulance calls for actual automobile accidents and other real medical emergencies. Two school buses were volunteered for the mass transport of the low-priority injured to the two hospitals. The weather was marginal for the Maryland State Police Med-Evac helicopter and, had the incident been real, 3 Army Huey helicopters stationed at the Hagerstown airport could have been on the scene within 10 minutes.

Volunteers videotaped the drill at the scene as well as at Frederick Memorial Hospital. The Washington County Board of Education edited the videotapes for a package presentation so that the exercise can be used for training sessions.

Plans for the drill began in November. Chuck Wood provided a three-hour program on disaster management and triage at the Myersville Fire Hall several days prior to the drill. Although very apprehensive about an exercise of such magnitude, the more than 50 fire, rescue, ambulance, and fire police personnel who responded to the scene, performed well. Walkersville Community Ambulance personnel took station near the scene to provide coverage for any real medical emergency that might occur.

A critique of the exercise was held on December 20 and plans are already underway for another drill this spring.

—Mike Smith, (301) 791-2366

Dave Ramsey, Gina Glick, MD, and Alasdair Conn, MD at awards dinner.

Region V

Medic 10, the nontransport medic unit, began limited CRT service in St. Marys County this summer. Shown here are Medic Chief Gary Gardner, Acting Medical Director Patrick Jarboe, MD, and the crew of Medic 10. Medic 10 was named after the 10 CRTs who completed the first CRT class.

During the Region V EMS Advisory Council meeting on January 10, regional funding priorities for both federal block grants and DOT highway safety funds were established. Advanced life support designation was also a major topic discussed. A subcommittee was formed to study the questions of minimum standards for ALS designation and authority for designation in Region V.

In December, CRT classes were completed for Montgomery, Charles, and St. Marys counties. Congratulations to all those new CRTs. Another CRT class is ongoing in Prince Georges County.

— Marie Warner, Ed Lucey
(301) 773-7970

Local Court Rules on EMT Fraud

According to the Insignia Registration Law of Maryland, it is unlawful to copy or wear a badge without the permission of the issuing agency. Recently a man appeared at several accident scenes in Region IV wearing a stolen EMT patch and carrying a forged card. Within a few weeks, he was arrested, charged under this law, and is currently on probation for one year.

"In late fall I received several calls about a man showing up at accident scenes and claiming to be a member of several companies. When his alleged affiliations kept changing, other EMTs grew suspicious and called in," said Marc Bramble, Region IV administrator. Mr. Bramble contacted Peninsula General Hospital and the Maryland State Police aviation division in Salisbury, and shortly thereafter state troopers saw the man described by Mr. Bramble at an accident scene and seized him.

In this case, the man had applied for, but never completed certification procedures and had obtained a jacket and card from an EMT who left the state. "If field personnel become decertified but still wear the patch, badge fraud could become an issue," Mr. Bramble said. "So we encourage Maryland providers to inform their regional administrators if they suspect someone is wearing a patch illegally."

Ron Schaefer, MIEMSS associate director of prehospital education and training, hopes peer pressure will keep incidences of badge fraud at a minimum, as it did in the case cited above. "There is an esprit de corps among EMTs and CRTs which explains why the incident in Region IV was reported and solved so quickly," he noted. "No one wants someone who is not an EMT wearing their emblem." He recommends that you get to know fellow care providers and make a note of any crew members on the scene whom you do not recognize; remove badges and return cards if you do resign; and report any suspicious persons to the regional administrator immediately.

—Rochelle Cohen

Electrical Converters Cause Radio Static

When ambulance companies purchase AC/DC converters or other electrical devices for their vehicles, they run the risk of developing radio communication interference, says Miguel Sanchez, chief of maintenance and development in the MIEMSS communications program. These devices may be necessary for the operation of some of the ambulance's equipment (such as the neonatal isolette) but, when attached to a vehicle's alternator circuitry, they may cause a "ripple" effect in the vehicle's battery wiring.

"If an ambulance company wishes to purchase such a device," he says, "it should buy a high-quality unit that has less chance of developing noise or ripple." He stresses that MIEMSS does not underwrite the cost of repairing the unit, or correcting its installation to remove noise generated in the radio system as a result of poorly engineered "non-communications" equipment.

"Our maintenance contractors are aware of this position," says Richard Neat, director of EMS communications. "However, ambulance companies frequently advise our contractors to proceed with such repairs, not realizing that they will receive a bill for such services. It is the customer's responsibility to inquire about billing arrangements for any work they authorize beyond EMS radio system routine maintenance."

—Elaine Rice

Bretylium Approved For Use in Region V

The State Board of Medical Examiners has approved the use of bretylium within Region V. By this approval process, they are also allowing other regional programs to add bretylium to their ALS units provided the programs can demonstrate that an appropriate education and quality assurance program is in place in the region.

Regions that wish to consider using bretylium on ALS units should either contact their regional medical director directly or work through the regional council and the local EMS administrator to initiate discussion on this issue.

—Alasdair Conn, MD
Medical Officer, Field Programs

Computer Stores, Displays Patient Data

Editor's Note: As both prehospital and hospital personnel know, the diagnosis and treatment of a multiple trauma victim are complicated tasks. At the MIEMSS Shock Trauma Center, physicians and nurses are being assisted in this task through the recent implementation of a computer system for storing, retrieving, and evaluating patient data. MIEMSS researchers will also use data collected to develop more effective therapeutic interventions. In addition, the patient data in the center's clinical computer system is used, along with the ambulance runsheet data that is stored in the MIEMSS trauma registry, to evaluate the delivery of emergency medical care in the field, as well as in the hospital. The clinical computer system that was developed at the Shock Trauma Center has served as a model for similar systems that have been installed at other hospitals. The following article explains how the system works.

Keeping patient records on paper has become archaic. The process is time-consuming and prone to error. For trauma patients, many of whom have long hospital stays, it is also unmanageable.

That is why MIEMSS has developed a computerized system for storing and displaying patient data. The computer system's proper name is Quantitative Sentinal, but it prefers to be called by its nickname, QS.

QS is extremely talented, as I found out recently when I interviewed him. My first astute question to him was, "What can you do?"

"Well, I keep the results of laboratory tests . . . on blood and urine samples, for example. I also know the vital signs of some patients," said QS.

"How do you get that information?" I inquired.

"The technicians in the Clinical STAT Laboratory send me the information from the terminal they have. Other patient data, such as vital signs, are given to me by the physicians and nurses in the patient units," he said.

"Why couldn't data clerks give you the patient data?" I asked.

"Time and accuracy," QS shot back. "By having the clinicians and laboratory technicians enter their own data, the data can be available for evaluation sooner and the chances for making mistakes are lower."

"There must be a better way," I insisted.

"Well, you're right. There is," QS admitted. "I wasn't going to mention it because the system hasn't been implemented fully. But the latest development is that transmitting devices have been added to the monitors in the critical care recovery unit, permitting me to get the vital signs of the patients in that unit directly from the monitors. Eventually the bedside monitors in all of the nursing units will be able to communicate with me directly. Even then, however, clinicians will have to provide me with the data they obtain from their personal assessments."

"Do the clinical people have problems learning how to use the terminals?" I asked.

"No. I'm easy to talk to. Of course, anyone using a terminal in one of the nursing units cannot hear my voice, so I communicate with them by printing messages on the screen of the terminal. Have a seat at that terminal beside you and I'll show you how to request a chart from me," said QS.

"This one?" I asked, pointing to a machine with a TV-like screen and keyboard that looked like a combination typewriter and telephone key pad.

"That's right. Now you're a journalist, so you know how to type — right?" QS continued.

I shook my head in agreement.

"Well, you're more talented than you have to be to work this terminal," QS remarked dryly. "You only have to know a few numerical codes to tell me what you want me to show you, and if you forget them, I will remind you what they are and what to do by writing instructions on the screen," he said. "Are you ready?" he asked.

Again, I answered affirmatively.

"OK, turn on the monitor and type HELP. I will make believe that you are at a terminal somewhere else in the center and will start communicating with you by writing on the screen," QS said before becoming silent.

I did what he told me and immediately QS' first message to me appeared on the screen.

IF YOU ARE NEW TO QS, YOU MAY WISH TO TYPE IN "INSTRUCTION" TO GET DETAILED INSTRUCTIONS ON HOW TO USE THIS SYSTEM.

QS led me through the steps that are necessary for a novice to learn how to request data on a patient. The process is much shorter for anyone who has memorized the basic command and data codes. Anyone knowing the codes can retrieve patient data in a fraction of the time it took me. QS gave me the choice of looking at several categories of data: laboratory test results, and measures of cardiac, respiratory, and renal function.

I selected cardiac data and asked QS to show me, in chart form, the most recent data he had on Marilyn S. Trama, who had been admitted two weeks earlier. I did that by looking up the codes for data retrieval, cardiac data, and tabular display in the master list of codes. Then I typed in those numbers, after having entered Ms. Trama's history number on the telephone-like key pad.

Immediately, a chart came on the screen, showing cardiac function data for the last four days of Ms. Trama's hospital stay. Some of the items in the chart were physiologic indicators of health, such as heart rate, blood pressure, and pulmonary artery pressure. These indicators were measured directly from Ms. Trama. The chart also listed health indicators, such as the left ventricular stroke work index, that were calculated from the patient's physiologic indicators.

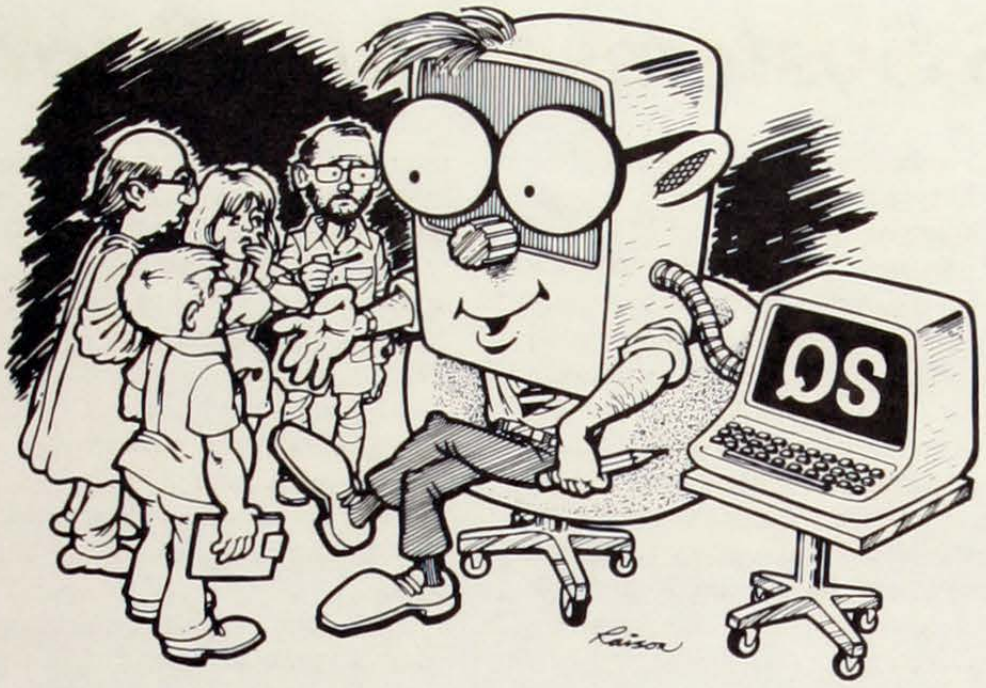
"Calculations of this sort are involved and can take a lot of time for human beings to do, but not for me," QS boasted to me later, when I had finished working at the terminal. "Performing these calculations is one of my most important functions because they aid clinicians in making a more precise diagnosis than they could without them," he said proudly.

"For example, a low heart rate tells the clinician that the patient's heart is malfunctioning, but knowing the stroke work index of the left ventricle helps to pinpoint the problem. The drug of choice for raising the stroke work index may be different from the drug that should be used to manipulate other aspects of heart function," he explained.

"I can also calculate the correct drug dosages for each patient, based on his or her physical and physiological characteristics," he added.

The chart showed the values for all health indicators and the times at which they were measured or calculated. The most recent data were presented last. However, I discovered that QS will present the information in the reverse order, or for any interval during the patient's hospital stay. I also learned that QS can display the data in graph form.

I told QS I wanted to see a trend of the most recent blood pressure readings on



Ms. Trama. Presto, QS drew a line graph on the screen, showing a range of pressures down the left side and recording times along the bottom. The graph covered a four-day period.

DO YOU WANT TO SEE BLOOD PRESSURE READINGS DURING A DIFFERENT INTERVAL?

I told QS that I did and specified the first four days after admission. Instantly, the old graph dissolved and QS busily constructed another line graph.

DO YOU WANT TO FOLLOW THE FLUCTUATION IN THIS PATIENT'S BLOOD PRESSURE FROM THIS POINT FORWARD?

Yes, I responded. Every time I pressed the code for "Roll," the line graph took a new form and the time line at the bottom advanced until the original graph, showing the most recent data, reappeared on the screen.

DO YOU WANT TO SEE ANY OTHER DATA? YOU MAY SELECT UP TO SIX PATIENT VARIABLES. (A variable is another word for health indicator.)

I took QS up on the offer. I asked to see trends of Ms. Trama's heart rate, cardiac output, central venous pressure, and average and wedge pulmonary artery pressures, in addition to the blood pressure trend. In no time at all, six trends appeared on the screen, overlapping each other. The graph did not show actual measurements of each variable, but how the variables fluctuated relative to each other.

According to QS, the value of this kind of graph is that the clinicians can find out if the variables they request to see are fluctuating in unison with each other — either in the same direction or in opposite directions. This information tells the clinician that therapeutically altering a variable that is associated with other variables will also affect those associated variables.

Even though QS drew each of the six lines on the graph differently to help me tell them apart, I found it difficult to follow where each line was going. When I mentioned this problem to QS afterwards, he said: "I know what you mean, but it's not my fault. I'm limited by the terminal you were using, which can only display graphs in cathode-ray green. But we've solved the problem, at least in the critical care recovery unit, by installing a terminal that displays graphs in up to six colors, making the graphs easier to read," said QS.

DO YOU WANT A PRINTOUT OF THIS GRAPH?

Yes, I responded. I was startled when, suddenly, a machine sitting on a table next to the terminal began whirring and tapping frantically. It was a printer, making a paper copy of what appeared on the screen of the terminal.

After signing off the terminal, I complimented QS on his versatility in displaying patient data.

"Thank you. I try to be as flexible as I can in accommodating the varying needs that clinicians have for looking at patient data. If they want to check quickly on the current status of a patient, they consult the charts, which present the data in a well-organized, standard format. But if they want to study the patient's condition more closely, they look at the graphs. Unlike the charts, the graphs show trends in, and relationships between, various indicators of health. That's not the whole story, though," QS hastened to add. "You haven't asked me what the data are used for," he said.

"That was going to be my next question," I replied.

"I have already touched on one of the most important uses of my data: to aid clinicians in making diagnoses. When clinicians see evidence that a particular treatment is having the desired effect, they know they have diagnosed the problem correctly. If it is not, they can revise their diagnosis and prescibe a new treatment," said QS.

"The printouts of the charts and graphs are used by the clinical staff for rounds, shift reports, conferences, and publications. They are also used in discharge processing. In addition, my charts soon will be used as the patient's permanent medical record," QS continued.

"Finally, our researchers use my data to conduct studies on the patients admitted to the center. I also give some of my data to another computer that keeps a statewide trauma registry. Presently, the registry is used to evaluate, and thereby improve, the utilization of EMS resources from prehospital treatment to final disposition," he said.

As I stood up to leave, I told QS that I thought he will be a great help to MIEMSS clinicians and researchers in managing patients and finding out how to manage them better.

"Thank you again," he said, "I couldn't have said it better myself."

— Dick Grauel

Nursing Workshop/ Russian Tour Slated

An international workshop on trauma, resuscitation, and stabilization — a nursing continuing education/travel program — will be presented by MIEMSS, from May 19 to June 2. While traveling to Moscow, Kiev, and Leningrad, participants will visit leading health centers and hospitals and participate with Russian colleagues in a mutual exchange of knowledge.

Carole Katsaros, trauma nurse coordinator for the MIEMSS field nursing program, will present the following topics: priority setting for trauma (preparedness and assessment); autotransfusion for trauma; open emergency thoracotomy; trauma and different age groups; and a multidisciplinary approach to trauma.

The program is approved for 25 contact hours for nurses through MIEMSS field nursing program, which is approved as a total program of continuing education by the Eastern Regional Accreditation Committee of the American Nurses Association.

Travel arrangements and coordination of the educational program are being handled by the International Professional Meeting Coordinators.

For information, contact Patricia McAllister at MIEMSS (301) 528-2399.

Evaluating EMS Systems: Injury Scores

Editor's Note: In part 3 of this series on evaluating Maryland's EMS system, we examine why injury severity scores are important and how they could be used to evaluate the effectiveness of the system.

Why are injury severity scores important to EMS evaluation?

The statistical reports produced for prehospital care providers, and the statistical summaries generated for the areawide trauma centers and the Shock Trauma Center merely ***describe*** EMS activity, says Mark Moody, PhD, former director of evaluation and analysis for MIEMSS.

Although this statistical information is useful, and probably will become essential to development efforts, there is a definite limit to its value for EMS evaluation. To ***judge the effectiveness*** of the Maryland EMS system, the data in the MIEMSS Trauma Registry must be analyzed, using various statistical procedures, he explains.

The difference between ***descriptive*** statistics and ***analytical*** statistics is similar to the difference between simply reporting facts in a news story and interpreting the meaning of those facts in an editorial.

An important tool that will be used in the analysis of EMS data will be injury severity scores. Their importance in EMS evaluation may become clear by keeping the following equation in mind:

results = treatment(s) + severity of injury.

All evaluation studies involve the measurement and analysis of results or outcomes. In EMS evaluation studies, the outcome may be survival, number of complications, or length of hospitalization, to name a few.

Neither the severity of injury, nor the treatment given is sufficient to determine patient outcome. As a practical matter, treatment cannot be left out of the equation because treatment is never withheld from living patients. Furthermore, injury severity cannot be left out of the equation because the severity of injury may be so great that no treatment would make any difference in the outcome.

Since the severity of injury must be taken into account when interpreting the results of an EMS evaluation study, injury severity scores will increase the integrity of such studies. For example, a study might be conducted to find out what effect a new surgical procedure has on the survival rate of patients with blunt abdominal trauma.

Since the severity of abdominal injury also influences patient survival, the effect of this factor must be eliminated to ensure that comparisons between the results obtained at different areawide trauma centers reflect only the effect of the treatment given.

Otherwise, any difference in survival rates between centers might be interpreted to mean that the procedure is not being used effectively at a trauma center with a low survival rate. In fact, however, it may mean that a greater number of patients who had little or no chance of surviving were admitted to that center.

Injury severity scores can be used to "equalize" two or more groups of patients in terms of severity of injury for the purpose of comparing their outcomes in a particular study.

In this respect, injury severity scores can be used like handicap scores in bowling, which put bowlers of different ability on an equal footing to ensure a fair comparison between their bowling scores in a particular game. In this case, the effect of bowling ability on the outcome of the game is eliminated.

A related study could be conducted to find out whether the survival rate of patients with blunt abdominal trauma improved after the new surgical procedure was implemented at one particular trauma center. This time, the comparison is between survival rates before and after the new treatment was used.

The experience with the previously used treatment may be that patients with a clinical triage score of 10 had little or no chance of surviving. If the new surgical procedure improved patient outcome, the number of survivors with an injury severity score of 10 would be greater than it was before the procedure was used, Dr. Moody says.

This same experimental design could be used to determine the effect of any change that is designed to improve the EMS system, as well as any change that becomes necessary for political or economic reasons. An example of the latter is deciding where to cut the budget in fiscally difficult times without adversely affecting patient care.

Other potential uses of injury severity scores, besides improving the integrity of formal studies, are monitoring patient triage and discovering the need for improving treatment or training.

Under the echelons of emergency care, patients are taken to either the closest hospital emergency department, an areawide trauma center, or a specialty referral center, depending on a number of diagnostic criteria. One major criterion is severity of injury.

Currently, injury severity is defined in qualitative terms, such as "life-threatening injuries to two or more systems of the body." The problem with qualitative terms is that their use involves a certain amount of subjective judgment, which can result in errors in patient triage, says Dr. Moody.

Severity injury scores, which are based on objective physiological or anatomical measurements, may lend more precision to the patient triage decision process and result in fewer triage errors, he says.

By using a standard, quantative measure of injury severity, it also would be possible to monitor whether triage protocols are being followed within a particular EMS region over time, or in different regions at any particular point in time, he adds.

The need for changes in treatment or training might be indicated by a surviving patient with a high injury severity score or a deceased patient with a low score. All such patients should be studied to "find out what was done correctly or incorrectly," Dr. Moody says.

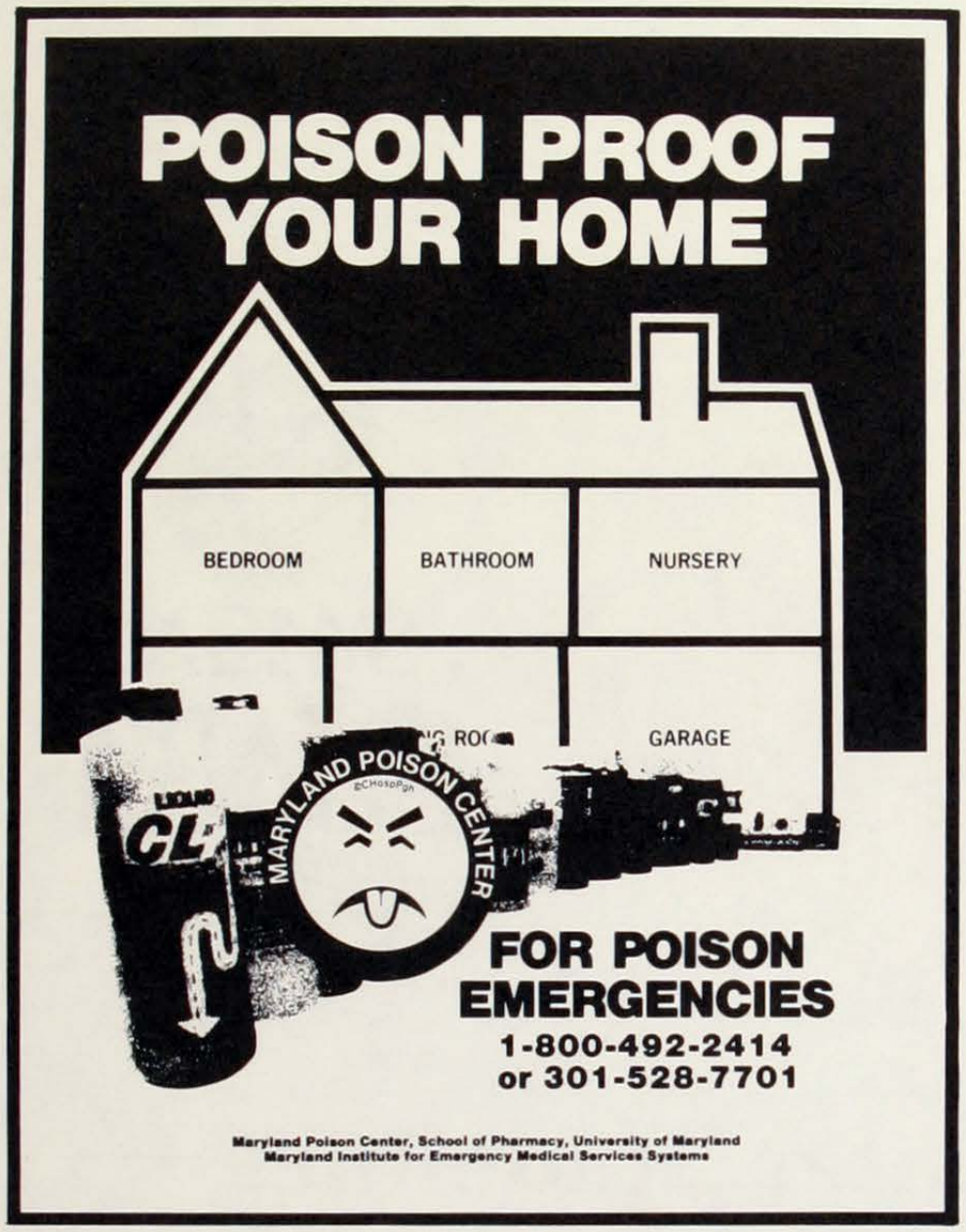
According to Dr. Moody, one of the reasons that a patient with a low severity score may not survive is that the wrong treatment was given, or that the proper treatment was given incorrectly. In this case, a training deficiency exists and could be corrected by retraining the prehospital care provider involved, modifying the training program, or both.

On the other hand, the correct, accepted therapy may have been administered skillfully, but the patient did not survive because the treatment was inadequate in a particular situation, says Dr. Moody. For example, MAS trousers are applied to patients in shock to increase their blood pressure. However, patients with inadequate oxygen perfusion to the body's tissues may not respond to this procedure. In this case, the treatment procedure needs to be revised to allow for an unusual medical situation. This change, of course, also should be reflected in the training program.

These are just a few of the many potential uses of injury severity scores. But the use of injury severity indices in EMS evaluation resides in the future. Much analytical groundwork remains to be done before injury severity indices can be put into practice, says Dr. Moody. Considering the promise that injury severity indices hold for EMS evaluation, however, he says the future cannot come too soon.

— Dick Grauel

Poison Prevention Week: March 18-24



Poison-proof your home. This is the most important activity you can perform to prevent an accidental poisoning. It is also the theme of a new poison prevention campaign being launched by the Maryland Poison Center in conjunction with National Poison Prevention Week (March 18–24, 1984). In keeping with this theme, the campaign slogan is "children act fast . . . so do poisons."

During the campaign, a new television public service announcement developed by MIEMSS will be shown. The spot points out that poisons can be found in almost any room of a house (not just the kitchen, bathroom, or basement) and that items an adult may not consider poisonous could still be harmful if a small child ingested them.

The educational focus of this new campaign is geared to active poison prevention—a room-by-room search for hazardous items that may cause poisoning if used improperly or taken by a child or pet. A checklist to help with locating potentially harmful items also has been developed. Ideally, active poison-proofing will include: (1) identification of potentially harmful items with MR. YUK stickers; (2) a physical check of each item to see if it is properly closed; and (3) a review of the product's label to see that it is stored properly.

For a Poison Prevention Week poster or checklist, contact Jacquie Lucy at the Maryland Poison Center (301) 528-7184.

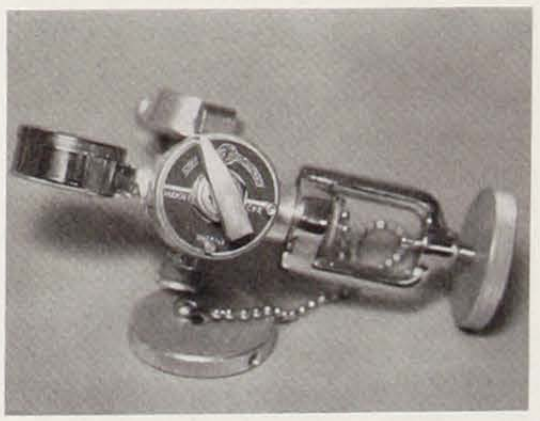
AA County Considers Oxygen Regulator Unsafe

Editor's Note: The following was brought to our attention and is reproduced with permission. We are sharing it with our readers so that they can consider the information when buying new equipment. For further information, readers should contact Lt. Michael F. X. O'Connell, Jr., (301) 987-4010.

The Stephenson Industries regulator is not considered to be sufficiently safe or risk free. Thus, Anne Arundel County will no longer be responsible for its use in any circumstance. The reasons for this decision are based on the below listed reasons.

1. Selector ability — the use of a positive-pressured, oxygen-powered device is prohibited on resuscitation of infants and children. According to the 1981 advanced cardiac life support manual of the American Heart Association, "Oxygen-powered breathing devices: oxygen-powered breathing devices should not be used in infants and children." Since the feature [infant/midget setting] is on the Stephenson Industries regulator, the possibility exists that it could be utilized. Also a potential problem — the regulator could be set on infant/midgets setting while attempting to ventilate an adult. This would result in the hypoventilation of the patient.

2. The yoke assembly does not have the male "pin-index safety system for compressed gas system." This system, which is an industry-wide standard, provides different safety pin configurations to prevent a compressed gas of one type (for example, nitrous oxide) from being used with another type regulator (for example, oxygen). Since the Stephenson Industries regulator unit is without the pins, it could be put on any cylinder with a valve/stem unit. It should be noted that without a safety pin index the regulator fails to comply with I.C.C. regulations.



Although the Stephenson Industries regulator has an infant/midget setting, it ***should not*** *be used because a positive-pressured, oxygen-powered device is prohibited for resuscitating infants and children. The setting also swings freely, so that it could be set inadvertently on the infant/midget setting while an adult is being resuscitated, resulting in hypoventilation.*

Maryland
EMS
NEWS

Published monthly by the
Maryland Institute
for
Emergency Medical Services Systems

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

Director: R Adams Cowley, MD
Editor: William E. Clark,
(301) 528-7800
Managing Editor: Beverly Sopp,
(301) 528-3248

Address Correction Requested
7215 Rolling Mill Rd., Baltimore, MD 21224

Hand Center Guidelines

The Raymond M. Curtis Hand Center at the Union Memorial Hospital in Baltimore is one of the specialty referral centers of Maryland's statewide EMS system. From time to time, questions have arisen as to what kinds of extremity injuries constitute appropriate referrals to the Union Memorial Hand Center. A comprehensive protocol including medical, communications, and transportation guidelines is being developed so that patients needing this facility can benefit from this resource in an optimal time. In the meantime, representatives from MIEMSS and the Union Memorial Hand Center have met to develop this article to clarify the types of patients who can benefit from direct field referral to the Union Memorial Hand Center.

Major upper extremity trauma continues to be an indication for considering referral to the Union Memorial Hand Center. A patient with a major upper extremity injury or with a complete or incomplete amputation should be considered for referral, providing this is an isolated injury in a stable patient. Results and progress in the field of upper extremity salvage have been considerable in recent years.

A patient with a degloving or major crush injury to an extremity can be an appropriate candidate for referral, if it is the patient's isolated injury. In general there are few indications for reimplantation of the lower extremity due to the risk to the patient as compared to the potential benefit. Clean-cut amputations at the level of the foot in a child are candidates for referral. Clean-cut amputations at the level of the ankle in either a child or adult may be candidates for referral. Amputations above the level of the ankle are candidates for referral since there is an occasional case where the part can be reimplanted or sometimes converted from an above-knee amputation to a below-knee amputation in order to preserve a knee joint. ***Most toe injuries caused by lawn mowers are candidates for neither microsurgery nor referral.***

The major contraindication to referring the patient to the Union Memorial Hand Center is twofold: (1) a patient with a complete or incomplete toe amputation does not need to be referred to this center; (2) a trauma victim with unstable vital signs or other major or significant trauma should not be referred to the Union Memorial Hand Center but should be referred to the appropriate trauma center.

We appreciate that it may be extremely difficult to adequately assess a patient's extremity injury and make the judgment as to appropriate referral. If in doubt about a direct field referral, do not hesitate to obtain consultation either from the Union Memorial Hand Center or from the appropriate trauma center.

Traumatology and microsurgery have made tremendous strides in recent years. Remember: saving lives comes first and saving limbs comes second.

Shaw Wilgis, MD
Union Memorial Hand Center

Ameen I. Ramzy, MD
MIEMSS, Shock Trauma Center & Field Operations