The Test Tone Protecting the Heart of Vermont

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Vermont EMS District 6

Inside this issue:

Load & Go? Stay & Play? How Long is Too Long On Scene?

On-scene times are often a topic of controversy. How long really is too long?

What is a way to think about on-scene times that makes sense? Like most topics in medical care, the thinking has changed over the years.

Before modern EMS, when little if any care could be delivered outside the hospital, there was great emphasis on getting off the scene quickly and rapid transport to the hospital. As one old ambulance man said, "The most important thing in this ambulance is the gas pedal!"

When the first EMT's came along in the late 1960's, things changed. Able to do something for the patient besides transport, the "need for speed" diminished. In my first EMT course in the mid-1970's, we were taught that "Load & Go" was something that untrained "ambulance attendants" used to do in the bad old days. As EMT's, we were expected to treat problems before transporting the patient. "Stabilization Before Transportation" was the word. We learned to "do things right", and not to rush.

In the 1980's, with the development of trauma centers and the concept of the "Golden Hour", renewed emphasis was placed on getting multi-trauma patients to definitive care rapidly. There was more than one story about multi-trauma patients who arrived at the ER after a prolonged stay on scene with "every limb splinted, every laceration dressed, every strap buckle oh-so-carefully padded", but in profound decompensated shock "with no BP and all his blood volume in his belly." Rapid extrication and expedited transport of multi-trauma patients became the thing to do.

More recently, with the development of thrombolytic drugs and then the increased use of cardiac catheterization in the treatment of acute MI, "Time is Muscle" has become the motto. When a patient has an MI, the more quickly he can get thrombolytics and/or cardiac catheterization, the better his outcome. With the use of thrombolytics and interventional radiology to restore blood flow in a blocked cerebral artery, CVA's have become time-sensitive as well.

So, all things considered, the shorter the time we spend on scene, the better. However, we should not be compromising the care we give by rushing and being sloppy. Like most things in EMS, it's a balance that requires judgment. The goal is not to blindly adhere to one school of thought or the other, but to do what best meets the needs of the individual patient. Sometimes "Load & Go" will be the thing to do, other times "Stay & Play" will best address the patient's needs. The point is to be thoughtful, and do what you decide to do for good reasons.

A patient with blunt chest trauma from a motor vehicle accident who's short of breath and shocky needs to get going. Do what you need to do on the scene and do the rest enroute. On the other hand, a patient with no injuries besides an isolated tib-fib fracture that's tenting up the skin and who needs to be carried up a bank will benefit from a few minutes of extra careful splinting and immobilization.

It's easy to lose track of time on the scene. Lots of things are happening, and it's easy to all of a sudden look at your watch and think, "Damn! We've been here for half an hour! How'd that happen?" You need to keep a clock ticking in the back of your mind, and realize that the time you may be wasting is the

Trauma and Pregnancy
By Mark Podgwaite

Trauma has become the most frequent cause of maternal death in the United States. Although maternal death due to other causes such as infection, hemorrhage, and hypertension has declined over the years, the number of maternal deaths due to penetrating trauma, suicide, homicide and motor vehicle accidents has risen significantly. According to several recent studies accidental injuries occur in 6 to 7 % of all pregnant patients. Penetrating trauma accounts for as many as 36 % of maternal deaths. These same studies indicate that in the case of gunshot wounds to the abdomen overall maternal mortality is low (3.9 %) but fetal mortality is high, ranging between 40 and 70 %.
Regardless if the patient is pregnant or not, we need to keep the basics in mind; airway, breathing, and circulation. If we do not have any of these 3, we do not have a patient. Or in this case, we may not have 2 patients- mom and her unborn child. In order to treat our patient effectively, we need to have a general understanding of what makes the pregnant patient different.
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Trauma has become the most frequent cause of maternal death in the United States. Although maternal death due to other causes such as infection, hemorrhage, and hypertension has declined over the years, the number of maternal deaths due to penetrating trauma, suicide, homicide and motor vehicle accidents has risen significantly. According to several recent studies accidental injuries occur in 6 to 7 % of all pregnant patients. Penetrating trauma accounts for as many as 36 % of maternal deaths. These same studies indicate that in the case of gunshot wounds to the abdomen overall maternal mortality is low (3.9 %) but fetal mortality is high, ranging between 40 and 70 %.
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Pregnancy offers the following basic physiological changes:

Systolic blood pressure	Decreased by an average of 5 t o15 mm Hg
Diastolic Blood Pressure	Decreased by 5 to 15 mm Hg
Electrocardiogram	Flat or inverted T waves in leads III, V1, and V2; Q waves in leads III and aVf
Blood Volume	Increased by 30 to 50 percent
Respiratory Rate	Increased by 40 to 50 percent
Oxygen Consumption	Increased by 15 to 20 percent at rest
Diaphragm	Higher position in pregnancy, consequently chest tubes would need to be placed one or two interspaces higher.

Additionally, as illustrated below, the length of pregnancy (or how far along the pregnancy is) also dictates the severity of the side effects of the trauma which will be suffered by the fetus.

Trauma and Pregnancy Cont'd

During the first trimester, the uterus is protected within the pelvic bones. Trauma during this time will either be so severe as to cause a miscarriage (spontaneous abortion), or else it will have no effect at all. Miscarriage is a common event, normally occurring in one out of every 5 or 6 pregnancies. While trauma can cause 1st trimester pregnancy loss, it is very rare when compared with other causes of miscarriage. For purposes of this discussion, significant trauma includes injuries such as hemorrhagic shock, multiple compound fractures as well as liver and spleen ruptures or injuries so sever they result in maternal death. Significant trauma during the first trimester is often associated with subsequent miscarriage.

Minor trauma includes bumps, bruises, fractures of the lesser bones, minor burns, etc. While such non-catastrophic injuries may be serious enough to require treatment, they are not associated with miscarriages.

Trauma occurring during the second and third trimester has different clinical consequences than during the first trimester. Minor trauma is not usually threatening to the pregnancy during the first trimester. However, during the second and third trimester, even relatively minor trauma can have significant adverse effects on the fetus. These adverse effects include placental abruption, pre-term labor, premature rupture of the membranes, uterine rupture, and direct fetal injury.

In cases of any trauma associated with the pregnant patient we may see the following: Rapid acceleration, deceleration, or a direct blow to the pregnant patient's abdomen can cause shearing of the placenta away from its' underlying attachment to the uterus. When this happens (placental abruption), the detached area will bleed and that same area of the placenta will no longer function to supply oxygen to the fetus. A complete abruption is a very serious life-threatening event for both the fetus and the mother. Partial placental abruptions may range from insignificant – no interventions needed, they will take care of themselves - to major incidences with noticeable abnormalities as seen in complete abruptions. Premature labor may be provoked. In these cases, regular uterine contractions begin shortly after the trauma (within 4 hours) and progress steadily and result in delivery. Premature rupture of the fetal membranes can also occur, within the first 4 hours of injury and usually result in a premature delivery. Direct fetal injury may occur, resulting in contusions, fractures or fetal death. Uterine rupture can occur and usually result in the loss of the fetus.

The severity of the maternal injury may or may not have a direct impact on the frequency of adverse pregnancy outcome. Even minor trauma can have very serious consequences for the pregnancy. The adverse effects, when they occur, are immediate (within the first few days of the trauma) and include: Placental abruption within the first 72 hours of injury. Rupture of membranes within 4 hours of injury. Onset of labor within 4 hours of injury that resulted in delivery during the same hospitalization. Fetal death within 7 days of the traumatic event. There is probably no increased risk of pre-term delivery, depressed Apgar scores, cesarean section or neonatal length of stay, after excluding the above immediate adverse effects.

Uterine contractions following trauma are common, although premature delivery caused by preterm labor is not. Actual preterm delivery resulting from premature labor (in the absence of abruption) probably occurs no more frequently among patients suffering trauma than the general population.

Pregnant patients present their own unique complications which we in the field must be prepared to deal with. Since we do not see these patients often, we need to keep on top of our game in terms of education and training in dealing with these distinctive patients in order to provide the best possible outcome for both mom and child.

Service Of the Quarter: Williamstown Ambulance

WILLIAMSTOWN AMBULANCE
40 YEARS OF SERVING THE COMMUNITY

In 1968, after receiving notice from the local funeral directors that they would no longer be suppling ambulance services to the town, the members of the Williamstown Volunteer Fire Department got together and formed the Williamstown Ambulance Service. Fourteen members of the Fire Dept., four local registered nurses and an orderly attended and comprised the first ambulance squad. Initially the members were trained in advanced first aid, splinting, and the proper procedure for picking up patients. The ambulance was a 1955 Cadillac that was donated by Goddard College and refurbished by local citizens. This ambulance lasted for 3-4 years before blowing the engine while transporting a patient from a 10-50 on the interstate. In those days there was no communication with the hospital and "load and go" was the operative words for emergencies.

In 1971 Williamstown became the second service in the area, now District 6, to be classified as "Emergency Medical Care" ambulances. The town of Cabot was the first and Mad River Valley had been granted a temporary license as such. This designation was a precursor to a bill that was before the legislature that would eventually reclassify ambulances and push out funeral home services. Only those services with this designation could transport emergency patients. One of the requirements was a HEAR (hospital emergency ambulance radio) radio which enabled the services to communicate with the ER. Another requirement was for all members to have advanced first aid training. During this time Williamstown purchased its second ambulance, a 1969 Cadillac Superior, it too would eventually blow an engine. (Notice a trend here?)

In 1972 / '73 Williamstown sent its first members to a certified EMT class, where they learned skills such as CPR and the Heimlich Maneuver, still a long way from "John and Roy" but very modern and skilled for Vermont. In 1972 Williamstown responded to 45 calls for service from a community of 1800 people.

In the late seventies the town took over the service from the fire department and had a coordinator that was the go between for the select board and the officers and squad members. The squad pretty much governed themselves. By 1980 run volume had increased to 85 calls.

The 1980's saw several big changes in EMS for Williamstown. In 1981/82 we became an "Intermediate Level" service, with "Butch" Bresett, his wife Tina, and the town coordinator Roland Tousignant, becoming our first "I-Techs". Also in 1982 Williamstown purchased its first "new" ambulance a box type Ford 1-ton, at a cost of $28000. This rig serviced the town until 1995.

In 1984 the service broke the century mark for the first time, responding to over 100 calls for the year. The squad also started its first Junior Squad in 1986.

Until 1984 Williamstown's responders were notified by the " plectron or red phone" when there was a call. Residents were advised to call several different numbers, depending on day and time for assistance. Local businesses like Lacillade Lumber, where a number of members worked, was one. The Fire Chief, and his assistant chiefs homes were yet another number to call and if all else failed, you'd call the fire house where after two minutes the departments siren would wail, alerting responders. This antiquated system was replaced in 1984 with pagers and a central receiving and dispatching center known as "Central Dispatch" aka Rinkers Communication. The ambulance and fire department stayed with Central Dispatch until November 1997 when Rinkers stopped dispatching. Since then Barre City has done our dispatching and E911 has become a reality.

The 1990's brought more changes. In 1992 state and federal regulations required members to receive training in blood borne pathogens and Hepatitis B vaccines. The AIDS virus and Hepatitis infection became a reality to all responders.

In 1994 the town purchased its second new ambulance. A 1994 Type III Ford E 350 from Med Tec Corp. This ambulance was replaced as the front line rig in July of 2007, and is serving as the backup and transport rig currently. In July of 2007 the town took possession of a Type III E 450 Ford ambulance, from Road Rescue which should service us into the next decade.

At the same time we also were part of the state wide pilot program for semi-auto defibrillation. All seven EMTs were trained in the use of the First Medic 600 defibrillator, which gave the squad nine members who were able to shock a cardiac patient. In the middle of the night some of us would "shock" any patient! Though the First Medic is still around it has been replaced, in order, by Physio-Control 710 and now a Medtronic 1200. Both of these units allowed us to monitor heart rhythms while transporting.

By 1996 call volume had increased to over 150 calls and the time to oversee the day-to-day operation had increased enough that the town fathers decided to enter into an Intra-local agreement with the Town of Barre, sharing the services of one director, Dave Jennings, between the two towns. Dave not only acted as a go-between for the select board and the squad, but lent his guidance to the service, and saw that the town was covered when the squad was unable to roll.

As is true with all volunteer services coverage and a quantity of members was always a problem since the services inception. The late 1990's and early 2000's proved to be a big concern. Loss of town based businesses and the inability of what businesses were left to let members leave work severely handicapped the service. Even though the numbers of volunteers remained constant, or in some years increased, the availability of daytime coverage waned. Mutual aid calls increased with each year. Often we were able to respond as a fast squad and render aid until another service, Barre Town EMS or Barre City, could arrive on scene and transport the patient.

In 2006 faced with the option of limping along with the status quo or moving forward with the service, the town dissolved the Intra-local agreement and hired a full time paid EMT to staff the ambulance and oversee the day-to-day operation. In the first year the service responded to 304 calls and turned over just 3 due to staffing issues. This change is due in a large part to the dedication of the volunteers Williamstown Ambulance service has been the training ground for many EMTs in the profession. Butch Bresett, Russell Ashe and Jeff Cochran of Barre City, Dan Martin of Lebanon, Tyler Mitchell of Colchester Rescue, Robby Hood at WRVA, Bill Waite of BTEMS and WRVA and Trevor Ashe at St. Michaels College. And who can forget Brian Miller?? All started out as volunteers on a small service in a small town. When- ever members get together, especially with new members around, the stories come out most of them now comical, although at the time of occurrence not so funny. Its the good calls that get retold the most, and the bad are left to distant memories.

The history of the Williamstown Ambulance Service, I think, mimics the history of EMS in Vermont. We may never catch up with "John and Roy" but we will operate in a professional manner and with the most up to date skills and equipment that the state and district will allow.

Load & Go? Stay & Play? How Long is Too Long On Scene? Cont'd

The right amount of time to spend on the scene is the time it takes to do what needs to be done when everyone is working together in an organized manner. If you're at the scene a long time, but every member of the crew spent that time working efficiently to do things that needed to be done before transport, then you weren't there too long.

On the other hand, if you were there too long because things were disorganized or confused, people weren't communicating or working together well, or you ended up spending time doing things at the scene that should have been done enroute, then you need to look at your methods to see how you can become more efficient.

Having one person in charge tends to speed things up. Having a plan as to how calls are handled in general is helpful. If everyone understands the plan and their part in it, you can modify it as needed by the individual situation.

There's an old saying in the emergency services: "You can't make up time on the road." You can shorten dispatch time, from the time the 911 call is placed until the time the wheels turn. You can shorten the amount of time you spend at the scene. But once you're on the road, it just takes as long as it takes to drive from here to there. Trying to drive faster increases risk tremendously and saves very little time. In 31 years and many thousands of calls, I have never asked a driver to speed up. You can't make up time on the road, but you can be efficient at the scene.

It's really not how long you spend on the scene that matters, but what you spend that time doing

EMT Re-Cert Scheduled

For those of you who need to Re-certify your EMT certification there will be a test held on Saturday October 13, 2007 at the Norwich University Campus beginning at 8:00 Sharp.

As always evaluators and Patients would also be greatly appreciated.

If you have any questions or can help out with evaluations please contact Mark Podgewaite.

Update: EMT-Advanced Curriculum

There is a fair amount of scuttlebutt going around about the new EMT-Advanced. I called Vermont EMS to find out what's going on.
NHTSA is working on developing a new level of certification to replace the EMT-Intermediate. Dan Manz is the principal investigator in charge of the project, and Mike O'Keefe is also part of the team. The goal is to develop a level of certification that will make sense for ALS responders in rural areas where paramedics are less available. Hopefully this will result in a level of certification between EMT-B and EMT-P that will become a national standard. First Responder, EMT-B, and EMT-P are pretty much the same from state to state. It's the levels between B & P that vary. A nationally standardized level of certification would make life much easier for EMS personnel who move or who work in more than one state.

The new curriculum will be called EMT-Advanced - a much better title than EMT-Intermediate. I never liked the "EMT-Intermediate" - I want to be taken care of by an expert EMT, not an "intermediate" one. The forecast is that the curriculum will look very much like the Vermont EMT-I-03, but development is continuing. A final draft is expected to be completed by the fall of 2009, so nothing's going to change very soon.
Stay tuned -

Mike

Meth Lab Safety By Mark Podgwaite NREMT-I NECEMS I/C

One of the unfortunate realities in our society today is drug abuse. From alcohol to heroin to meth our desirer to make ourselves "feel better" is at epidemic proportions with no real relief insight. This epidemic exposes we responders to a variety of dangerous situations such as physical violence and exposure to harmful materials. In the case of a meth lab, these exposures can lead burns, skin irritation as well as long term respiratory issues and explosion hazards.

Clandestine production accounts for nearly all of the methamphetamine trafficked and abused in the United States and can occur anywhere; in an apartment, a vehicle, an office, a house just about anywhere. Once thought to be concentrated in the western, southwestern, and Midwestern United States it is now known that Domestic methamphetamine production, trafficking, and abuse is happening all across the country. Interestingly Methamphetamine is also increasingly available in portions of the South and eastern United States, especially Georgia and Florida this at an alarming rate. Clandestine laboratories in California and Mexico are the primary sources of supply for methamphetamine available in the United States.

Because of their portability, meth labs are not always easy to detect. Signs of a methamphetamine lab include large quantities of common household products. Used as directed, these household products are generally safe. Mixed together or used improperly, they can become explosive and produce toxic fumes. One of the first indicators of a meth lab is the storing of large amounts of household items such as the following:

Acetone
Alcohol (isopropyl or rubbing)
Anhydrous ammonia and ammonium sulfate (fertilizer)
Battery acid (sulfuric acid)
Bleach
Coleman fuel
Drain cleaner (sulfuric acid or caustic soda)
Drain openers such as Red Devil lye
Heet and Iso-Heet, gasoline additives (methanol/alcohol)
Hydrogen peroxide
Iodine (both crystal and liquid)
Lithium batteries
Matches (red phosphorous)
Mineral Spirits
Muriatic acid
Salt (table or rock)
Over the counter cold pills containing ephedrine or pseudoephedrine
Sodium and Lithium metal
Starting Fluid (organic ether)
Toluene
Trichloroethane (gun cleaning solvent)

Additionally, the following equipment may also be found at the site of a meth lab:

Aluminum foil
Bed sheets
Blenders
Bottles; such as pop, water and milk bottles
Chemistry glassware
Camp stoves
Cheesecloth
Coffee filters
Cotton balls
Duct tape
Electric portable hot plates
Funnels
Garden spray jugs
Gas cans
Jugs
Paper towels
pH test strips
Plastic tubing
Pressure cookers
Propane tanks and thermos
Pyrex dishes
Rags
Rubber and latex gloves
Strainers
Swimming pool chemicals
Thermometers
Turkey basters

Meth Lab Safety cont'd

The environment itself may also offer clues to the presence of a meth lab:

Chemical staining on walls and floors/•A multitude of expensive home items such as stereos with no visible means of support • Covering or blacking-out of windows •Security measures such as cameras or baby monitors outside of buildings • Guard dogs • Burn pits, stained soil or dead vegetation indicating dumped chemicals or waste from a meth lab •Abnormal chemical odors not normally associated with apartments, houses or buildings. These odors may be similar to sweet, bitter, ammonia or solvent smells. •Large amounts of household chemicals found in odd places such as:

- Bathrooms /Kitchens / Laundry rooms /Motel rooms

Other clues include:
Waste cans or dumpsters emitting strong chemical odors • Rags with read and/or yellow stains• Large number of pill blister packaging from over-the-counter cold, diet or allergy remedies

- Empty containers from white gas, ether, starting fluids, lye or drain openers, paint thinner, acetone, or alcohol• Compressed gas cylinders, or camp stove (Coleman) fuel containers• Packaging from Epsom salts or rock salt• Propane tanks or coolers containing strong ammonia odors• Pyrex/glass/Corning containers, with dried chemical deposits remaining

Bottles or containers connected with rubber hosing and duct tape• Coolers, thermos bottles, or other cold storage containers• Respiratory masks and filters or dust masks• Funnels, hosing and clamps• Discarded rubber or latex gloves• Coffee filters, pillow cases or bed sheets stained red (used to filter red phosphorous), or containing a white powdery residue

Steps to take if you suspect a meth lab

- Leave the site at once and alert law enforcement
- Do not open any coolers, container or boxes
- Do not touch any items
- Don't shut off any electrical supplies
- Limit time inside scene
- Handling meth chemicals and/or meth lab waste residue can burn your skin and eyes. Breathing the gases can cause respiratory damage
- Try not to alert the suspects of your suspicions

Remember that a meth lab is a HAZMAT scene until deemed otherwise by those certified to do so, usually not us.

Interventions that can reduce risk for injuries among first responders to methamphetamine-laboratory events include 1) increasing awareness of the risks associated with illicit drug laboratories, 2) encouraging training in situations involving hazardous material, 3) identifying the nature of the event before entering the contaminated area, 4) wearing appropriate PPE, and 5) following a proper decontamination process after exposure to hazardous substances.

A More Trustworthy EMS District

In my last discussion (see volume 1, Issue 3-"Trustworthy") I elaborated on the word trustworthy-that which is "worthy of confidence, dependable" and looked at some hypothetical situations in which our EMS district might be seen as trustworthy to our community at large. In this issue I want to highlight an accomplishment that probably until recently has gone relatively unnoticed and one that I believe makes our EMS District more trustworthy. In a relatively large sampling Mike Morgan, EMS liaison has noted that over 95% of the 911 calls in this district have at least one EMT-intermediate participating in the care of that patient. Why does that fact make us more trustworthy? Simply it means that a high level of care is available to any patient in our EMS district regardless of the time of day (how about 3am?), nature of call (hypotensive patient involved in MVA requiring fluid resuscitation), age of the patient, etc. Our citizens can trust that this high level of care will be coming to them 365 days/ year. That is trustworthy and deserving of congratulations to all of you who make it happen.
So, pat yourself on the back, District 6, you've done a great job in this arena!

Vermont EMS District 6

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District 6

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Training Coordinator: Mark Podgwaite

District 6 EMS Liaison: Mike Morgan

Visit us on the web at:
www.emsdistrictsix.org

This publication is for anyone in the District to contribute to and enjoy. We are currently producing the TEST TONE on a quarterly basis. If there is anything that you would like to see in the future please feel free to contact the editor or one of the members , so that we can know how to better serve you.

Training Corner by Mark Podgewaite

Fall is just about here and things in the area of training are getting BUSY. The I -03 class has rapped up, and the Basic class has begun. Additionally, we are planning a couple of very interesting Quarterly District Trainings to be presented in the next few months. And lastly, there seems to be interest in another (and final) I-03 transition class. If your department has folks needing to take the transition course, please let me know. We are trying top find out haw many folks need this.

As stated above, The B class is underway. We have 25 students in this class – up significantly from prior years. As always, we need help with practical nights etc. You do not have to have attended the Vermont evaluator's course to help out yet- that is slated to begin sometime in 2008. Your help would be greatly appreciated.

NEEDED:

People Needed to fill the committees for the District. Anyone that is interested should contact Chairman Jim Baraw for more information!! You do not need to be a member on the board to make a difference in YOUR district. Please come join in and help us help you!

Editor: Jennifer Miner

You can reach me at one of the email addresses below if you have questions or concerns regarding the production of The Test Tone

Also if you have any trainings ,education opportunities or things that others in the area can benefit from please send them in and we would be happy to help in getting g you messages out .

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The Deadline for the next edition is December 15, 2007.