



The Monitor

Winter 2008

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Why?

By Gladdie McMurtrie
Lancaster EMS Board Chair

derstand the why behind the death of a 13 year old, the why behind the tragic death of Amish school students, the why behind the death of an abused infant or even the why behind a fellow crew member's illness.

Of course, we do have many sad calls but, at the same time, there are the calls which bring us joy. My personal favorites include; the birth of an infant, the smile from an elderly transport patient, and the thank you from a patient's family. The laughter...boxes of ice cream, Vaseline, direct pressure, and Christmas parties....could we not all write a book about the experiences we have had??

As we enter a new year, we can be sure that these experiences, both sad and happy, will continue. As a family, Lancaster EMS will be ready to react. We will continue to provide the tools that are needed and we will continue to maintain our status as the number one EMS organization in Lancaster County...and beyond! Our staff, both office and field, is and will continue to be the best in the business.

There you have it....how many times can you do this....as many as necessary; why....because of a smile, a thank you and the personal satisfaction; and what do you get out of it....a sense of fulfillment and pride in an organization that is second to none. Simple...but it is why I am involved with Lancaster EMS.

A new year! It is a time to reflect on the past and to plan for our future. We all have memories of one particular call that we will never forget...for me it was the tragic rescue of a young boy on Hamilton Road and the loss of co-workers during that rescue.

How many times have you been asked how can you handle tragic calls? Why do you want to do this? What do you get out of it? Frequently in the EMS business bad things happen to good people, old and young. Yes, you are trained to perform the medical skills but when bad things happen, especially to young people, something else kicks in...its called emotions.

These are the times that I am most proud of the staff at Lancaster EMS. The compassion of and for fellow crew members is unending...the willingness to take time to talk, to listen and to offer advice to someone struggling to un

Newsletter Staff:

William Conrad

Editor in Chief

Vickie Horan

Copy Editor

Mandie Martz

Design/Layout

C. Robert May

Executive Director

Over the past few years, the Performance Improvement Team has noticed a significant increase in the number of patients, both young and old, requiring spinal immobilization. This trend is due in part to the recently updated BLS protocols which require immobilization not only of patients complaining of neck and/or back pain from a vehicle accident, but those who have fallen from a standing position or have sustained other blunt traumatic injuries. We are all familiar with the BLS spine immobilization protocol (listed on page 3), but are we actually immobilizing our patients appropriately? Curvatures of the spine, other congenital abnormalities, even extremity fractures are just a few of the challenges EMS providers face when immobilizing patients.

Why do we immobilize patients? Our ultimate goal as prehospital providers when properly immobilizing any patient is to keep a neutral spine alignment (cervical, thoracic, and lumbar). There are several conditions patients may have which prevent them from maintaining a "straight" supine position. Patients with osteoporosis or kyphosis exhibit a curvature of the spine, resulting in difficulty (sometimes impossibility) lying



supine, much less maintaining that neutral spine alignment. Simply placing a folded towel under the patient's head and in other "void" areas will keep the patient's spine in alignment. Providers should also consider placing towels under the shoulders of pediatric patients to help maintain alignment of the spine as well reducing movement in areas where a "void" is present.

Are we placing straps correctly? Frequently we use only three straps to secure a patient to the long back board. Oftentimes the third strap is found across the patient's ankles. Imagine trying to roll this patient on their side should they vomit during transport - one strap is across their chest, one strap across their abdomen, and one strap across their ankles. If the pelvic area is not secured, the patient's weight is going to shift, thus losing the neutral spine alignment. We should be using at least four, if not five, straps.

The University of North Carolina evaluated patients who presented to a regional hospital's emergency department. Their published study attempted to define "adequate" spinal immobilization and the frequency with which it is applied to patients transported to their ED on backboards. The study reviewed 50 consecutive patients who were triaged as having "low acuity injuries" (injuries not meeting trauma center criteria). The study reported that 15 patients (30%) had at least one unattached strap or piece of tape that should have attached their head to

the backboard; forty-four patients (88%) were found to have greater than 2 cm of slack between their body and the straps. The article recommended providers recheck the board straps once the patient is secured, as well as after placing the patient in the ambulance and during transport to the hospital. The article suggested that changes in weight distribution of the patient could occur during transport, and that this movement could loosen straps.

Do you also sometimes wonder why we are immobilizing patients only to have the hos-

(Continued on page 3)

pital staff unceremoniously remove the equipment immediately after we arrive in the emergency room? A study published in the 2001 Emergency Medicine Journal suggested that the long spine board could be harmful to patients lying on backboards for extended periods of time in the emergency room. The study notes that complications arose in five clinically relevant categories:

Pressure sore development, inadequacies of spinal immobilization and support, pain and discomfort, respiratory compromise, and quality of radiological imaging. The evaluators concluded that spine boards should be removed in all patients soon after arrival, ideally after the primary survey.

Lastly, dust off those KED boards! We should be using KED boards on stable patients who have neck and/or back pain

following a vehicle collision. Also, since minimal trauma may lead to spinal fractures in patients with a history of rheumatoid arthritis, severe osteoarthritis, Down's Syndrome, cancer or ankylosing spondylitis, we should consider using the KED board to minimize movement of the spine before transferring the patient to the long board.

¹ Jems Magazine, 2007 Aug 5, Proper Strap Tightness for Immobilization, Keith Wesley

Statewide BLS Protocol For Cervical Spine Immobilization (261-1 through 261-3)

Blunt traumatic injury with risk of possible spinal fracture or spinal cord injury based upon symptoms of neck or back pain, extremity (upper or lower) weakness or numbness, even if symptoms have resolved.

OR Mechanism of injury consistent with possible spinal injury, including: Any fall from standing or sitting with evidence of striking head, any fall from a height (above ground level), any MVC, any trauma where victim was thrown (e.g. pedestrian accident or explosion), any lightning or high voltage electrical injury, any injury sustained while swimming/diving or near drowning where diving may have been involved.

OR Any unknown or possible mechanism of injury when the history from patient or bystanders does not exclude the possibility of a spine injury. Penetrating trauma to the neck or back with signs/symptoms of neurologic deficit (extremity weakness or numbness).

This protocol also applies to inter-facility transfer of any patient that is being transferred due to injuries from a traumatic mechanism unless a medical command physician agrees that the patient may be transported without spinal immobilization.

Exclusion Criteria: No history or no mechanism of injury that would be consistent with spinal injury; penetrating trauma to the neck or back without neurologic deficit; penetrating head trauma (for example gun shot wounds to the head); patients with non-traumatic back or neck pain related to movement, position or heavy lifting.

Procedure: Provide manual stabilization of the cervical spine until: Full spinal immobilization has been completed (usually requires a rigid c-spine collar, cervical immobilization device and long spine/back board. **OR** Immobilization is not indicated as determined by this protocol.

Immobilize the entire spine in any trauma patient who sustains an injury with a mechanism having the potential for causing spinal injury and who has at least one of these clinical criteria: Altered mental status (including any patient that is not completely alert and oriented); evidence of intoxication with alcohol or drugs; a distracting painful injury (including any suspected extremity fracture); neurologic deficit (including extremity numbness or weakness- even if resolved); spinal pain or tenderness (in the neck or back)

WARNING: These criteria cannot be assessed on any patient with a language or communication barrier (including young pediatric patients) that prevents understanding and appropriately responding to the assessment questions. If there is any doubt about whether the patient meets any of the clinical criteria listed above, immobilize the spine.

The use of Etomidate in Medication-Assisted Intubations

By Bret M. Levy, M.D.

Within the past year, Etomidate (Amidate) was approved by the PA Department of Health, Bureau of EMS for assisted intubation in the pre-hospital setting. The goal of this article is to provide a pharmacologic and clinical overview of the use of Etomidate. The drug has been available for over a decade. The original indication is as an induction agent or adjunct to general anesthesia. In addition, it has minimal cardiovascular or pulmonary depressant effects and is a commonly used agent, in combination with a paralytic, in the emergency department for RSI (Rapid Sequence Intubation). Finally, it has emerged as a popular, if not the most popular drug, for procedural sedation.

Etomidate is a short acting hypnotic agent. It is thought to have a GABA type effect causing temporary depression of brain stem reactivity. It has minimal cardio-pulmonary depressant effects when used alone. However, in combination with other medications, apnea has been reported. Etomidate has been shown to slightly decrease intra-cranial and intra-ocular pressure. In addition, decreased cortisol concentration is a widely recognized side effect, yet this is clinically insignificant when considering the single dose application in the ED or pre-hospital setting. The recommended dose is 0.3 mg/kg in adults. It is not recommended in children under 10 as safety profiles have not been established. The onset of action is less than 1

minute with a typical duration of action of 3-5 minutes.

My clinical experience using Etomidate began in residency 9 years ago. Initially it was used for all trauma RSI because of the above noted physiological parameters. Soon after it replaced other sedative-hypnotic agents as the induction agent of choice for all intubations. For the purposes of clarification, Etomidate is typically



used in combination with a paralytic for RSI, but used as a single agent for procedural sedation. Now, it has essentially replaced most sedative-narcotic combinations for procedural sedation. Etomidate has a very reliable and predictable onset of action. In the past, adults routinely received 20 mg for RSI or procedural sedation however we are trending towards weight based dosing. In my experience, the primary drawback to using Etomidate as a single agent is the high incidence of transient

muscle rigidity. This is sometimes severe enough to look seizure like. Typically this will not diminish the procedural success rate with possible exception of hip reduction in muscular individuals. I prefer to give a very low dose of a benzodiazepine which seems to eliminate the muscle rigidity. Also, of note, is that Etomidate has no analgesic properties.

LEMSA was given approval to begin using Etomidate for medication assisted intubation. This required providers to pass both a written and laboratory evaluation. To date, we have limited experience to report on. It has been given twice, both in the setting of trauma. In neither incidence was the patient intubated, however it was noted by at least one provider that it facilitated airway management on a very agitated patient. We hope to have further clinical experience to report on at a later date. Incidentally, I have found there is a certain sub-set of patients that can have definitive airway management (i.e. intubation) with Etomidate alone. These tend to be older patients with very little physiological reserve and those that are rapidly approaching respiratory failure. The majority of pre-hospital patients requiring medication assisted airway management don't fall into this category. Whereas Etomidate has a proven track record of successful use in the OR and ED, we hope that it will prove to also be a beneficial medication in the pre-hospital setting.



Well, another year has come and gone. As it is with our business it was filled with excitement, disappointment, surprises and changes. We had a couple of our family members get married, a couple that had healthy babies, a few that hopefully moved on to greener pastures, and a few new faces. Lancaster EMS graduated four from their first Paramedic class, as well as continuing to educate and train EMTs who are ready for employment. By the time this newsletter is printed our second paramedic class will have begun with 27 students. That is an amazing number and shows Lancaster EMS's dedi-

cation and commitment to ongoing education. Thanks to the teaching skills of Bill Kanoff and Tom Shaw our program gets better and better.

As for the newsletter, the staff has a lot of ideas and plans to make the newsletter better and more informative for members and non-members alike. Since the newsletter's first publication, we have received many flattering comments from Steve Worth (Lancaster EMS attorney) and Dick Moriarty (Millersville Boro's Mayor) to name a few.

The staff of The Monitor is very proud to be able to put a quality newsletter out and will strive to always put out a bigger and better newsletter. As always we welcome any and all articles from our providers and friends. The newsletter will be placed on the internet for any employee or the public to see. As the New Year begins the staff at

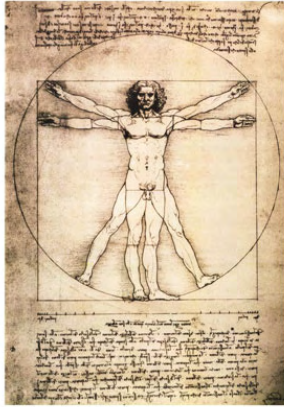
The Monitor wishes you and your families a very healthy and happy year.

Also, I am working on a very exciting event for the Saturday of EMS Week (May 18-24). What I am attempting to do is to unite as many EMS organizations in the County as is possible to do a county wide Round-Robin event. I am in the process of meeting with the Operation Chiefs of several organizations now to finalize all the details. Please keep that Saturday in mind. I believe this will be a fun, educational, and cooperative effort by the EMS organizations involved. As of this writing I have had 11 EMS organizations who voiced interest in the idea and concept. I will need volunteers to assist Lancaster EMS in this venture. So, if you think you would be willing to help I would appreciate any and all assistance. Stay tuned for more information to come.

Annual Review Schedule

Platoon	Date	Time
3 rd Platoon (Holbriiter)	March 28, 2008	0800 – 1600
1 st Platoon (Carr)	April 18, 2008	0800 – 1600
2 nd Platoon (Hinkle)	May 20, 2008	0800 – 1600
B Platoon (Deck) C Platoon (Arntz)	June 20, 2008	1400 – 2200
A Platoon (Parrish)	September 19, 2008	1400 – 2200

Human Body Trivia



- Medical researchers contend that no disease ever identified has ever been completely eradicated.
- The attachment of human skin to the muscles is what causes dimples.
- In 1972 a group of medical researchers reported that you could cure the common cold by freezing the big toe.
- Between 25-30% of the world's population sneeze when exposed to bright light.
- Men have more blood than women. Men have 1.5 gallons and women have 0.87 gallons. This is due to physical size difference and muscle mass.
- Each year over 50 million prescriptions are filled to battle the common cold in the U.S. There are no known cures.
- During the average person's lifetime one will grow 590 feet of hair on their body. On average, men spend 160 days of their life shaving.
- You lose forty pounds of dead skin cells (dander) in your lifetime.
- Your thumb is the same length as your nose.
- The average human bladder can hold 13 ounces...or around one bottle of beer.
- The right lung takes in more air than the left one does.
- There are ten trillion living cells in an adult's body and the average person generates 1,000 lbs of red blood cells in their lifetime.
- Females are physiologically more complex than males and women have 500 more genes than men. Because of this, women are generally more immune to common male problems like color blindness and hemophilia.
- Dogs and humans are the only animals with prostates. The strongest muscle (by mass) in the human body is the jaw muscle.
- During a kiss as many as 278 different types of bacteria colonies may be passed from one mouth to another. A passionate kiss may use 6.4 calories per minute.
- Drinking water after eating reduces the acid in your mouth by up to 60%.
- Human thigh bones are stronger by mass than concrete.
- The lens of the eye continues to grow throughout a person's life.
- The little lump of flesh just forward of your ear canal is called a tragus. Also, it only takes 7 lbs. of pressure to rip off a person's ear.
- Every person has a totally unique tongue print.
- Blond beards grow faster than darker beards.
- By age sixty, most people have lost half of their taste buds.
- The hardest bone in the body is the jawbone and the strongest material in the body is tooth enamel.
- One square inch of skin holds 650 sweat glands and 20 blood vessels.
- The human kidney consists of over 1 million tiny tubes with a total length (stretched end to end) of over 40 miles.
- Electrical stimulation in certain lobes of the brain can revive long lost memories.
- The average person can last 12 days without food or water.
- Pain travels through the human body at 352 feet per second.
- If you squeezed out all of the bacteria from your digestive system it would fill a coffee cup.
- Human lungs are 100 times easier to inflate than a standard balloon.
- Undertakers report that bodies do not deteriorate as rapidly as they once did. This is attributed to the preservatives prevalent in today's modern diets.

Three Years Already?

By C. Robert May

It is hard to believe that Lancaster EMS will soon be gearing up for Commission on Accreditation of Ambulance Services (CAAS) *re-accreditation* already! It truly does not seem that long ago that I was using the acronym “CAAS” in just about every sentence I spoke or wrote. Well... the time is upon us once again; and, believe it or not, I am excited. I get excited because, for me, the accreditation is not necessarily the achievement of this significant accomplishment, but rather all of the opportunities to improve Lancaster EMS by working through a structured, independent, third party review of every aspect of the our organization.

Successfully achieving a designation from CAAS signifies that an ambulance service has met the ‘gold standard’ determined by the ambulance industry for the delivery of modern emergency medical services. There are presently 106 CAAS-accredited ambulance service providers in the United States (only 4 in PA). The accreditation process includes a comprehensive self-assessment, an off-site review, and an independent, two-day, on-site review of the applying organization by a team of EMS professionals which

always includes one physician. The accreditation is granted by an independent body, the Panel of Commissioners, which is comprised of three representatives— one each from medicine, law, and business.




So where did the idea of accreditation originate? In 1982, at an American Ambulance Association workshop, the need for high-quality standards was identified. A working committee was established, and over an eight-year period, standards were constructed through consensus of EMS experts from all over the country. Some of the best EMS thinkers and practitioners, working together, determined those standards that should be met by an EMS provider. In 1990, an independent Commission (CAAS) was established to begin the process of accrediting ambu-


lance services.

The benefits of our Company becoming, and maintaining, CAAS accredited are numerous. Service delivery standards to our community are the most obvious. Other benefits include highly engaged medical direction, continuous performance improvements, and response time standards. All of these benefits assure that service delivery meets high standards. Recognition from others is another valuable benefit of accreditation. State and local public officials, the medical community, other public safety agencies, and the members of the community served can be confident that the CAAS-accredited agency is meeting the highest national standards for ambulance service.

AAAS is sponsored by the American Ambulance Association, the American College of Emergency Physicians, the National Association of EMS Physicians, the National Association of State EMS Directors, the National Association of EMTs, and the International Association of Fire Chiefs, with liaison representation from The National Highway Transportation Safety Administration. More information can be found at www.caas.org.



HAPPY EMS
WEEK!
May 18th-24th





Pennsylvania's EMS providers are on the very frontlines of our health care system. More than most other groups, you are familiar with the kinds of questions that residents have about health care access, and the necessity for those you serve to be able to make informed decisions about their own care.

I'm pleased to report that House Republicans are taking a very active role in offering workable and sensible solutions for the problems with Pennsylvania's health care system. I serve as co-chairman of our Caucus' Health Care Task Force and have been hard at work to develop and promote our plan.

During the past year, we have worked with people deeply involved in health care – patients, doctors, hospitals, insurance companies and the business community – to craft a plan that

takes a responsible approach to make health care more accessible and affordable for all Pennsylvanians. We examined the source of the problem in developing our plan, rather than putting a taxpayer-funded Band-Aid on a wound that we all know won't heal on its own.

We have incorporated legislation into our health care package that would provide funding to expand a pilot EMT program started in Pittsburgh, called EmedHealth, that trains underutilized paramedics and EMT's to provide disease management and preventive health services to the elderly and uninsured in their homes. These preventive techniques will improve the health and wellness of Pennsylvanians and decrease unnecessary emergency room use, ultimately saving our health care system money.

Seventy-five percent of health care costs are due to chronic illnesses, such as diabetes and asthma. Since the program's inception, emergency room visits for asthma patients have decreased from 60% to 4% and hospitalizations from 36% to 0%. This program is of great use to rural areas as well as the uninsured, many of whom miss preventive screenings and vaccinations.

Another piece of legislation that may be of particular interest to you is House Bill 1824,

which expands the use of community health centers. This legislation includes funding for mobile clinics to improve access to health care, particularly prenatal care.

Our ultimate goal is to help you to continue providing top quality services by allowing families and health care providers to make health care decisions in the best interest of their patients, and to avoid unnecessary calls to you by getting primary and non-emergency care to families when they need it. More detailed information on this bill and related health care legislation is available online at HealthCareforPAFamilies.com.

During the upcoming months, legislation is expected to be introduced that will update Act 45, Pennsylvania's EMS Act. Several other bills impacting EMS providers are also expected to be discussed, including the provision of tax credits for EMS responders and requiring health insurers in the state to accept any willing ambulance service provider into their managed care networks.

I will continue to work on issues that are of importance to you. Please feel free to contact me with your questions and concerns. Call me at my district office (464-5285) or visit my Web site at RepBoyd.com.

HAPPY BIRTHDAYS!

Wiley, Kathy	3-Jan	Hackman, Donald	5-Mar	McMinn, Kevin	4-May
Brose, Thomas	4-Jan	Ault, Erin	5-Mar	Baier, Ronald	9-May
Stewart, Linnea	5-Jan	Irizarry, German	12-Mar	Griest, Jean	11-May
Stoltzfus, John	6-Jan	Bushong, Susan	15-Mar	Daub, Steven	13-May
Miese, Diane	19-Jan	Perrine, Peter	17-Mar	Kanoff, William	15-May
Kinnier, Pat	23-Jan	Shaw, Thomas	19-Mar	Dishart, Joshua	20-May
Bushman, Elizabeth	24-Jan	Mathew, Reifsnyder	24-Mar	Bradley, Janet	21-May
Dietz, Matthew	27-Jan	Mullhausen, Teresa	25-Mar	Williams, Dave	26-May
Fitts, Charles	29-Jan	Evans, Robert	26-Mar	Barber, Daniel	26-May
Miller, Rita	31-Jan	Conrad, William	1-Apr	Bennawit, Kristina	29-May
Ford, Robert	2-Feb	Schramm, Gerard	4-Apr	Kluge, Sean	1-Jun
Deck, Ross	5-Feb	Holbritten, Christoper	5-Apr	Wireback, Stephen	2-Jun
Groff, Amy	9-Feb	Patterson, Wendy	11-Apr	Leeder, Asher	5-Jun
Comfort, Ronald	12-Feb	Mutterspaugh, Amanda	15-Apr	Melchiorre, Matthew	5-Jun
Overly, Kyle	17-Feb	Beverlin, Richard	21-Apr	Thompson, Robert	5-Jun
Eaton, Luke	18-Feb	Moyle, Ashley	21-Apr	Hartman, Thomas	7-Jun
Crawford, Edward	20-Feb	Snyder, Vicki	21-Apr	Williams, Bryan	8-Jun
Esbenshade, Brandon	23-Feb	Haas, Lee Ann	22-Apr	Testerman, Chelsie	9-Jun
Hohman, Craig	23-Feb	Oakes-Tarell, Polly	22-Apr	Secrist, Jennifer	14-Jun
Eisenhower, Joshua	24-Feb	Metropolis, Lily	26-Apr	Maillie, Kim	15-Jun
D'Imperio, Tina	24-Feb	May, Robert	27-Apr	Arntz, Gregory	15-Jun
Gile, Sharon	25-Feb	Garriga, Damaris	28-Apr	Strippel, Christopher	26-Jun
Patterson, David	29-Feb	Margevich, Danielle	1-May	Burke, Brian	30-Jun
Jones, Deanna	1-Mar	Leonardo, Lisa	3-May	Welk, Andrew	30-Jun

This is the first in a series of the Spinal Disorders articles written by Dave Rathbun NREMT-P PRN medic for Lancaster EMS. Dave's full time profession is Bio-mechanical design engineer for the Switzerland based company "Synthes". Synthes is a world leader in Trauma, Crano-Maxial-Facial, and Spine biomedical implants. Synthes had a world wide business of \$2.5 billion in 2007; with sustained growth of 25% per year.

Dave has worked in many different area of the spine and is current working in "Deformity"; designing and engineering implants and surgical instruments for pediatric, adolescent, and adult congenial deformities of the thoracic and lumbar spine.

Future articles will have more information on specific diseases of the spine and different corrections that are currently being applied and the next generation of correction coming to market.

Overview

Research indicates that in 2003, Americans with back symptoms made about 4.8 million visits to hospital outpatient departments or to hospital emergency departments. A 2004 study showed that about 7.4 million American adults made health care visits (to a hospital and other settings) for non-specific back pain. Other studies

have shown that the prevalence of low back pain is between 15 and 20 of every 100 American adults.

In a humans life time 8 out of 10 persons will experience some degree of back pain. Some studies shows that it is the second most common reason for visiting seeking medical attention. Ameri-

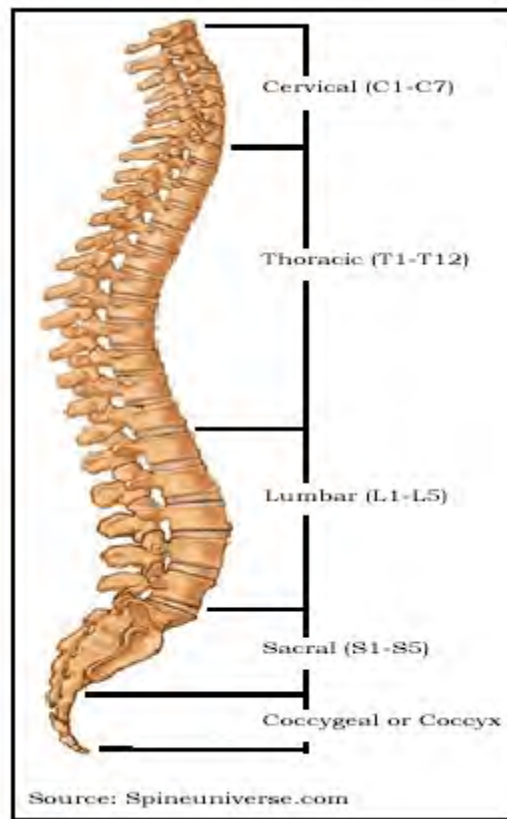
the spinal cord and provide structural support to the body. The vertebrae are categorized into five distinct regions, as shown in Exhibit 1-1.

The cervical spine region (C1–C7) contains the top seven vertebrae, whose primary role is to bear the weight of the skull. This region allows for the highest range of motion due to the presence of two specialized vertebrae that are directly attached to the skull. The second region is the thoracic spine (T1–T12), which consists of the next twelve vertebrae, extending from the neck through the chest.

The thoracic region protects the internal organs of the abdomen by providing a physical attachment to the rib cage. The thoracic spine is the least mobile segment of the spine. Consequently, degenerative and herniated disc diseases occur infrequently in this region.

The next five vertebrae in the lower spine constitute the lumbar spine (L1–L5), which supports the body's weight. Vertebrae in this region are capable of some rotation, do the majority of bending, and carry the highest weight-bearing load of all other vertebrae.

The fourth region is the sacrum (S1–S5), which provides attachment for the hipbones, as well as protection to organs in the pelvic

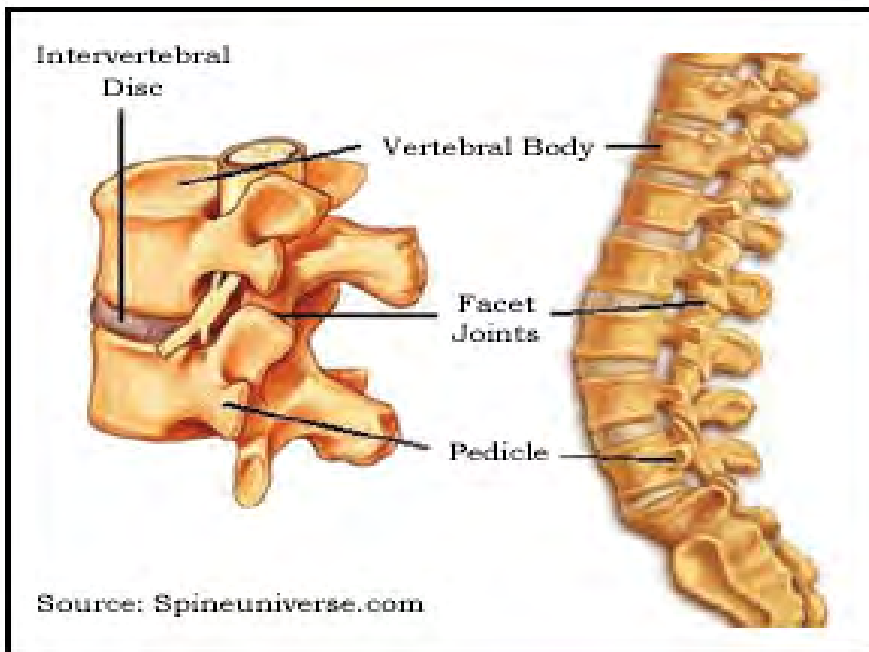


cans spend over 50 billion dollars a year on back pain and that does not account for missed time at work and lost productivity.

Anatomy of the Human Spine

The human spinal column is comprised of 33 interlocking individual vertebrae that protect

(Continued on page 11)



(Continued from page 10)

area. The sacrum is comprised of five fused sacral vertebrae, and the coccyx region consists of four fused vertebra whose function is unknown.

Vertebral discs are the mobile portions of the spine located between vertebral bodies, shown in Exhibit 1-2. Each disc contains a soft core called the nucleus pulposus and a tough fibrous exterior, the annulus fibrosus, which together serve to cushion the vertebrae against stresses due to motion. In the absence of intervertebral discs, the vertebrae cannot sustain repeated high stress without incurring structural damage.

Excessive pressure or injuries to the disc can also damage the annulus, leading to the formation of scar tissue, a tissue that is structurally inferior to the original ligament. Over time, this may damage the nucleus pulposus, causing the dissipation of its water content and reducing its ability to serve as a shock absorber.

Due to its intricate three-

dimensional structure and length, the spinal column is susceptible to integrity and shape degradation caused by various degenerative disorders, trauma, or deformities.

Trauma/Tumor Spinal Disorders

Back pain may arise when excessive external pressure results in tears in the muscles or ligaments supporting the spinal column. It can also occur when a traumatic event forces an intervertebral disc slightly out of its normal position, thereby irritating adjacent nerves or disturbing normal weight-load distribution.

Spinal trauma can be compressive or shear in nature. These forces are generally not destructive unless the stresses are acute or the victim is afflicted with osteoporosis. Compressive trauma results from falls in which the individual lands in a sitting position. Shear or displacement trauma, however, typically results from automobile accidents or from blows with a blunt object.

In automobile accidents, the car seat belt serves to limit the movement of the torso but the head is able to move freely.

Consequently, these displacement injuries occur more often in the cervical region, leading to significant damage the spinal cord, resulting in death or paralysis. If the injury is in the cervical area, quadriplegia may ensue. If injury occurs in the thoracic or lumbar region of the spine, only the lower extremities will be affected, resulting in paraplegia. Benign or malignant spinal tumors account for less than 1% of all back problems, but may cause serious complication when they do occur.

Benign tumors of the spine are rare and can almost always be successfully removed surgically. They can be left intact if their size remains unchanged and if they do not place pressure on the nervous system. Malignant tumors are far more critical because they require the eradication of affected tissue in addition to the tumor itself. Tumors can be localized, such as in the vertebral body, or they can proliferate into the spine from another location in the body.

Cancers that spread to the spine commonly originate in the lung, prostate, thyroid, breasts, or kidneys, and it worsens with age. Adults with curvature of the spine due to scoliosis are generally more susceptible to back problems.

This is Part I of a multipart series on the spine. The entire article was written by Dave Rathbun , and we thank him for his submission. -Bill Conrad, Editor in Chief

Tess Mulhaussen, Benefits Coordinator



What is your

birth name? Teresa Marie Brandt

Where were you born?

LGH at 8:33 a.m. on March 25th to Robert E. and Marie Brandt, the third of five children.

What are your hobbies or interests outside of your job?

Cooking, reading (when the rare occasion presents), listening to jazz and big band music, and watching my daughter play soccer.

Do you have any children?

Yes, a 15-year-old daughter, Anne Marie. She is a ninth-

grader at Elizabethtown High School. She plays saxophone and flute in the symphonic band. She also plays soccer (year-round) and is a mid-fielder on the high school JV team. She has an opportunity this summer to travel at either Vienna, Austria, to play in the Youth Friendships Games or go to Rio de Janeiro and participate in the Brazilian Cup Soccer. There are also three step-children (Brian 33; Rachel, 29; Daniel, 27) and nine step-grandchildren ranging from age 4 months to 7 years old. (They all call me Granny.)

What is the most enjoyable part of your job?

In addition to having an office next to Tina... being a part of the progress and growth of Lancaster EMS from the beginning. I take great pride in the fact that I am part of an organization that has, and continues to change and shape the face of EMS in Lancaster County.

What is the most difficult part

of your job?

Keep the phone list up to date, and having an office next to Tina.

Is there anything we should know about you specifically?

- In am the favorite sister of four brothers.
- I teach Sunday school at Christ Church UCC in Elizabethtown.
- I have been at Lancaster EMS since July 1997. Before that, I was a Registrar and Clerical Supervisor at the old St. Joseph Hospital's ER for 9 years.
- Outside Lancaster EMS, I work at Hummer's Meats at the Broad Street Market in Harrisburg on Saturdays. You will also find me in the box office at the Clipper Magazine Stadium during baseball season - opening day is April 25th!

Corey Heagy, EMT



What is your birth name?

Corey Lee Heagy

Where were you born?

St. Joseph Hospital, Lancaster, PA

What are your parents and siblings' names?

Father, Carl; Mother, Lori; Brother, Eric.

Are you married? Nope

Do you have children? Nope

How long have you been a volunteer with Lancaster EMS?

8 months

Where do you work? Lancaster General's ER

What are your future goals?

To become an RN and PHRN, then a flight nurse. I

possibly want to start a family within the next five years and have a steady job.

Is there anything we should know about you?

I really like working with the people at Lancaster EMS, and I am looking forward to moving on as soon as possible to flex pool then PHRN in the future. I also want to say thank you to all that have been helping me learn so much. It is well appreciated and I am looking forward to learning more, so keep doing what you are doing!

As I am writing this, the New Year has not yet come upon us, though when you read this article, the New Year will have begun. And an interesting year it has been with the comings and goings of our volunteers. Some volunteers left to continue their medical training at far away colleges, some went to protect this great country of ours, and others moved on to become part of our paid staff.

The volunteer program continues to recruit new EMS providers, as well as contributing to the molding of the type of EMS providers that our service demands and that the public has come to

expect. I personally am very proud of the group of volunteers already in our system, and I look forward to the new volunteers who will be joining us soon.

On October 25, 2007 Lancaster EMS hosted the third annual volunteer appreciation dinner at Willow Valley Resort in the Palm Court. We were privileged to have Bobbie Stewart speak to the group. Bobbie also started as an EMT and retired as a paramedic after more than 25 years of service. She has been a great mentor, inspiration, and friend to many of us. To hear her wisdom and profound inspirational speaking is always a pleasure. Lancaster EMS is very privi-

leged to have her in any capacity, and we now welcome her as part of the Board of Directors.

I also look forward to the wonderful and amazing things in store for us in 2008, both as employees and as volunteers at Lancaster EMS, as well as in our personal lives. We welcome all newcomers and would appreciate any help you can give recruiting new people. I am always open to new ideas in order to improve our volunteer program. Please feel free to contact me at any time, and I thank you all for your continued support. I wish you all a healthy and happy New Year.

Whew! The Holiday season is behind us. No more rushing about for the perfect gifts, worrying if they are the perfect gifts, traveling, hosting, eating way too many cookies and staying out too late. Is it just a coincidence that "flu season" occurs during and mostly after all this physical and emotional wear and tear? Our bodies must clean out all the junk *and* adapt to cold and changing weather!

So what can you do to keep your body working smoothly? Here are a few simple things:

- Drink only pure water and nothing that isn't pure water; about a half gallon per day.
- Eat only whole, unprocessed foods.

- Have your spine checked by a chiropractor for subluxation – interference between your brain and body, which can also affect your immune system.
- Get your vitamins from fresh fruits and vegetables, not a bottle.
- Snack on things like baby carrots, raisins and grapes.
- Avoid refined sweeteners, e.g. sugar, dextrose, glucose, high fructose corn syrup and fruit juices.
- Make informed choices about what is put in you and your children.

If you are considering getting a flu shot, be aware it contains formaldehyde, MSG, latex, aluminum (associated with Alzheimer's and

seizures), phenol (a carcinogen) and may contain mercury (linked to brain damage, ADHD and autism). Contact the National Vaccine Information Center (www.nvic.org) for more information.

Think positively and have fun! It's going to be cold anyway, so why complain? Adapt!

Contributed by John R. Nissley, Jr., DC, Leola PA. For more information, call 656-8000.





Attention Potential EMS Instructors!

The Emergency Health Services Federation is offering an EMT Instructor Course. The educator for this course is Charles D. Bortle, M.Ed. Charlie has been providing PreHospital education for many years here in Southcentral Pennsylvania. Currently Charlie is the Director of EMS Education Center of the Albert Einstein Medical Center in Philadelphia, PA. Charlie is most often remembered in the South-central region for his efforts as the Director of the Emergency Medical Services Education/Paramedic Institute of the St. Joseph Hospital in Lancaster PA.

Where? The EHSF Offices:

722 Limekiln Road

New Cumberland, PA 17070

When? Saturday, March 1st , 2008 9:00 am - 5:00 pm

Saturday, March 15th, 2008 9:00 am - 5:00 pm

Saturday, April 5th or 12th, 2008 9:00 am – 5:00

To Register: Emergency Health Services Federation - EMT Course Registration

722 Limekiln Road

New Cumberland, PA 17070

For any additional information or questions call 717-774-7911

Speak with Holly S. Millsaps or email hmillsaps@ehsf.org

