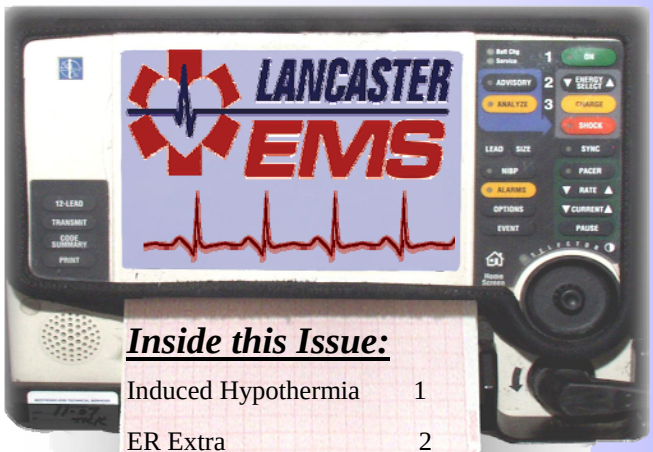

The Lancaster EMS Monitor

Ninth Issue, Spring 2010

Inside this Issue:

Induced Hypothermia

By Stephanie Brown, Operations Manager

In modern times the first medical article concerning hypothermia was published in 1945. This study focused on the effects of hypothermia on patients suffering from severe head injury. In the 1950's hypothermia received its first medical application, being used in intracerebral aneurysm surgery to create a bloodless field. Most of the early research focused on the applications of deep hypothermia, defined as a body temperature between 20–25 °C (68–77 °F). Such an extreme drop in body temperature brings with it a whole host of side effects, which made the use of deep hypothermia impractical in most clinical situations. This period also saw sporadic investigation of more mild forms of hypothermia, with mild hypothermia being defined as a body temperature between 32–34 °C (90–93 °F). In 2003 the American Heart Association (AHA) and the International Liaison Committee on Resuscitation (ILCOR) endorsed the use of therapeutic hypothermia following cardiac arrest. Currently, a growing percentage of hospitals around the world incorporate the AHA/ILCOR guidelines and include hypothermic therapies in their standard package of care for patients suffering from cardiac arrest. Some researchers go so far as to contend that hypothermia represents a better neuroprotectant following a blockage of blood to the brain than any known drug. The data concerning hypothermia's neuroprotectant qualities following cardiac arrest can be best summarized by two studies published in the New England Journal Medicine. The first of these studies conducted in Europe focused on people who were resuscitated 5–15 minutes after collapse. Patients participating in this study experienced spontaneous return of circulation (ROSC) after a median time of 22 minutes (normothermia group) and 21 minutes (hypothermia group). Hypothermia was initiated within 105 minutes after ROSC. Subjects were then cooled over a 24 hour period, with a target temperature of 32–34 °C (90–93 °F). 55% of the 137 patients in the hypothermia group experienced favorable outcomes, compared with only 39% in the group that received standard care following resuscitation. Notably, complications between the two groups did not differ substantially. This data was supported by another similarly run study that took place simultaneously in Australia. In this study 49% of the patients treated with hypothermia following cardiac arrest experienced good outcomes, compared to only 26% of those who received standard care.

One report suggests that fewer than 10% of the 300,000 Americans who suffer cardiac arrest each year survive "long enough to leave the hospital" despite increased use of such measures as "faster emergency squads, deployment of automated defibrillators at airports and other public places, and improvements in cardiopulmonary resuscitation techniques." But of 140 patients since 2006 treated at the Minneapolis Heart Institute, 52% have survived by using therapeutic hypothermia.

The earliest rationale for the effects of hypothermia as a neuroprotectant focused on the slowing of cellular metabolism resulting from a drop in body temperature. For every one degree Celsius drop in body temperature, cellular metabolism slows by 5-7%. Accordingly, most early hypotheses suggested that hypothermia reduces the harmful effects of ischemia by decreasing the body's need for oxygen. The initial emphasis on cellular metabolism explains why the early studies almost exclusively focused on the application of deep hypothermia, as these researchers believed that the therapeutic effects of hypothermia correlated directly with the extent of temperature decline.

More recent data suggests that even a modest reduction in temperature can function as a neuroprotectant, suggesting the possibility that hypothermia affects pathways that extend beyond a decrease in cellular metabolism.

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"ER Extra"

Heart of Lancaster & Lancaster Regional Medical Center Introduces "ER Extra" – Extra Fast, Extra Easy, Extra Great. Close by. Far Better.

Contributed by HLRMC and LRMC

New program emphasizes extra fast, extra easy, extra great patient care and customer service

"ER Extra" is a revolutionary emergency room experience aimed at making sure patients get the care they need in a prompt and courteous manner. The implementation of "ER Extra" at Heart of Lancaster & Lancaster Regional Medical Center will streamline the process while simultaneously keeping patients and their families informed about what to expect.

"A smooth visit from start to finish is our goal, and "ER Extra" is giving our staff, nurses and physicians the necessary tools to make this a reality for each and every patient we meet," said Karen Metz, CEO at Heart of Lancaster.

Both facilities are very focused on improving the efficiency and effectiveness of emergency room operations and understand that no one wants to wait in an emergency situation. For this reason, the hospitals have implemented a new program focused on making sure patients see an emergency room physician faster and easier. At each facility, the ProMed tracking tool has been implemented in an effort to track patient times. Additionally, all emergency department personnel are committed to monitoring activity and updating those in the reception area as to when they can expect to be seen.

"We've always prided ourselves on excellent patient care and customer service, but as new techniques are designed and implemented, we predict we will be able to exceed our visitors' expectations through "ER Extra," said Tami Lee, Interim CEO & Chief Nursing Officer at Lancaster Regional Medical Center.

ER Extra has helped Heart of Lancaster & Lancaster Regional Medical Center reduce its patient registration to physician times to below the national average of 56 minutes. "We will continue to look for opportunities at both facilities to further enhance the ease of an emergency room visit and will implement those as we find them," Metz said.

WHAT TO EXPECT:

Upon arrival, ER patients receive a copy of the "ER Extra Emergency Room Experience Guide." This guide explains the emergency room process, one step at a time. Knowing what to expect next will help calm our patients and reduce their stress levels. The guide is easy to use, which is important during an emergency situation. The guide includes a description of what will happen during the initial triage and assessment phase of the ER visit, all the way through the discharge process.

"Naturally no one wants to think about needing emergency services. However, we want the residents of the Lancaster region to know that if they do, ER Extra at Heart of Lancaster & Lancaster Regional Medical Center will give them the extra fast, extra easy, and extra great care they deserve," Lee said.

Letter from the Editor

Happy spring everyone! We have made it though one menacing winter by pulling together and showing what great teamwork can do once again. I think it's safe to say that we are finally thawed out. As we get into May and EMS Week approaches, it is time to stop and remind ourselves of the honorable job that we do. So many of us get caught up in the fast-paced and long, busy days that that we forget just how important our job really is. There is truly no job like this one! Not only because we go from day to day - or hour to hour –not knowing what situation we will encounter next, but also because we approach each and every situation with smooth professionalism. I've always thought that one of the most important attributes of an EMT or Paramedic was the ability to work under pressure and think on your feet. We are the calm in somebody's storm. Whether it be a critical MVA, a child with a fractured arm, or the routine transport of a cancer patient, it is our calm face that people are looking at to bring order to things. Our outlook and attitudes have the ability to give someone that little bit of reassurance they need in their most trying times. We may not be able to talk about the details of our day at the dinner table, but we *can* say "I helped someone today" and often times even say " I helped save a life today". There are a lot of people who never get to say that. So even though at times we may feel unnoticed or underappreciated, let's take this time that is put aside to honor EMS personnel to reflect on the difference that we make in the lives of so many and take pride in what we do. You do make a difference!

Induced Hypothermia

One plausible hypothesis centers on the series of reactions that occur following oxygen deprivation, particularly those concerning ion homeostasis. In general, cell death is not directly caused by oxygen deprivation, but occurs indirectly as a result of the cascade of subsequent events. Cells need oxygen to create ATP, a molecule used by cells to store energy, and cells need ATP to regulate intracellular ion levels. ATP is used to fuel both the importation of ions necessary for cellular function and the removal of ions that are harmful to cellular function. Without oxygen, cells cannot manufacture the necessary ATP to regulate ion levels and thus cannot prevent the intracellular environment from approaching the ion concentration of the outside environment. It is not oxygen deprivation itself that precipitates cell death, but rather without oxygen the cell cannot make the ATP it needs to regulate ion concentrations and maintain homeostasis.

Notably, even a small drop in temperature encourages cell membrane stability during periods of oxygen deprivation. For this reason, a drop in body temperature helps prevent an influx of unwanted ions during an ischemic insult. By making the cell membrane more impermeable, hypothermia helps prevent the cascade of reactions set off by oxygen deprivation. Even moderate dips in temperature strengthen the cellular membrane, helping to minimize any disruption to the cellular environment. It is by moderating the disruption of homeostasis caused by a blockage of blood flow that many now postulate results in hypothermia's ability to minimize the trauma resultant from ischemic injuries.

Therapeutic hypothermia may also help to reduce reperfusion injury, damage caused by oxidative stress when the blood supply is restored to a tissue after a period of ischemia. Various inflammatory immune responses occur during reperfusion. These inflammatory responses cause increased intracranial pressure, which leads to cell injury and in some situations, cell death. Hypothermia has been shown to help moderate intracranial pressure and therefore to minimize the harmful effects of a patient's inflammatory immune responses during reperfusion. The oxidation that occurs during reperfusion also increases free radical production. Since hypothermia reduces both intracranial pressure and free radical production, this might be yet another mechanism of action for hypothermia's therapeutic effect.

Therapeutic hypothermia should be initiated as soon as possible in patients facing possible ischemic injury as time moderates hypothermia's effectiveness as a neuroprotectant. Much of the animal data suggests that the earlier hypothermia is induced the better the subject's outcome. Patients entering a state of induced hypothermia should be closely monitored. The accepted medical standards assert that a patient's temperature should not fall below a threshold of 32 °C (90 °F). When body temperature drops below a certain threshold—typically around 36 °C (97 °F)--patients will begin to shiver.

It appears that regardless of the technique used to induce hypothermia, patients begin to shiver when temperature drops below this threshold. The drug most commonly employed to prevent shivering in therapeutic hypothermia is Demerol. However, other sedative type medications can be used dependent upon medical command preference.

So, with all the data suggesting improved neurologic outcomes in patients that receive post resuscitation induced mild hypothermia, we at Lancaster EMS, in conjunction with Lancaster General Hospital, feel that it is important to implement our new protocol.

Stay tuned for more resuscitation changes as a result of the recent trip to Minnesota that Vicki Horan and I took. We witnessed some cutting edge technology and are anxious to apply it here in the near future!

Indications/inclusions for therapy include:

1. Cardiopulmonary arrest with return of spontaneous circulation (ROSC)
2. Known downtime of cardiac arrest. Downtime of less than 1 hour is desirable. No time limit of duration of resuscitative effort.
3. Persistent coma defined as not following commands, no speech, no eye opening, no purposeful movements to noxious stimuli; brainstem reflexes and pathological/posturing movements are permissible. GCS <8.
4. Blood pressure can be maintained at MAP >80 mmHg spontaneously or with low-moderate dose pressors.
5. Ability to initiate therapy immediately and up to 6 hours after return of spontaneous circulation.
6. Endotracheal intubation and mechanical ventilation required.
7. Age 19-85
8. Thrombolytic therapy does not preclude the use of hypothermia

Exclusion Criteria for therapy:

1. Significant cardiac arrhythmia or hemodynamic instability
2. ECG evidence of continuing acute ischemia
3. Evidence of sepsis
4. Coagulopathy, thrombocytopenia (platelets <75,000/mm^3) or active bleeding.
5. Known hypersensitivity of hypothermia (Raynaud's syndrome, sickle cell disease, or cryoglobulinemia)

6. Alternative reason for comatose state (head trauma, drug intoxication)
7. Pregnancy
8. Trauma patients
9. Pt/family not in agreement to go to LGH

The decision to initiate therapeutic hypothermia for resuscitated pre-hospital arrests by Lancaster EMS Paramedics will be made in conjunction with the Medical Command Physician.

*****ALL PATIENTS RECEIVING INDUCED HYPOTHERMIA MUST GO TO LGH******

PERFORMED BY: Paramedic and Paramedic Supervisor

EQUIPMENT: Appropriate monitoring equipment with airway management equipment, bag valve device with mask, suction, resuscitation medications, Cooler with 2 bags of Lactated Ringers cooled to 4° C, ice packs

PROCEDURE

1. Place temperature probe for continuous monitoring during transport.
2. Initiate cooling as rapidly as possible. Temperature goal is 33° C.
3. Sedate patient to prevent shivering. Repeat medications if shivering is noted..
4. Intravenous access should include a minimum of 2 peripheral lines 18g or larger. If unattainable utilize the EZ IO.
5. Rapid IV infusion of ice cold (4° C) Lactated Ringers, 30 ml/kg or 2-3 liters total at 100 ml/min. preferred access for fluid delivery is peripheral. IO and central venous access may also be utilized if unable to obtain peripheral.
6. Place ice packs to the neck, axilla and groin.
7. During transport the temperature is to be monitored every 10 minutes. Monitor for hypertension which may occur due to vasoconstriction. Cooling to 33°C may take 3-4 hours.
8. Complications of therapy
    a. Cardiac dysrhythmias, bradycardia
    b. If significant cardiac dysrhythmias, hemodynamic instability or active bleeding occur. Active cooling should be discontinued and active rewarming initiated.
    c. Metabolic abnormalities which include hypokalemia and hyperglycemia.
    d. Coagulopathy
    e. Infection from poor WBC function
    f. Systemic Inflammatory Response Syndrome
9. Report changes in assessment or report to Medical Command or Medical Direction as necessary.

DOCUMENTATION

As per PA Statewide Protocol Recommendations and Lancaster EMS Performance Improvement Required Documentation; electronic charting program

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Employee Spotlight

Diane Ray, Paramedic

What is your birth name?

Diane Lee Ray

Where were you born?

Lancaster General Hospital

Where do you live now? Lancaster City; I bought a house about 3 years ago.

Are you married? No, but I am still searching for my Prince Charming!

Do you have children? No, but I would love to. Now I just spoil my nieces and God daughters.

When did you start your career with Lancaster EMS? I was actually merged into Lancaster EMS as a full-time employee from West End Ambulance. I started at West End (first paid job) in September 1997. Though prior to the West End/Lancaster EMS consolidation I was on the Board for East Lampeter Ambulance and actually voted to merge East Lampeter and Lancaster EMS. Because I was secretary, my signature was actually needed to complete that merger. I still remember the president of the BODs at East Lampeter meeting me on the ramp at LGH while I was off loading a patient to get my signature so they could complete the first BLS company merger.

Do you work anywhere else? Yes, I am employed at Western Berks EMS as a part-time Paramedic.

What would you say has been the biggest change in your job since you started?

The biggest change would have to be the amount of employees we have here at Lancaster EMS. Through many mergers and additional trucks we have grown so much.

What would you say has been the worst change in your job since you started?

I would not say it has been the worst change because we have come such a long way since I began my career here. I think the hardest change has been with increase in personnel are those individuals realizing where the company came from. Lancaster EMS started out with an enormous debt and within a short amount of time was able to start making a profit to the point of larger % of raises, PTO payout, clothing allowance, educational opportunities; including, scholarships, contribution to our 401(k), yearend bonuses, state -of -the -art equipment, two new ambulances every year and annual banquets….I could go on and on. We need to sit back and appreciate what we have today because it was not always there. In 12-14 years this Company has come a long way. We still have a lot to do and the only way to make a change is to be part of that change.

What has been your most memorable experience during your time with Lancaster EMS? Wow, the first thing that comes to mind is getting the opportunity to meet Rudy Giuliani. It was in 2002 and he came to speak at the Lancaster Chamber of Commerce Dinner.

What hobbies/interests do you have outside of your job? Shopping has got to be at the top of my list; traveling and scrapbooking. And of course spending as much time as possible with my friends and especially my family.

Do you have any advice for new employees starting the same job? Be humble and honest! No one knows it all, and there is always someone out there that knows more than you. Listen to your patient's. Have PRIDE! And most of all never stop learning.

Employee Spotlight

Tom Brosey, Wheelchair Van Attendant

What is your birth name? Thomas David Brosey

Where were you born? Lancaster General Hospital on Jan. 4th, 1952. I was with my mother at the time. My dad would devil me about being 5 days late –he could have claimed me on his taxes.

Where do you live now? In the Willow Street area. In the past 30 years, I have lived in 3 different homes, all within a 2 mile radius.

Are you married? I have been married for almost 38 years. Debbie is probably the best thing that entered my life, but I really don't want her to know that. The first time we met she didn't like me. I often jokingly say today that she's my best friend and she doesn't even like me.

Do you have children? We have one child, Chris, age 36. He is married to a wonderful girl, Steph. They have given us a grandson, Noah, age 4 and a granddaughter, Eva, 7 months old. Because of our German ancestry, they call us Opa and Oma.

When did you start your career with Lancaster EMS? Did you work in EMS prior to working here? I became a member of the Lancaster EMS family in Sept. of 2007.

Do you work anywhere else? Prior to Lancaster EMS, I worked at RR Donelly for 32 years where I retired at the age of 55. I stared my job at Lancaster EMS after only a 2 day off period.

What would you say has been the biggest change in your job since you started? The biggest challenge during my job at Lancaster EMS has been not being comfortable with what I was doing. I was totally out of my box. After 32 years with RRD as a craftsman I was now a novice again.

What has been your most memorable experience during your time with Lancaster EMS?

I get great satisfaction hearing that previous patients specifically ask for me by name when they need future transports.

What hobbies/interests do you have outside of your job? I used to enjoy hunting and fishing, but over the years, as my son went his own way and had his own family, I lost my partner. When Noah gets older, I am sure the fishing will become a large part of my life again.

Do you have any advice for new employees starting the same job? My advice for people who start in any medical field is to show compassion. A large percentage of Lancaster EMS transports are people who have had life altering occurrences; be it auto accident, CVA or late stage cancer. A smile, twinkle of the eye, soft touch of your hand or kind spoken words of encouragement mean more than you can imagine.

Haiti, The Aftermath

By Julie Rutt, Paramedic

I was recently provided an opportunity to travel to Haiti for a week to help provide medical aid. It was an incredible experience, and I am so thankful that I was able to go.

John Stoltzfus, a former volunteer with Lancaster EMS, has connections with a ministry in Haiti and is organizing medical and construction teams to go and assist the church. There was a church with approximately 50-60 families in attendance that collapsed on the congregation during the earthquake. They lost around 30 church members. The church is currently trying to rebuild their homes, and then reach out to the community and help to rebuild.

I did not know much going down other than I needed to bring my own food, I would be sleeping in a tent, and I would be giving medical aid. On the way I was not quite sure what to expect but thought I would see a fair amount of gruesome things from injures to destruction of buildings. Getting to Haiti was a little bit of an adventure. I was informed a few days before flying out that I was the medical team. Apparently volunteers were slim this week. I would be working with other medical people already down there but would be traveling by myself. After being picked up at the airport (remind me to tell you that story sometime…) I was astounded driving back to the compound I would be calling "home" for the next week. Some houses looked perfectly fine and some houses were completely destroyed. Some destroyed houses were cleaned up; others look like they have not even been touched yet. There were fields full of tents. There were shelters made of sheets and tarps in the medians of very busy streets. Children were sitting outside those homes, in the street, in a "safe" area created by laying some pieces of rubble on the street to keep the cars from getting too close to their "homes". I was happy to arrive to a solid wooden shelter with bunk beds (they were plywood, but still very nice!) a roof, and even ceiling fans for when we had occasional electric. We had a shower and a toilet! The facilities were complements of one of the recent construction teams. I almost felt a little guilty living in such "lavish" facilities while the people we were serving were still living under sheets.

The group I was helping, "Haiti Family Ministries," began providing street clinics as a way of reaching out to the community after the earthquakes. I would be helping out with these clinics. We had two clinics a day, one in the morning and one in the afternoon. At the clinics, there were locals who were able to act as translators for us, so we would sit down with a translator, an interpreter, and our patient and try to figure out what was wrong with them. To be quite honest, this was a bit challenging for me. Give me a broken leg, difficulty breathing, or have a seizure and I am in my comfort zone. Come to me complaining of abdominal pain and vomiting and I am kind of clueless. Generally we do not come up with treatment plans for people like this in the field. I was thankful for the nurses who did not mind my constant "So, this person is complaining of ……and …….. I was thinking of giving them …… , what do you think?" I tended to allow the nurses to do the stations as there were usually not enough translators for all of us anyway, and it helped out in other ways. I helped the local med school student with a wound care station, and helped the pharmacist bag up and hand out meds. We had a nurse, a doctor, a pharmacist and 4 nurse midwives on our compound that week. There were a lot of complaints that we could not do anything for. We did not treat most coughs, because the dust was making everyone cough. We did not treat much for itchy/dry/irritated eyes, because again, the dust was most of the cause of any of those complaints. Many people had complaints related to anxiety and stress, and there was not much we could do for them either. It was a little disheartening sometimes to sit down and explain through a translator that there was not anything we could do for them. Before we dismissed each patient, it was the goal of the ministry to pray for each of the patients. We acknowledged that there was so much that we did not have medications for, or things that medications could not treat. But we also acknowledged that our pharmaceutical and medical knowledge was nothing compared to the healing power of Jesus Christ. So before they were dismissed we prayed for healing over our patients, even if we did have some medications to send home with them. Some of the common things we saw at the clinics were scabies, ringworm, vomiting/diarrhea/fever, dizziness, infected wounds and anxiety related complaints.

Haiti, The Aftermath, cont'd.

I am not quite sure how this connection was formed, but there was also a nearby hospital that several of our staff members helped at. I did night shifts there in the ER. That was a little more fun for me, as I was a bit more in my element. I helped out as an ER tech, doing blood work, IVs, medications, assessments and triaging patients. The staff there was great. They were from all over America and Europe.

One of the days I also had the opportunity to travel to an orphanage and help out at a clinic. The orphanage was located somewhere else before the quake struck, but their building was completely destroyed. There is one man currently caring for 60 children by himself. About half of them are true orphans; the others are (temporarily?) left by their parents. I traveled in a very overloaded SUV down some very bumpy narrow roads to get there. These 60 children are living under a large blue tarp and two camping tents. I have no idea how they do it. They were so happy and full of joy. As the physician and the nurse did diagnosing and assessing, they handed the kids to me to follow through the treatments.

I tried to imagine living like the Haitians do with so little even before the quake; many of them with nothing more than the clothes on their backs. I must say, I can not imagine living with so little. I made a pretty tasteless statement, and after it came out I realized how spoiled I was. While rummaging through my duffle bag looking for something, I reported "I hate living out of duffle bags." And then I looked up to see the wonderful, solid wooden structure over my head, and realized that pretty much everyone here would be happy just to have a duffle bag and something to put in it. We are so spoiled here, and so many people do not realize that. The hospital we were working out of was ridiculous. If we went to a hospital like that in the states, it would probably be shut down immediately. The operating room had open windows. Patients were living out in tents. You might actually get a hospital bed if you were lucky, and then if you were *really* lucky it might actually have a mattress on it. If your family members did not bring sheets with them, you will be sleeping directly on one of the fluid absorbing foam mattresses. I can't begin to imaging what is growing in those after seeing pts in the ER for a few days. You need intubated? Sorry this hospital can not accommodate that, not to mention you will suck up all the available oxygen. Blood work is only available during the daytime when the lab is open. Sorry if you are having a crisis overnight. There were several patients who died in the ER who probably would have had a great chance in a civilized hospital. One of our doctors was very torn up after a patient of his died from TB. He is a pediatric critical care physician who is used to anything being at his beckon call. But with the resourses he had, he made the best decisions in treatment that he could. Unfortunately the girl died, not from his direct actions, but more because he could not do everything he needed to help her. He is at peace with his decisions, but I think that will be hard for him to ever forget. While their poverty and their healthcare is hard to image, one thing I do appreciate is their laid back way of life. We operated by "Haitian" time. They say 3, you are lucky if they come by 3:30. No one is constantly looking at their watch, rushing from place to place. Kids do not have their entire days planned for them with music, language, sports and chess lessons. I actually did have internet access at the hospital, but chose not to do anything other than send my family and a few friends one "I am still alive" email. (shh, do not tell them. I made it sound like that was the only time I had access. Well, there *was* a line at the computer… J) It was relaxing not having 50 things on my mind. And I did not want to have to start keeping up with email conversations. The week stayed exciting, and went by pretty fast. Soon, I was waiting 8 hours in the airport for my flight home. I took home a greater appreciation for what we have here. I will hopefully keep that with me for a long time. But unfortunately we are quick to fall back into our old habits. Next time my car gets a flat tire, I "do not have anything to eat" in my fridge, or my heating oil is too expensive, I guess I need to take some time to be thankful that I even experience those "woes." My house is not lying in a pile; I have my family, a job, and the means to support myself. We are so blessed here in this country. Please take a moment to be thankful for what you do have, even if you don't have "everything." I am also very thankful for our germ phobic medical facilities. We have anything we want; antiseptics, tests, pills, doctors, and specialists at our fingertips. So far I have only brought home with me, a cold, which I seem to get with weather changes. I am not sure how long ringworm, scabies, typhoid, TB or malaria take to show signs and symptoms, but UGGG… I sure hope they don't appear. I will take my cold anytime over any of those!

If anyone is interested in going down to help, John is still recruiting volunteers. You can email him at jj510ff@yahoo.com. Things change on a weekly basis there, but you now have sleeping quarters, nice facilities, and some meals provided. John will arrange your flights, but you are responsible for the costs.

Healthy Portion Sizes

Did you know that in the 1980s, a typical bagel had 140 calories and a 3-inch diameter? These days, a bagel averages 6 inches – and a whopping 350 calories! With 64-ounce fountain drinks and "mega packs" of snack foods readily available, massive restaurant entrees, and the ability to "up-size" fast food for pennies more, it is easy to get confused about proper portion size.

What is a Portion?
A "portion" can be thought of as the amount of a specific food an individual eats for a meal or snack. Many factors affect food portions, such as the individual's age, gender, activity level, appetite, and where/when the food is obtained and eaten.

What is the Difference between Portions and Servings?
A portion is the amount of food you choose to eat. There is no "standard" portion size and no single "right" or "wrong" portion size. A serving is a standard amount (issued by the USDA) used to help give advice about how much to eat, or to identify how many calories and nutrients are in a particular food. This is the information located on the nutritional label of a food product.
For example:
You eat a sandwich with 2 slices of bread.
- The USDA's Food Guide Pyramid serving slice for bread is 1 slice (www.mypyramid.gov).
- Your portion is 2 slices, which equals 2 servings.

Determining Healthy Portion Sizes
For a general idea of the amount of food you should be consuming, use the following recommendations:
- A serving of meat is about 2 or 3 ounces – about the size of a deck of cards, or the palm of your hand.
- One serving of grains is equal to one slice of bread, one ounce of cereal, or half a cup of pasta or rice.
- A serving of fruit or vegetables is equal to one piece of fresh fruit or vegetable, half a cup of chopped, or ¾ cup of either juice. In general, however, it's not as necessary to be vigilant about vegetable and fruit intake, as any amount is healthy – just be aware of the sugar content in fruit.
- The key to any meal is to have three-fourths of your plate covered with vegetables, and one-fourth with meat or pasta.

Assuming a 10-inch dinner plate, the following photos show proper portion sizes:

Break Down Your Meal
It might be easier to figure out how much you are consuming if you actually stop and mentally dissect how much you are about to eat. For example, here is how you would break down a spaghetti dinner:

Spaghetti Noodles –
Your portion: 2 cups
Serving (according to the Food Guide Pyramid): ½ cup
Number of pasta servings: 4

Tomato Sauce –
Your portion: 1 cup
Serving: ½ cup
Number of sauce servings: 2

Meatballs –
Your portion: 6 ounces
Serving: 2-3 ounces
Number of meatball servings: 2-3

Don't forget to calculate any appetizers, drinks, or side dishes you consume with your meal as well; for example:

Garlic Bread –
Your portion: 2 slices
Serving: 1 slice
Number of bread servings: 2

Soft Drink –
Your portion: 24 ounces
Serving: 12 ounces
Number of beverage servings: 2

According to the above, that one meal satisfied the recommended servings of meat for the day, and possibly even grains as well. When taking into account other meals, snacks, and beverages consumed throughout the day, it is easy to see why so many Americans end up overeating.

It's important to follow the Food Guide Pyramid for guidelines on how many servings to consume each day (see chart to right). Your portions do not have to match the standard serving size – they can be smaller or larger.

However, the amount you eat throughout the day should match the total amount of food that is recommended.

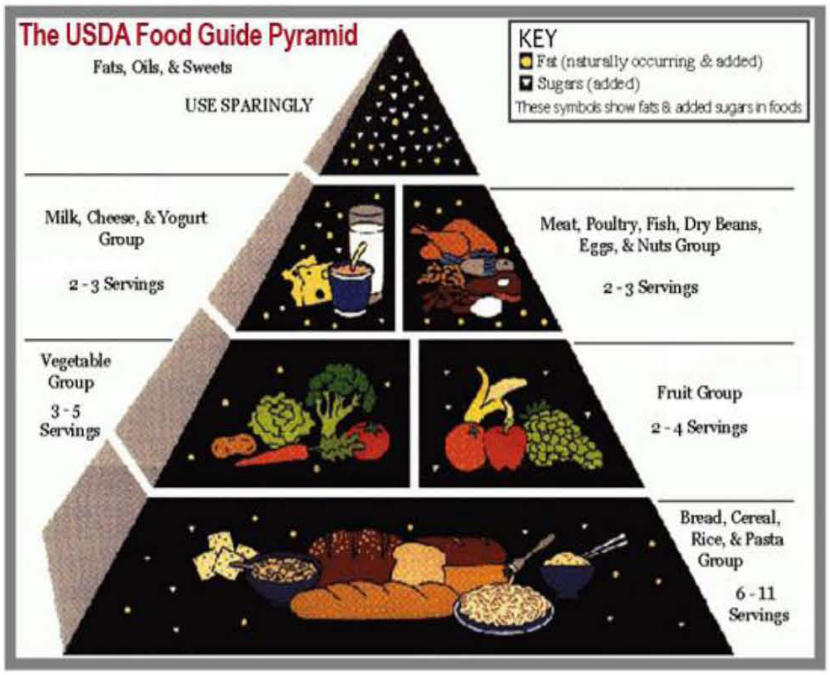
Tips for Choosing Sensible Portions

When eating out –
- Choose a "small" or "medium" portion, or if at dinner, see if you can have the "kids" or "lunch" portion.
- If the main dish portions are larger than you want, order an appetizer or side dish instead, or split the main entrée with a friend.
- Never force yourself to keep eating. When you are full, stop. Take the rest home and enjoy it as a meal the next day.
- Stay away from "all-you-can-eat" buffets.

At home –
- Every so often, measure out the typical portion of foods you eat often, using standard measuring cups. This will help you estimate the portion size – and you'll likely be surprised to find out exactly how much you are eating.
- Use a smaller plate for your meal. People tend to eat more out of habit when it's from a bigger plate.
- Put sensible portions on your plate at the beginning of the meal, and don't go back for seconds. Chances are, if you sit back and let your meal digest, you will find you are satisfied in about 10-15 minutes.

Did you know...?

- Children ages 2-6, many inactive women, and some older adults may need about 1,600 calories a day.
- Most children over age 6, teen girls, active women, and many inactive men may need about 2,200 calories a day.
- Teen boys and active men may need about 2,800 calories a day.



From Humble Beginnings

By Ted Goldman, NREMT-P, MICP, FP, Chief Operations Officer

1962 Hearse Ambulance

Few people realize that modern EMS has only been around for the last 40 years. In the first half of the 20th century, many ambulance services were operated by community funeral homes. The hearses were used to transport sick and injured persons to the hospital, as well as those individuals who died, to the funeral home. The funeral home attendants had little first aid training. The funeral homes were in the ambulance business simply because their vehicles were large enough to accommodate the long stretchers.

After World War 2, a number of civilian rescue squads and ambulance services began to emerge in the United States. Most of the rescue personnel, while well intentioned, were untrained, poorly equipped, unorganized and unsophisticated. The systems were unregulated. There were no minimal training standards for ambulance personnel and no training programs existed for basic first aid. Pre-hospital care in the U.S. evolved into a patch-work of well intentioned, but uncoordinated efforts. This all began to change in the mid-sixties.

In 1966, the National Academy of Sciences published a report entitled Accidental Death and Disability: The Neglected Disease of Modern Society. This report quantified the magnitude of traffic-related death and disability while vividly describing the deficiencies in pre-hospital care in the United States. The "white paper" made a number of recommendations regarding ambulance systems, including a call for ambulance standards, state-level policies and regulations, and adopting methodology for providing consistent ambulance services at the local level.

Also in 1966, the Highway Traffic Safety Act established the U.S. Department of Transportation and awarded that agency the authority and responsibility to improve EMS education, including the development and implementation of training standards. States were encouraged to develop state EMS offices with part of the costs paid by the Highway Safety Programs.

These two historic milestones spearheaded the evolution of EMS in the United States.

A Snapshot of "Then and Now"

In the 1960's pre-hospital care generally was limited to a "scoop and run" operation. Additionally, ambulances transported patients back to the hospitals in which they were based, regardless of whether another hospital was closer or better equipped to handle that specific patient's medical condition. This often left whole areas of a community without ambulance coverage. Furthermore, ambulances would be tied up in performing transfers, and none would be available for emergencies.

There was a lack of uniform and adequate federal, state, and local laws and standards concerning EMS (only six states had written standards). Both the ambulance and equipment carried onboard (if any at all) were of poor quality and design. The vehicle offered little room for patient, attendant or equipment. Radio communications between emergency services and hospital was seriously lacking. Only 5% of the nation's ambulances had radio contact with a hospital.

1975 Ambulance

Personnel were sadly lacking training for emergency care of patients. Only about 50% of the nation's EMS personnel had American Red Cross certificates and many had no training at all. Hospitals themselves were staffing emergency room with part-time physicians, who may or may not have training or experience in emergency care or trauma.

In 1974 the first aid boxes weighed about 100 lbs. and were similar to large tackle boxes. They looked like the old tube caddies carried by the TV repairmen. Early radio communications were also very unreliable.

From Humble Beginnings

Today EMS equipment is specially designed to be portable and lightweight. The technology is accurate and sophisticated. Most equipment is compact, which helps when carrying down an embankment to a crash scene or into a wooded area some distance from the nearest highway.

Ambulances can be high-tech, mobile emergency rooms or specially equipped vans used for non-emergency transports. There is no longer one type of ambulance. Services change and adapt to various needs.

Computers, cell phones, and fax machines have also revolutionized EMS care. For example, an EMT can do a comprehensive EKG at the scene and the computer inside the LifePak tells them what kind of arrhythmia they may be dealing with and even gives suggestions for treatments. These reports are transmitted by fax from the scene to the emergency department.

Not only has computer technology helped save patients' lives, it has also made paperwork muck easier. Reports, statistics, medical records, log sheets are all easier because of computer technology. Soon Palm-Pilot technology could eliminate hand written reports.

EMS in the United States has enjoyed many successes. Not only did EMS systems grow, EMS became a career and volunteer activity for hundreds of thousands of talented, committed and dedicated individuals. Emergency medical care is available to virtually every citizen in the country by simply dialing 911 from ant telephone. This was an extraordinary accomplishment in a relative short period of time.

The greatest accomplishment of EMS, however, is the fact that more lives are being saved. EMS providers treat nearly 20 million patients a year in the United States. Many of these have complicated medical or traumatic conditions that require considerable knowledge, skill and judgment. Some are critically injured and the proper care can literally make the difference between life and death. Today EMS is accepted as one of the "Big Three" public safety responders: Police, Fire and EMS, and for its lifesaving capability.

One of the earliest portable defibrillators.

Today's Lifepak 15 defibrillator/monitor

Meet the LGH Trauma Team

This issue's Team Member:

Frederick B. Rogers, MD, MS, FACS

Medical Director, Trauma Program, Lancaster General

Medical Education:

Univ. of Vermont College of Medicine

Univ. of Illinois at Chicago, MS in Surgery

Certified:

American Board of Surgery

Advanced Trauma Life Support Instructor

Areas of Subspecialty Expertise:

Trauma

Surgical Critical Care

Research:

Dr. Rogers' clinical research interests are trauma care and rural trauma systems design and development. In trauma care, his special interest is venous thrombo-embolism following trauma. In 1990, he began placing prophylactic vena cava filters in high-risk trauma patients to prevent pulmonary embolism, which achieved widespread acceptance in most major trauma centers across the United States.

He has chaired a national task force that developed guidelines for the prevention and management of venous thromboembolism following trauma and has written numerous papers on the subject of rural trauma system development.

Faces of Lancaster EMS

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NATIONAL EMERGENCY MEDICAL SERVICES WEEK

May 16th - May 22nd

EMS

ANYTIME. ANYWHERE. WE'LL BE THERE.