FLIGHT FOR LIFE
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FLIGHT ROUNDS
SUMMER 2013

Case Study: Your Patient is a Palindrome

by Amy Puls, RN, Flight Nurse
FFL–Fond du Lac Base

Palindrome: a word, line, verse, number, sentence, etc., that reads the same backward and forward.[3]

Case Study

You are requested for an interfacility transport of a patient with severe pneumonia. She is intubated, on a ventilator, receiving Dopamine for blood pressure support and is on a Remodulin drip for pulmonary arterial hypertension (PAH). Upon your arrival, you find the patient lying supine in the hospital bed, with a radial arterial line, a left internal jugular, and another long term indwelling central catheter in her chest where the Remodulin drip infuses via a home IV pump. The sending nurse reports to you that the patient's past medical history includes the following: coronary artery disease, pulmonary hypertension, myocardial infarction, cardiac valve replacement, chronic obstructive pulmonary disease, congestive heart failure, atrial fibrillation, and Kartagener's Syndrome. As you start to absorb the multitude of comorbidities and prioritize transport treatment options the nurse adds, "Oh by the way…she also has Dextrocardia Situs Inversus." You immediately think, "She has a-what-a-versus-who?" How will you handle this patient? Are there any special treatment considerations needed based on her past medical history that may impact your delivery of care during transport?

Dextrocardia Situs Inversus

Dextrocardia Situs Inversus is a rare, congenital heart condition occurring in about one to two out of 20,000 births where the tip of the heart (or apex) is positioned on the right side of the chest (dextrocardia) rather than the normal left side.[1] Some visceral organs, such as the liver and spleen, are reversed as well (situs inversus) placing the liver on the left side of the abdomen and the spleen on the right[1] (Figure 2). There are several types of dextrocardia, the simplest being the one discussed here, where the heart and visceral organs are essentially a mirror image of their normal anatomical locations.[1] It is common for people with dextrocardia to also have problems with the function of the cilia in the nasal and airway passages leading to a potential for further respiratory problems such as frequent pneumonias (Kartagener's Syndrome).

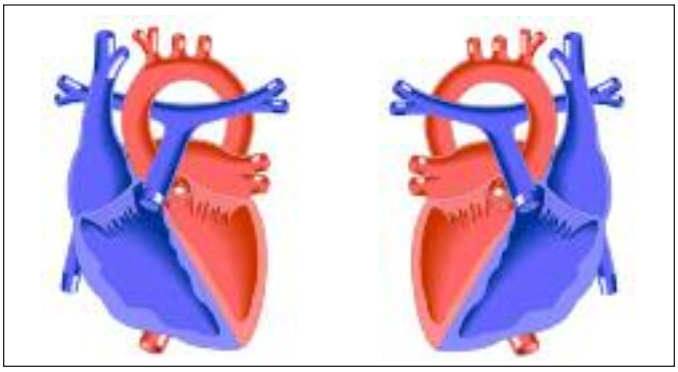

Figure 1: Normal cardiac position (left) versus that of dextrocardia (right)

There are no outward symptoms of dextrocardia. In fact, many people live normal lives without even knowing they have it until their first pulmonary infection and/or the need for a chest xray. Thus, treatment of dextrocardia is not necessary unless the person experiences complications as with Kartagener's Syndrome.[1] There are many other potential complications such as intestinal blockages due to malrotation, congestive heart failure, and death.

Implications for EMS providers

With dextrocardia being so rare, it is possible you will never encounter a patient with it. If you do, however, there are some important points to consider.

First, it is important to place the ECG leads in a mirror image across the right side of the chest. If the leads are placed in their traditional location, the ECG limb leads will show inverted P and T waves in lead I and II, and positive in lead III – indicating abnormal P wave axis in

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Your Patient is a Palindrome

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the direction of the foot and to the right.[2] Additionally, the QRS complex will be negative in lead I, and positive in lead aVF, indicating a right axis deviation[2] (FIGURE 3). The chest leads will show tall R wave in V1, which progressively decreases toward V6 backwards from the normal progression of increasing QRS amplitude toward V6.[2] If you are savvy with EKG interpretation, this will likely alert you to the fact that something is not right and may actually help in identifying cardiac defects such as dextrocardia.

FIGURE 2: Organ placement in Situs Inversus Totalis

Second, unless anterior/posterior pad placement is used, defibrillator pad placement should be reversed where the apex pad should be placed on the right side of the chest rather than the left. CPR technique should remain unchanged.

Third, keep in mind that if the heart is a mirror image, so are the lungs. Therefore, the right lung with three lobes will now be on the left and the left lung with two lobes will be on the right. This will have implications when auscultating lung sounds during intubation. A mainstem bronchus intubation will now likely occur in the left lung and will be detected as decreased lung sounds on the right chest rather than the left.

FIGURE 3: Dextrocardia can be a cause for inverted P and T waves as well as QRS inversion in lead I in addition to dominant R wave in V1

Fourth, auscultating heart tones should be down the right sternal border rather than left. Likewise, pericardiocentesis should be done with the needle aimed toward the right shoulder rather than the left.

Lastly, if there is situs inversus totalis, where all the abdominal organs are reversed then trauma to the right side may be cause for suspicion of a splenic injury. Likewise, trauma to the left side will more likely be associated with a hepatic injury.

Keep in mind that because you cannot diagnose dextrocardia in the field, treatments you need to perform should not be changed unless specifically suggested and granted by your medical control. If suspicions of dextrocardia arise, call your medical control to discuss the possibility of treatment adjustments as needed.

Regardless of the likelihood of having a patient with dextrocardia, the critical thinking and assessment skills described above are beneficial for you to use with any patient. Keeping an open mind during critical care assessment can help you avoid tunnel vision when faced with complicated situations. The next time your patient corrects you when you call him Aidan and says, "Madam, I'm Adam," it will remind you to keep dextrocardia on your "radar" as a *medical palindrome*.

References:

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3. Palindrome. (n.d.). In Dictionary online. Retrieved from http://dictionary.reference.com/browse/palindrome?s=t
4. Schumacher, K. R. & Zieve, D. (2012), PubMed Health, A.D.A.M. Medical Encyclopedia. Dextrocardia. Retrieved from http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0004579/

Conference Topics Announced

Plan now to attend Flight For Life's 29th Annual Emergency Services Conference: Trends and Issues 2013. It will be held at Kenosha County Center on Saturday, September 28, 2013 from 8 am - 3:40 pm. Topics will include:

- *Dazed and Confused...Recognition, Assessment and Management of the Altered Child*
- *Escaping the Shame of an Immoral Action: Honorable Suicide*
- *Embracing Life's Journey*
- *From Bullets to Bandages, Lessons Learned from Military Medicine and its Application to Everyday EMS*
- *Air Medical Response to a HazMat Scene - Lessons Learned*
- *Just Bubbles: Case of Surgical Cricothyrotomy in a Deep Penetrating Neck Wound*

Congratulations to our 2012 SCYA Winners!

Waukesha Base:

- Burlington Rescue Squad
- Somers Fire & Rescue Department

McHenry Base:

- Barrington Countryside Fire Protection District
- Woodstock Fire & Rescue District

Fond du Lac Base:

- Orange Cross Ambulance & Road America Safety Team
- Mt. Calvary Ambulance & Town of Calument Fire Department

MABAS in Wisconsin

by Andrew Jensen, CFC, EMT-B
***FLIGHT FOR LIFE** Communication Specialist*

I have been with Flight For Life for three years as a Communications Specialist and have held positions in fire and EMS since 2001.

Since its inception in Milwaukee County, I have become heavily involved in MABAS (Mutual Aid Box Alarm System) in various roles. Most importantly, I volunteered to be a part of the training and outreach committee at the state level. With this committee, and the assistance of the Wisconsin Emergency Management Fire Service Coordinator, we are able to extend a mechanism for training new and existing MABAS divisions in startup, communications, planning, and operations.

The MABAS system is the mutual aid program of choice adopted by the State of Wisconsin. MABAS provides assistance to communities for challenging incidents involving fire, medical or disaster situations, as well as hazmat, and technical rescue. MABAS provides standardization for dispatch, response, communications and assistance.

With the variety of free training programs provided by MABAS Wisconsin, I've been able to travel to numerous counties across the state and deliver the MABAS programs to fire, EMS, dispatch, and emergency management staff members. I strive to train our partners about a system that is organized, efficient, and a cost effective means of assistance to a stricken community in the time of need.

Most recently I was elected to the position of MABAS Wisconsin Secretary on the executive board. With this added responsibility, I am able to learn and give input on crucial functions within the MABAS system.

There is a large task at hand in assuring all MABAS divisions receive accurate and efficient means of training. I take pride and passion in providing everyone with the appropriate level of training. I am fortunate to work with all types of members, including full-time, combination, and volunteer agencies, and learn from their experiences.

I look forward to working with all the responders, dispatchers, and emergency management staff in their MABAS endeavors.

RSQ911 – We Want Your Feedback!

by Jayce Commo, Customer Service/Outreach Coordinator, FFL-Fond du Lac Base

Flight For Life always strives to provide the optimum in quality care and service, and feedback from our customers is a key tool in ensuring that commitment. For almost a year now, we have utilized RSQ911 Solutions, a web-based program geared toward critical care transport organizations. All of our patient care partners – pre-hospital, referring hospital, and receiving hospital providers – now have an opportunity to let us know how we're doing on each and every transport. RSQ911 even includes a patient survey that can be filled out by each patient and their family.*

The process is simple: a Flight For Life crew member will leave behind a slip of paper with a unique code number to designate that particular transport (surveys can also be completed without the unique code if necessary). Users can then go to www.rsq911solutions.com and enter in the code to begin the brief survey. It's that easy!

Flight For Life uses the information submitted in a number of ways. Most importantly, the data collected helps us make sure we're providing the very best service possible. Because RSQ911 Solutions is a nation-wide survey tool in the critical care industry, the data we collect can be measured against other programs around the country. RSQ911 also provides instant notification to the Flight For Life management team if a survey falls below a minimum level of performance, or if the user requests to be contacted about a particular transport. This ensures issues can be addressed and, if possible, corrected as quickly and efficiently as possible.

Your feedback is a valuable tool in improving our service, and we thank you for your participation!

*Currently RSQ911 Solutions does not offer a dispatch survey, but we are working closely with them and hope to have one available within the next twelve months. As always, all of our partners in dispatch have the opportunity to fill out a "dispatch survey" found on the main page of our website, www.flightforlife.org.

Safety Coin HALF Price Sale
Now $5 each
Order form is at: www.flightforlife.org
Under "Quick Links"

Safety Day 2012 – "Our Shared Values"

by Mike Anderson, EMT-P, Flight Paramedic, FFL-McHenry Base, Safety Officer

1. *FLIGHT FOR LIFE* is committed to providing an air medical program that regards safety as paramount.

Flight For Life has hosted a Safety Day for the past seventeen years. The idea was borrowed from our armed forces who annually review safety practices and procedures. In cases where there has been an accident or incident, a "safety stand down" can be called to examine the event. The idea is to stop doing everything else and take a hard look at potential contributing factors and hopefully prevent further occurrences.

Our annual "safety day" is a day when we gather as an organization and dedicate the day to safety and safety-related topics. Educational, as well as informative, it is meant to be a day to stop, take a step back, and to reflect on our day-to-day operations.

Having bases in two states has always been a challenging dynamic. Logistically, maintaining bases miles apart with different types of aircraft, differing licensing requirements, different protocols, and jurisdictional issues are just a few of the hurdles that need to be crossed.

Early safety days were some of the first times our flight crews actually got together. Usually conducted at a fire department with some open land and a wooded area out back (e.g., Spring Grove F.D.), our crews would practice survival skills such as shelter making, fire starting, and first aid.

After a couple of years, several team members built a helicopter egress trainer. This consisted of a box with the same inside dimensions as an aircraft, made of plywood, with seats and sliding doors. It was dark in there. The box could be moved from side to side to simulate flight and a hard landing. Then the crew inside would safely exit the "aircraft" and perform other survival tasks. It was a lot of fun!

The simulator became more sophisticated over ensuing years. An intercom was installed. Dark just wasn't good enough anymore so a smoke generator was installed. The trainer was used for a number of years but eventually began to deteriorate due to heavy use.

In an earlier *Flight Rounds,* it was announced that Flight For Life had been awarded the 2011 American Eurocopter Vision Zero Aviation safety award. There was a monetary component included in this prestigious award. Some of that money was used to purchase and transport a decommissioned helicopter to our Waukesha base.

Over the summer of 2012, this helicopter "shell" was converted to our new Aircraft Training Simulator (ATS) which was featured as one of the breakout stations in the afternoon session of last year's safety day events. Even though the simulator is in the early stages of development, it is still dark in there and the cabin might fill up with smoke. The idea is still to find your way out safely after a "hard" landing. As work continues on the ATS, we hope to include patient care scenarios in the helicopter setting.

Safety day also features speakers along with other hands-on activities. This past year, Marcia Cronce, a meteorologist with NOAA, gave a lecture on aviation weather forecasting to help our crews make more informed weather decisions.

Aviation topics were not alone as topics of discussion. Dr. Colella, Co-Medical Director of Flight For Life, did a medical case review that highlighted the importance of proper medication use.

Policies and approaches to better train agencies that work with us on setting up and maintaining secure landing zones were covered in the classroom as well as hands-on breakout sessions in the afternoon.

Flight crews reviewed the use of Nextels and Garmin GPS units in the aircraft survival packs to be better acquainted with the use of these devices.

Fire extinguisher use was demonstrated and participants were able to use extinguishers to extinguish "live fires." This was especially well received by our administrative staff members.

Our annual Safety Day is an important aspect of Flight For Life's safety culture. It allows us to build camaraderie among our colleagues as well as continue to improve our number one priority: SAFETY!

FFL's NEW Aircraft Guard vest is available for $25 as part of a LZ Kit or separately. Call Kathy at 414-778-5435 to order.

FLIGHT FOR LIFE – Fond du Lac Base to Celebrate Five Year Anniversary

by Jayce Commo, Customer Service/Outreach Coordinator, FFL-Fond du Lac Base

It's seems like only yesterday. Most good things usually do. A little over five years ago, twelve newly hired medical crew members were well into their training,

preparing to open Flight For Life's third base - this one located in Fond du Lac, Wisconsin. On August 4, 2008, at 7 am, Flight For Life-Fond du Lac Base officially opened. The excitement in the air was palpable, but short lived; just seven minutes after officially going into service, FFL-Fond du Lac received their first flight.

Now, five years and almost 1,500 safe patient transports later, FFL-Fond du Lac continues to serve southeastern Wisconsin with their 24-hour aircraft located at the Fond du Lac County Airport. None of this would have been possible without the continued support of our partners in Fire, EMS, Law Enforcement, Dispatch, and our Hospital providers. We can't thank you enough for making our first five years so successful, and we look forward to working with all of you for many years to come!

The Flight For Life Customer Service Advisory Board met at our Waukesha headquarters in May for one of their two yearly meetings.

Highlighting an Illinois Dispatch Center: SEECOM

by Matthew Diamond, Telecommunicator, SEECOM

9-1-1 Where is your emergency?
This is the first question to initiate a life saving emergency response. Whether it is a law enforcement, fire department, or emergency medical request, one call can do it all. At Southeast Emergency Communications (SEECOM), the 9-1-1 telecommunicators never know what that next call will be. SEECOM serves 14 police and fire agencies in the southeast area of McHenry County Illinois. SEECOM is the primary dispatch center for MABAS Division 5.

Matt and his crew at SEECOM

Geographically SEECOM covers over 150 square miles, primarily suburban residential with some rural or agricultural area with a population of about 100,000. The agencies SEECOM serves respond to approximately 60,000 calls for service (police, fire, and EMS) annually. The 9-1-1 telecommunicators answer about 100,000 calls a year.

When a 9-1-1 call is received, the answering telecommunicator determines and confirms the location of the incident and the type of call. If it is a non-priority, or not-in-progress call, the telecommunicator will advise and transfer the call to the telecommunicator who is assigned to that agency. If it is a priority call (police, fire, or EMS), the initial answering operator will dispatch the call then the operator assigned to that agency will handle the call from that point forward. For Fire calls, the fire dispatcher will handle any additional requests – MABAS Box Alarms, requesting Flight For Life, or any of the utility companies.

SEECOM operators continuously update information into the CAD (Computer Aided Dispatch) system so the police officers and firefighters have accurate chronological documentation of the calls.

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An Amazing Survival and Recovery

by Tammy Chatman, CMTE, Professional Relations/ Marketing Manager, FFL-McHenry Base

April 6, 2012, which happened to be Good Friday, will forever be remembered by the family of then 16 year old Morgan Hofmann. Morgan and his friends were "long-boarding" (a longboard is a longer and faster version of a skateboard) in a new subdivision in Woodstock when he fell and hit his head. Unfortunately, Morgan was not wearing a helmet at the time, and he suffered a traumatic brain injury (TBI). Fortunately, his friend Adam recognized he needed help and called 911; Woodstock Police and Fire/Rescue responded to the scene.

Eric Lozowski, Woodstock firefighter/paramedic, was the ambulance officer in the arriving ambulance. Eric has two boys of his own and understood the gravity of what Morgan's parents would be facing with an injury such as this. "All I could think of was that this was Good Friday, typically the beginning of a time of joy and celebration, but Morgan's family would be spending this weekend and potentially many others in a hospital watching over their son."

After assessment by the paramedics, Flight For Life-McHenry was dispatched and Morgan was transported to Advocate Lutheran General Hospital in Park Ridge. His prognosis for survival and recovery was very poor. Flight nurse Patty Mitchell recalled afterwards, "As I finished Morgan's chart, I hoped that his outcome would be different than a previous skateboarder that I had flown with the same type of injury. That young man did not survive, and I did not want that to happen to Morgan and his family."

Morgan was hospitalized at Lutheran General until April 30 and then transferred to the Rehabilitation Institute of Chicago for inpatient rehab where he stayed for only 13 days! He was discharged home on May 12 and continued his outpatient rehab at Centegra Neuro Rehab in Crystal Lake. On August 16, he started his senior year at Woodstock High School.

Many things worked in Morgan's favor that day. Woodstock Fire/Rescue recognized his need to go a pediatric-capable Level I Trauma Center based upon his injuries, FFL-McHenry was available to provide rapid transport to Lutheran General Hospital, and he was enrolled into a very promising multi-national clinical trial called SyNAPSe that is trialing the use of progesterone to improve the neurological outcome of patients with TBI. Lutheran General is one of only 100 hospitals on an international level involved in this clinical trial. Fortunately Morgan met all the inclusion criteria and was enrolled in the study with the permission of his parents. It is not known whether or not he received the progesterone, but one thing we do know – his survival is a miracle!

Morgan's story is truly remarkable, especially considering that 1.7 million Americans suffer a TBI every year with approximately 52,000 deaths. The Centers for Disease Control and Prevention estimates that at least 5.3 million Americans currently have a long-term or lifelong disability as a result of a TBI. "That day the system worked exactly as it is supposed to, and we have everyone involved to thank for giving our Morgan back to us" said Camille, Morgan's mom. Each of the individuals involved in Morgan's survival and subsequent recovery is grateful for his outcome and amazed, not only because he survived, but because he has made a full recovery.

Morgan graduated from high school with honors on May 19, 2013. In the fall he will begin his college career at the University of North Dakota, where he will study petroleum engineering.

SEECOM

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SEECOM fosters positive working relationships with the agencies we serve by having the telecommunicators participate in ride/sit-a-longs and having members of these agencies participate in sit-a-longs in the SEECOM Communications Center. By participating, telecommunicators not only gain a better perspective of the variety of situations field personnel respond to, they become more than just a voice on the radio. The police officers and fire personnel who have participated feel a better respect for the telecommunicators and all the tasks they are required to accomplish.

(Matthew Diamond is a member of Flight For Life's Customer Service Advisory Board)

Customer News

New Fire Chiefs Selected

Congratulations to:

- Bob Stedman, who is South Shore Fire Department's newest chief. Chief Stedman follows former fire chief William Bouma, who retired last October after spending 34 years in the fire service.
- New Ripon Area Fire District Chief Tim Saul, and good luck to former Chief David Bathke in his new position.
- New fire chief at Waukegan Fire Department – Ricco Farrell, and best wishes to former chief Dan Young, who retired after 35 years of service.
- Mike Reel, new fire chief at Fort Atkinson Fire Department/Rescue Squad. Best wishes to former chief Tom Emrick, who recently retired.
- New fire chief at Johnson Creek Fire & EMS – Dave Peterson. Former chief Tim Whitman left to join another fire department located out of state.

New Sheriff Selected

Congratulations to new Dodge County Sheriff Patricia Ninmann. Sheriff Ninmann was a member of Flight For Life's Customer Service Advisory Board (CSAB) for two years. She replaces retired sheriff Todd Nehls.

Remembrances

REACT Crew

On Monday evening December 10, 2012, REACT Pilot Andy Olesen, Flight Nurse Jim Dillow and Flight Nurse Karen Hollis were on their way to pick up a patient when their helicopter crashed. Unfortunately, there were no survivors. The accident was devastating to the REACT program as well as those of us at Flight For Life and all

of the other area air medical programs. The air medical industry is a very small, close knit community of individuals who often know each other. This was the case with Andy, Karen and Jim; many of us knew them, and some of our staff even worked with them at REACT before joining Flight For Life.

There are no words that can come close to expressing the sadness and pain that we felt and continue to feel after losing our friends. When someone that we love dies, it is only natural to ask "Why is it that they died?" Perhaps we should instead ask "Why is it that they lived?" When we ask that question, we immediately know the answer; they were here to care for others and make a difference for those whose lives they touched.

Thank you Karen, Jim and Andy for all that you did and for all you gave. We love and miss you.

Firefighter Robert Pattie

On Sunday, April 14, former Town of Salem Fire/Rescue, Silver Lake Fire and Silver Lake Rescue Squad Firefighter/Paramedic, Robert Pattie and his girlfriend were involved in a motorcycle crash in Colorado. Robert unfortunately succumbed to his injuries and his girlfriend was critically injured.

It was in 2008 that Robert was one of the first full-time firefighter/paramedics to be hired by the Town of Salem Fire/Rescue. Then in 2010, Robert found his dream job when he joined the Buckley Air Force Fire and Emergency Services as a Department of Defense Firefighter/Paramedic, leaving his home in Silver Lake, Wisconsin, for the mountains of Colorado.

In the late evening of April 18, Robert's plane landed at General Mitchell International Airport. He was accompanied by Scott Schmidtline, one of his colleagues from Buckley Air Force Fire. Upon arrival, the plane was met by his family and members of Town of Salem Fire/Rescue, the 128th Air Refueling Wing, and Milwaukee Fire. A processional then made the journey from the airport to Strang's Funeral Home in Antioch. From Milwaukee to Kenosha, members of the fire service family gathered alongside the road in the cold as the processional made its way past.

Robert was loved by many and will be missed by even more. Godspeed Robert.

Trooper James Sauter

The law enforcement and fire/EMS communities came together to honor and remember Trooper James Sauter of the Illinois State Police on Tuesday, April 2 at the Moraine Valley Church. Trooper Sauter was killed on March 29 when his patrol car was hit by a semi as he sat on the shoulder of the Tri-State Tollway after assisting a

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Video Laryngoscopes Now at FFL

by Leif Erickson, CCEMT-P, Flight Paramedic, FFL-Waukesha Base, Clinical Staff Education Coordinator

In May 2013, the Flight For Life (FFL) medical teams began utilizing Video Laryngoscopes (VL) in the patient-care setting. These devices complement the airway management devices onboard all aircraft. This is the first time in the history of the program that video laryngoscopy has been utilized by FFL.

In various hospital settings, including anesthesiology, endoscopy, and various surgical arenas, video devices have been utilized to assist practitioners with diagnostic and/or procedural processes.

Staff members at Flight For Life spent approximately two years researching VLs. This included multiple vendors and products, literature reviews, as well as participating in hands-on demonstrations. Information was also gained through a large midwest EMS system that performed an in-depth field use study.

Utilizing the information and insight gained, FFL decided to purchase the CMAC Pocket Monitor from Karl Storz – Endoskope, which is located in Germany. Karl Storz Endoskope was founded in 1945 and has been a leader with video assisted procedural devices for years. In 1971, Storz added a plant in the United States and has proven to be an international leader in the area of video assisted medical devices.

VIDEO LARYNGOSCOPE: A laryngoscope, including a blade with a video or still camera built in to the device attached or tethered to a video monitor.

VIDEO LARYNGOSCOPY: Utilizing a video laryngoscope to view the pharyngeal area, larynx, glottis, vocal folds and cords and/or the superior region of the lower airway including the glottis.

The main reason Storz was chosen by FFL is that the provider performing the intubation does not need to modify their intubation technique to facilitate video laryngoscopy. This is due to the CMAC monitor being built around traditional Macintosh and Miller blades. The main differences between a CMAC Pocket Monitor and a standard laryngoscope are in the handle assembly, additional monitor screen and other electrical components:

1. Camera built into the CMAC blade. Approximately 1 inch from the end of the blade (tip end)
2. CMAC Pocket Monitor has a video monitor attached to the handle/blade assembly
3. Handle on CMAC is rectangular, not round
4. Rechargeable Lithium Ion Battery

Maintaining exceptional direct laryngoscopy skills is essential. Intubation technique should not be performed one way while using the VL and another technique utilized during a direct laryngoscopy using a traditional laryngoscope. Adding a second technique to a provider's intubation skill set diminishes the efficiency of this time-sensitive procedure and may alter a successful patient outcome. Exceptional intubation skills and being able to identify anatomical airway features and landmarks are equally important for the provider facilitating the intubation. Intubation is more than "putting a tube in a hole" as many providers with limited experience often say.

Another advantage of the Storz CMAC Pocket Monitor is that the blades are similar to standard laryngoscope blades, both Miller and Macintosh, with the addition of the "D" Blade. The "D" Blade is longer than the normal Mac or Miller blades and has an obvious anterior approach, (FIGURE 1). The "D" Blade is intended for anterior airways and difficult airways in general. (FIGURE 1)

FIGURE 1

VLs are relatively new to the pre-hospital care setting and some questions have yet to be answered. These questions include:

- What is the durability of the devices?
- What is the intended use compared to the hospital setting?
- How well does the video work in cases where the patient has a traumatic airway, and when visibility is jeopardized from vomiting or bleeding?

No equipment will be removed from any of the aircraft and medical crew members will not be required to utilize

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Flight For Life Adopts Selective Spinal Immobilization

by Sean Marquis, MD, NREMT-P
Co-Medical Director, ***FLIGHT FOR LIFE***

EMS providers demonstrate their ability to make tough clinical decisions every day. Historically, EMS protocols were written by doctors, based upon hospital medical practices, to serve as algorithms for pre-hospital providers to follow which were similar, if not identical to, those followed in the hospital. Nowadays, EMS providers in their recognized specialty raise issues and provide input to their own guidelines with the flexibility to make assessments for individual patients and scenarios. No one has more firsthand involvement in dealing with scene assessments, mechanisms of injury and immobilizing trauma patients than EMS providers, and the medical culture should empower them given that experience. It is through dedication and ongoing effort that clinicians of any and all disciplines stay current with new findings through research and discovery, whether it is from trial and error, scientific advancements or new challenges.

I'm proud to say that, as a medical specialty, we in EMS are always raising the bar. We now ask difficult questions to scrutinize the status quo, consider other options and aim to improve our practice. So much in fact, that we can now frequently see how EMS drives hospital care. Examples include: pre-hospital defibrillation to return a spontaneous pulse, application of CPAP to prevent intubation, knowledge of injury pattern to drive imaging studies or social services involvement, administering an antidote, or intubation and fluid management to drive early admission. Collaboration among pre-hospital, emergency department and inpatient care teams – through regular bidirectional feedback – will allow providers at each link in the chain to make refinements in their clinical acumen and assess a situation to better deliver continuously improved care. We are the first contact for our patients. EMS can take the lead. Flight For Life (FFL) is partnered with the Medical College of Wisconsin and holds monthly Executive, Quality Improvement, Education, and Standards & Practice Committee meetings to address these goals.

In medicine and in life, we live by the rules *primum non nocere* (Latin for "first, do no harm") and more generally "if it ain't broke, don't fix it." It is about risk versus benefit. Anyone who has worked an extrication can tell you it is very cumbersome, labor-intensive and time-consuming to apply immobilization. So, shouldn't we ask: what is the benefit; what is the potential harm? We've outgrown the days of short spinal boards when we were asked to do double the work. How much immobilization do c-collars actually provide? A UK study by Houghton L & Driscoll P, 1999, found collars limited movement by 31-45%, the combination of head blocks with straps prevented only 58-64% and the application of both head blocks and a collar provided no additional spinal protection to patients. What's the first thing that EMS providers observe when their patient reaches the ED? Off comes the tape and the patient is rolled off the backboard. Frustrating? Okay, so here is the evidence and historical thinking behind all this…

Bohlman (J Bone Joint Surg Am, 1979) found that 100/300 spinal injuries were being missed in the emergency department. In 1980, Dr. Daniel Podolsky observed that 3-25% of acute spinal cord injuries presented after the original injury, sometime during transport or early in the course of hospital therapy. Subsequently, concern arose that we should take some kind of action to demonstrate that we are conscious of the need to protect the spine in case of an occult injury. Since then, almost everyone (1980-present) has been immobilizing patients without any good data to predict pre-hospital who has an unstable fracture or cord injury that will be aggravated by improper packaging.

On the other hand, Podolsky (J Trauma, 1983) further demonstrated that none of the cervical immobilization devices available provided satisfactory restriction, whether it is a rigid or soft collar, sandbags, foam, vacuum, etc. Linares (Orthopedics, 1987) pointed out that the act of spinal immobilization causes pressure sores to patients. Hunt (Anesthesia, 2001) showed that immobilization, which requires that patients remain supine, increases intracranial pressure in traumatic brain injury patients and that early removal of immobilization devices reduces the number of days a patient is on a ventilator, as well as the risk for the development of ulcers, delirium, and pneumonia.

The reasonable response across the medical profession has since been a best-evidence approach not to immobilize every patient with a traumatic mechanism, but rather to selectively immobilize those we believe possess the greatest risk for a spinal injury. In July 2000, The National Emergency X-Radiography Utilization Study (NEXUS) Group published the results of its validation study of clinical guidelines, and in October 2003, The Canadian C-Spine Rule for Radiography in Alert and Stable Trauma Patients was published. The NEXUS Criteria (34,000 ED cases at 21 academic US centers in patients with suspicion for cervical spine injury) and The Canadian C-Spine Rule (9,000 patients at 10 Canadian centers in patients with head/neck trauma) both have a sensitivity of greater than 99% and a specificity of approximately 50%. This means that, while we are still immobilizing people who do not need it, these tools allow us to identify 99 out of 100 patients encountered who possess a cervical spinal fracture and with whom we should take cervical spinal precautions.

continued on page 13

Communicators' Corner:
Where's the Helicopter?

by Chris Forncrook, CFC, OCS, EMT-I
***FLIGHT FOR LIFE** Lead Communication Specialist*

"Flight For Life Communications, this is Chris."
"Chris, we need Flight For Life to the scene of our accident, how long will it take?"

One of the first questions asked during the intake process for a helicopter transport is how long it will take. Time is one of the most critical factors used in determining the need for helicopter transport. Therefore, the accuracy of ETAs is stressed in our Communications Center. Our Communicators provide an initial ETA during the original request. The ETA is provided in minutes and actual clock time (e.g., "We'll be there in 18 minutes, at 11:35 am.") to provide a real time reference for referring agencies. This ETA includes not only our actual flight time to the destination but also the average time it takes from the request to lift-off of the aircraft. Once the aircraft has lifted, an updated ETA, once again in minutes and actual clock time, is provided to the referring agency.

ETAs are monitored in our Quality Improvement process for each request. In 2012, over 1,200 ETAs were provided by our Communications Center. Of those over 1,200 ETAs, 91% were compliant with aircraft arrival within three minutes of the initial ETA provided. The overall average of the initial ETA was within 1 minute 6 seconds of the aircraft arrival. There has been a trend over the past 18 months toward more and more accurate ETAs. This can be attributed to a new CAD program and standardization of work flow in the Communications Center. The other 9% that were not compliant or off by more than three minutes were mostly factors that cannot be controlled, usually weather. Weather checks usually only take a couple of minutes, however, on bad weather days these can be extended. Also, a strong head wind or tail wind can dramatically affect ETAs. While the Communicators try to take these factors into account, there are times when the unforeseen causes ETAs to be off. At Flight For Life, we understand the importance of accurate ETAs in determining transport mode for your critically ill and injured patients, which is why we monitor ETAs so closely – so you won't have to be on scene wondering "Where's the helicopter?"

Video Laryngoscopes

(continued from page 8)

the CMAC Pocket Monitors. The medical oversight physicians at FFL believe it is important for medical crew members to make their own decision when choosing which device they prefer to utilize. The intention when purchasing the new devices was not based on airway skill competency sets but rather to complement what is currently in place.

Current literature supports Video Laryngoscopy. Although research regarding VL in the pre-hospital setting is limited, it has found that providers often struggle when not appropriately trained, and have false perceptions of how easy it will be to intubate.[1] Specifically, first pass success rates (successful intubation on the first attempt) initially declined when VLs are utilized; this includes hospital and pre-hospital settings. Most importantly, providers must understand, when using a VL to facilitate intubation, they are placing a camera in the upper airway, often obtaining a great view of the glottis. This is usually without having to displace the lower jaw and tongue, which is the norm when utilizing direct laryngoscopy to view the glottis/vocal cords. Athough the provider can see the glottis on the camera monitor, getting the tracheal tube to the location being viewed can be challenging. VLs can and will be utilized for more than just intubation. The medical staff has realized the advantages of using VL to assess inhalation burn injuries, assessing trauma to the mouth or upper airway, and verifying tracheal tube placement if it is questionable.

A quality assurance review will be completed following each use of a VL for a minimum of one year. In addition to initial education and required performance demonstrations for all FFL medical staff, a monthly competency is also required for each month in 2013.

References:

[1] Callaway, CW. Et Al ; Prehosp Emerg Care. 2012 Apr;17(2):149-54. doi: 10.3109/10903127.2012.729128. Epub 2012 Dec 11.

Flight For Life Central App Webinar Announced

We will be hosting a **FREE FFL Central App Webinar** on the first and third Thursdays of every month at 10 am. The webinar will feature:

- Interactive Live Q & A
- Learn how this App works and **DOES NOT** bypass your Dispatch Center
- Learn how to use this App within Your System

To join the webinar, go to our website (www.flightforlife.org) and click on the link.

Pink Heals Donation Puts "Jessica" on the Road Again

by Tammy Chatman, CMTE, Professional Relations/ Marketing Manager, FFL-McHenry Base

Last year, FFL-McHenry chose to donate all proceeds from their 2012 FFL Pink Heals sales to replace the radiator of Jessica, the Pink Heals pink fire truck. The donation was in memory of one of FFL-McHenry's first flight nurses, Diane (Travis) Wittkamp, who died on February 13, 2012 of gastric cancer. Donating to Pink Heals was an idea that came from Diane's family as Diane loved the Pink Heals mission of raising awareness and support for women who are battling cancer.

Replacing the radiator that Jessica so desperately needed was estimated to cost $3,500. FFL Pink Heals clothing was sold in a variety of ways, including at all of the FFL-McHenry blood drives – two with McHenry Township Fire and one with Fox River Grove Fire. As the year progressed, our FFL-Fond du Lac base decided that they too would join the effort, donating all of their proceeds as well.

The day finally came. There was enough money for the radiator! So on Tuesday, January 8, 2013, at McHenry Township Fire Protection District main station, those who had made this day possible gathered to celebrate Diane's final gift to all the women who currently are battling or have battled cancer. The apparatus bay was full, including some of our former patients and their families, FFL staff and crew, Diane's family and friends, McHenry, Huntley and Fox River Grove Fire personnel, the volunteers of Northern Illinois Chapter of Pink Heals, Jessica's namesake – Jessica Bertulis, and our friends from LifeSource! Steve Rusin, founder of the Northern Illinois Chapter of Pink Heals, was presented a check for $4,600! This was not only enough for the radiator but for a number of other repairs that Jessica needed.

Huntley Fire Protection District Chief Ken Caudle graciously offered his maintenance division mechanic, Rob Territo, to do the work. Jessica was moved to the Huntley Fire maintenance facility where Rob and a couple of volunteers – Huntley Fire Lt. Steve Young and FF/EMT-P Eric Smith along with South Elgin Fire's FF/EMT-P Matt Turnquist – did the work. These guys worked many volunteer hours to make Jessica as good as new and back on the road.

Friday, March 15 everything was completed and Jessica was ready to hit the road! Some of Diane's family, Rob and his volunteer mechanics, Steve from Pink Heals, Jason from Fox River Fire, Patty and Tammy from FFL-McHenry gathered to celebrate the completion. Rob handed over the keys to Jessica and Steve drove her home.

None of this would have been possible without the dedication, hard work, time and love of so many people. There are no words that could possibly express our feelings, but know that our heartfelt gratitude goes out to each of you. Every person that bought FFL Pink Heals clothing has a small part in the success of this project.

Jessica made her first road trip to Kaukauna, Wisconsin, for a Make a Wish event on May 11. For those who attended the event and happened to look inside the cab, there is a plaque honoring Diane between the seats. Diane and her legacy of love and caring for others will forever be a part of the Pink Heals mission. Those who come in contact with Jessica will forever be touched by her spirit.

How Does Our FFL Central App Work?

App Alert Received

↓

Alert Appropriate Crew

↓

Initial Response sent via Text to User

"FFL Alert activation received, Flight Comm will contact your dispatch/hospital with additional information."

↓

Contact Dispatch Center/Hospital

- Confirm request for activation
- Advise aircraft availability

↓

Accepted Flight

- Confirm scene location / hospital
- Detailed scene info / patient info
- Radio frequency & ground contact
- Number of patients
- Confirm GPS Coordinates (using DeLorme)
- Provide initial ETA (in minutes & actual clock time)

Missed Flight

- Inform Dispatch Center / Hospital of miss
- If miss for weather, advise and make any alternate arrangments as applicable
- If miss for any other reason than weather, locate and dispatch next closest aircraft

↓

Follow Normal Flight Procedures

We are encouraging our customers to use the Helicopter Activation Module of the App to call us for pre-scheduled PR events. This will provide practice and comfortability with the App. Any questions, contact FFL Marketing.

Remembrances

(continued from page 7)

motorist. He was only twenty-eight years old and had been a trooper since 2008.

Everyone who spoke about James mentioned one thing over and over; his smile. One of his fellow troopers described his smile as being the size of Mount Rushmore! They also spoke of his love of being a trooper, working patrol, and his good-hearted personality. That was certainly apparent when you looked at the enormity of photos that lined the church where the wake was held; those images stood witness to his zeal for life and those around him. One could not help but feel how much he will be missed by those who loved him.

Thank you Trooper James Sauter for your service to the people of Illinois.

Lt. Dave Cooper "Coop"

Pleasant Prairie Fire Department Lt. David C. Cooper "Coop" lost his battle with cancer on April 28, 2013. He had been on the Pleasant Prairie Fire Department since 1976 and had recently finalized his July 1st retirement date. Coop's love and dedication as a firefighter and educator shone throughout his long career.

Many of the fire service family from Wisconsin and Illinois came out to celebrate Coop's life at his visitation in May and the following day at the funeral service. The love and support shown his family was a reflection of how much Coop was loved by his friends and colleagues.

Thank you Coop for your dedication and service to the Pleasant Prairie Fire Department and the community.

Officer Jennifer Sebena

In the early morning hours of Christmas Eve 2012, Wauwatosa Police Officer Jennifer Sebena was shot to death while on duty serving her community. A sad gathering held her funeral on Saturday, December 29, attended by family, friends, and officers from many departments. An estimated 300 police vehicles participated in the procession from the church to the cemetery, her final resting place at Wisconsin Memorial Park.

Officer Sebena joined the Wauwatosa Police Department in January, 2011, after graduating from the Milwaukee Area Technical College's police academy. She is remembered for her passion and dedication to serve others, volunteering for the Hunger Task Force, as well as mentoring small groups of high school-aged girls at Elmbrook Church.

She was honored by many on the "Officer Down Memorial" webpage. Wauwatosa Reserve Officer Scott Muro wrote the following: *"The loss is ours, the gain is yours in heaven…Thank you Jennifer for your commitment; your legacy will live on."* We could not say it any better than that.

Officer Sebena's name was added to the National Law Enforcement Officers' Memorial in May 2013.

Officer Don Bishop

Town of Brookfield Police Officer Don Bishop was honored by his peers as he was laid to rest in a Waukesha cemetery on Thursday, April 18. About 80 fire and police agencies participated in the funeral. Only 32 years old, Officer Bishop died suddenly Saturday, April 13th of an apparent heart attack; he was on duty, responding to a burglary call.

Before joining the Town of Brookfield Police Department in August, 2011, Bishop held positions as a dispatcher for Waukesha County Communications and the Oconomowoc Police Department. He previously served with the Mukwonago Police Department, North Prairie Fire Department, and was also working part-time as an Eagle police officer. People from throughout many municipalities mourn Don's loss – both those he worked with and all of the citizens whose lives he touched.

Firefighter Jerome Renz

Lt. Jerome Renz, of the Wyocena Bureau of Fire (WBF), was killed in a two car crash on Easter. Jerome joined WBF in 1995. He was loved and respected by all who served with him. His chief said Jerome had a never-ending "willingness to give."

To honor their colleague, WBF members pulled Engine 142 out of the station and lighted and decorated it with Jerome's turnout gear.

Jeff Kreft

Twin Lakes Police Lieutenant Jeffrey Kreft died in a car crash on his way home from work on May 25. He had just been promoted to Lieutenant earlier that month. Jeff was hired at Twin Lakes in 2007, and chose to work third shift to have more time with his family.

A childhood friend, now also in law enforcement, described Jeff as "passionate" and says he feels as though a piece of the puzzle has been taken. Police departments from across Wisconsin gathered at his memorial service to say thank you and pay their respects, wearing black arm bands over their badges.

Selective Spinal Immobilization

(continued from page 9)

Table 2. NEXUS Criteria For Radiographic Evaluation Of The Cervical Spine Following Blunt Trauma[81]

1. **Midline cervical tenderness**
2. **Focal neurologic deficits**
3. **Altered level of consciousness**
4. **Evidence of intoxication**
5. **Painful distracting injury**

empracticenews.wordpress.com

The criteria from the NEXUS study for selective spinal immobilization are presented in the diagram above.

The Canadian C-Spine rule is likely becoming outdated as newer vehicles have the capability to keep people safe at greater speeds and are designed to absorb impact resulting in impressive damage to the vehicle while the occupants are spared the applied forces. Additionally, I think we may be ready to recognize the setup for over triage when asking everyone the leading question “is your neck sore?” that almost everyone will answer promptly with a “um, a little bit.” While the Canadian C-Spine rule suggests spinal immobilization for patients over the age of 65 years and these patients are at a greater risk for sustaining a spinal injury than younger patients from a given mechanism, many EMS providers instinctively (I believe appropriately) refrain from placing these patients on backboards. Rather, they use bed sheets or vacuum bags for fear of causing additional harm and misalignment on a backboard. At least we know that securing a scoliotic malnourished elderly patient to a rigid flat backboard is certainly not placing them in a position of comfort.

So which direction does the risk versus benefit pendulum sway and can we be any more accurate? Domeier (AEM, 2005) found that among 13,000 trauma patients in southeastern Michigan, 382/415 confirmed spine injuries were detected using the principles of NEXUS and immobilized; and of the 33 cases not immobilized, only two of those required any treatment more than a pain medication and none of them suffered a cord injury. In 2006, the Australian Spine Immobilization Position Statement was released, stating that long backboards do not prevent secondary spinal injuries. In 2007, the National Association of EMS Physicians (NAEMSP) released a position statement supporting pre-hospital clearance of the cervical spine by NEXUS criteria. In 2012, a study developed in Ireland suggests that self-extrication in alert and ambulatory patients generates less movement of the neck than when assisted by care providers.

Given the litigious nature of our health environment and upcoming national health policy changes, there may be stronger incentives on the horizon to recognize that we may better serve the majority of our patients by using less immobilization.

In addition to Southeast Michigan and several other regions, the state of Maine has been employing SSI since the 1990’s with great success and without reports of causing harm to patients (emsworld.com). The Southeast Regional Trauma Advisory Council (SERTAC) of Wisconsin (sertacwi.org) released a guideline in February 2013 which supports selective spinal immobilization only for patients with suggestion of a significant traumatic injury by blunt mechanism, or who do not meet NEXUS criteria and have not already been ambulatory at the scene. SERTAC recommends using a backboard or scoop stretcher only as an on-scene transport device with early removal by pre-hospital providers. Literature references in support of selective spinal immobilization in addition to those discussed in this article can be found on their website.

In our current Flight For Life protocol, revised 05-2013, we apply the NEXUS criteria to assess all trauma patients for selective cervical spinal immobilization. If patients do not meet this criteria, our crews will only use a long backboard as an on-scene transport and transferring tool. We will not unbundle already “packaged” patients as that would delay transport. Local EMS agencies we serve should, therefore, be aware that they do not need to immobilize these patients to a backboard simply for FFL transport away from the scene. Hospitals should note that these patients will be taken off of boards when we arrive for interfacility transfers. Even without a backboard, we will still observe spinal precautions for patients with suggestion of a thoracic and/or lumbar spine injury using log rolling and neutral inline positioning. In children, evaluating them for meeting NEXUS criteria means they must be able to communicate verbally and follow commands. Our experiences have shown us that removing the patient from a backboard also serves as a reminder and great opportunity to assess the posterior of the patient for weapons, personal identification and signs of injury. As always, patients with the capacity to make decisions always have the right to refuse individual treatments, including any spinal immobilization devices.

As with any protocol, continuous quality improvement is essential to providing optimal care. Flight For Life performs extensive quality assurance on many levels including real-time assessments and discussions between providers, online medical control, daily peer and administrative review of flight operations and patient care documentation, frequent communication within the organization, monthly quality improvement meetings, and feedback from external organizations, both informal and through provided surveys. Should a special situation or the need arise, our care practices can be altered at all-three flight bases immediately, 24/7/365. Our mission at Flight For Life is safety and optimal care for everyone in the community.

Crew Volunteer & Community Service News:
Water Skiing Around the World

by Todd Rishling, CCEMT-P, Flight Paramedic, FFL-McHenry Base

Since 1986, I have been involved in a community based organization that promotes the sport of water skiing, specifically show skiing. That organization, a 501 C3 nonprofit, is called the Wonder Lake Water Ski Show Team (http://wonderlakeskiteam.org). We are comprised of team members with a variety of backgrounds, including

private business owners, salespersons, store owners, tradesmen, real estate developers, bankers, insurance sales, medical professionals, a few firefighters, and many others. A significant part of the team is the younger generations of the families who developed this organization. We vary in age from around six years old all the way up to 65 years old. We have boat drivers, water skiers, costume designers, rope rollers, boat riders, safety teams, announcers, sound producers, stage performers, and many more. It takes more than just water skiers to make a ski show a show!

We entered our first national tournament in 1986. Since that time, we have gone on to win four national championships, years of regional tournament wins, and numerous other prestigious awards. We have sent many of our team members, including myself, to professional shows all around the world. These include all of the Sea World parks in the US and Australia, Cyprus Gardens, Marine World, and many others throughout Germany, Malaysia, and China. The organization is a center point for the community with membership nearing 175 members; we are the heart of Wonder Lake.

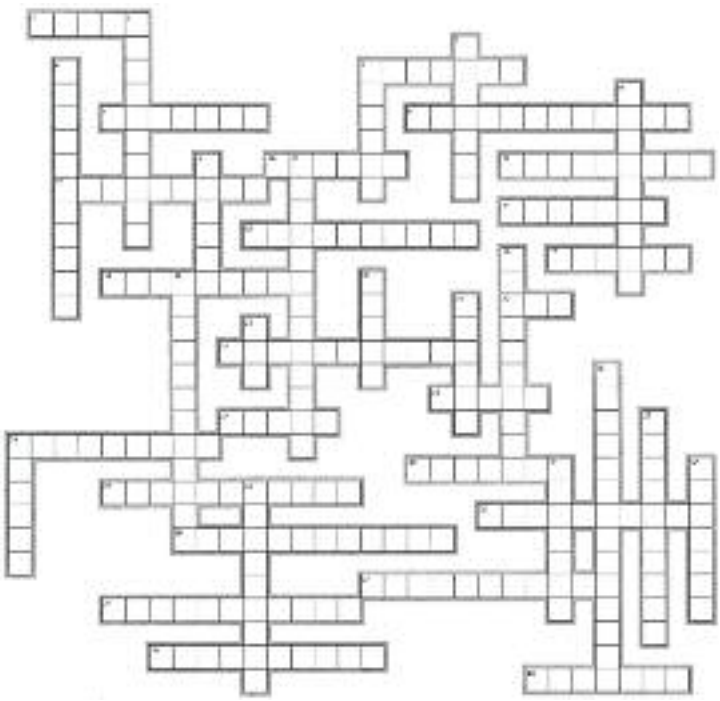
I have had the opportunity to hold various volunteer roles within the organization. We are not compensated individually. Rather, the organization funds itself and invests in equipment for the ski shows. Predominantly we are a competition team that performs local shows and other road shows for hire. Most of our efforts are geared towards entertainment and competition, but all of us seek to have as much fun as we can. This organization is a family organization; most of the team members are from large families which helps to strengthen the bond and teamwork.

The team is run much like a business with an elected board each year. We also have an advisory board which helps with some of the challenging decisions regarding how we spend the money earned. We currently are in the construction phases for beach modification of our property. Various grants have been acquired towards that project. Major sponsorships are helping with boats, motors, and equipment. We operate each year from these monetary sponsorships and the collections gathered at our shows.

It has been an exciting past two years for me as the team president. Significant strides have been made towards the future of the team by enhancing our marketing, advertisements, and funding. Being a member of the Wonder Lake Water Ski Show team has brought its share of challenges and has been very time consuming. Having been a part of my family for years, it has also been very rewarding. Now I can enjoy this activity even more, as all three of my children and my wife are part of the team in some capacity. Our summers are spent traveling and participating in water

ski shows. Many of our team members have motor homes or campers, and we take over some of the ski sites with “Camp Wonder Lake.” In between my jobs, a bit of teaching, a traveling soccer team (all three kids), and the everyday challenges of daily life, my family spends much time on the water. Once we even used Flight For Life for one of our skiers, who just happened to be my brother. See, it really is a family thing!

Airway Management Crossword Puzzle



Across

1. Pocket masks are required to have a one way _____.
5. All advanced airways need to be _____.
7. The start of the trachea is known as the _____ opening.
8. When intubating a patient, this can give you a false positive for placement
10. This type of mask is carried by several EMS providers for emergency use.
12. When inserting the nasal airway, you must remember to do this.
13. The small bumps at the bottom of the glottic opening are the _____ cartilage.
14. The back of the throat is know as the posterior _____.
15. The numbers that are shown when using $ETCO_2$ monitors are known as _____.
17. This type of forcep is used to assist in removing foreign items from the airway.
18. The curved laryngoscope blade goes into this.
22. To pre-oxygenate our patients before intubation, it is best to use a _____.
24. The wave forms that are shown on $ETCO_2$ monitors is known as _____.
26. When inserting an advanced airway, you should always document the number on the tube at the _____.
27. To deliver between 24% and 44% oxygen you would use a _____ cannula.
29. This type of blade is curved.
30. Over ventilation with a bag valve mask can cause _____ inflation.
33. An $ETCO_2$ detector that changes colors is known as _____.
35. When vomitus or blood is inhaled or forced into the airway, it is know as _____.
36. An airway that is placed through direct visualization is an _____ tube.
37. A malpositioned oral airway can cause this.
38. The movement of air into and out of the lungs is known as _____.
39. Listening over the lungs and epigastrium is known as doing this.
40. Once an advanced airway is placed, you must _____ the cuff of the tube.

Down

2. The straight Laryngoscope Blades are used to pick up this.
3. An ETT that is inserted too deep can go into the R mainstem _____.
4. A bag valve mask can help to assist a patient with _____ respirations.
5. When inserted into an ETT, this helps to make the tube more stiff and manueverable.
6. This straight blade also has a name of a state.
9. The most common cause of an airway obstruction is from this.
11. An _____ airway is a curved device used to displace the tongue and keep the airway open.
16. A non _____ will deliver between 60% and 100% O_2.
19. These blades come in various shapes and sizes.
20. Most secondary airways are known as _____ glottic airways.
21. Twenty-one percent is the content of this in room air.
23. A _____ thrust is used to displace the tongue from the posterior airway.
25. This type of airway is inserted into the nose and is well tolerated by patients with a gag reflex.
28. The removal of blood or emesis from the airway is done by _____.
29. This type of blade is straight.
31. Pushing down on the thyroid cartilage is know as _____ pressure.
32. This type of oxygen mask will deliver a specific amount of FiO_2.
34. A misplaced ETT will likely end up in this part of the body.

see answers on page 16

Welcome Back!

Flight For Life Pilot Bill Richey and Mechanic Kevin Cook recently returned home from Kosovo after deployment with the Wisconsin Army National Guard. Bill and Kevin spent nearly two years at Camp Bondsteel, Kosovo's only US operated base. Since 1999, the United States and their European allies have maintained a presence in Kosovo, helping to establish it as a recognized country both politically and economically. Their mission was to provide medevac support for the ground troops who were doing patrols, manning contested border crossings, ensuring law and order, and to provide humanitarian aid and assistance to the local government and municipalities.

Pilot Bill Richey

Mechanic Kevin Cook

We're thrilled to have Bill and Kevin home safely, and thank them for their service to our country!

Mark Your Calendar!

- ***FLIGHT FOR LIFE's* 29th Annual Emergency Services Conference: Trends and Issues 2013, Saturday, September 28, at Kenosha County Center**

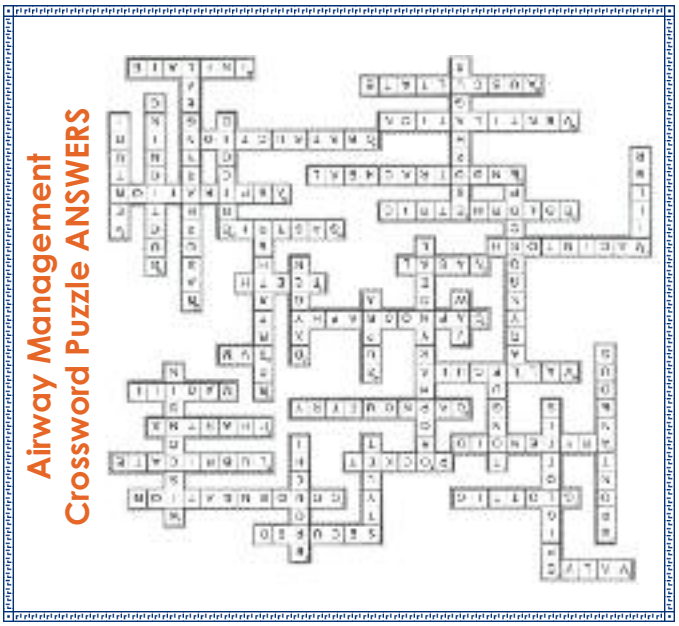
- **Upcoming Blood Drives**
  - **Saturday, October 26**, - "Seven Angels Blood Drive," FFL-McHenry Base at Fox River Grove F.P.D.
  - **Friday, November 29**, "Black Friday Blood Drive," FFL-McHenry Base at McHenry F.P.D

Go to www.flightforlife.org for the latest news and information on events. And check out our Facebook page: www.facebook.com/flightforlifetransportsystem

Congratulations to...

the following people who were randomly selected from those who completed ***FLIGHT FOR LIFE*** Online Customer Satisfaction Surveys.

Month	Name & Affiliation
	2012
May	**Lisa Wagner**, Aurora Memorial Hospital of Burlington
June	**Peter Diehn**, Darien Volunteer Fire Dept.
July	**Jamie Jack**, New London Family Medical Center
August	**Nikki Beranis**, Kenosha Joint Services
September	**Jodi Kamermayer**, Milwaukee Fire Dept Dispatch
October	**Jennie Pieper**, Walworth County Sheriff's Office
November	**Laurie Schultz**, Germantown Police Dept.
December	**Erica Grosenick**, Dodge County Sheriff's Dept.
	2013
January	**Michelle Ernst**, Centegra-Woodstock
February	**Andrew Werth**, Clintonville Fire Dept.
March	**Jeremy Becker**, Waushara County EMS
April	**Kate Biwer**, City of Waukesha Dispatch
May	**Kelly Leiba**, Advocate Condell Medical Center



Congratulations 2011 Scene Call of the Year Award Winners

Below are three more 2011 SCYA Winners. We also congratulate two departments who won the award, but did not to have a presentation ceremony: City of Fond du Lac Fire & Rescue Department and South Shore Fire Department.

Congratulations to Plymouth Volunteer Fire Department (top) Dousman Fire District (middle), and Lake Geneva Fire & EMS (below).