Life Link III relocated its Hutchinson-based aircraft on July 1. The Hutchinson base had been in operation since 2005. Life Link III made the decision to move its base to Willmar so the helicopter will be closer to a greater population of the patients it serves. This will improve response times, helping patients get to definitive care faster. The helicopter will transport patients from any hospital in the area, or directly from an accident scene if requested by emergency medical service, fire or law enforcement personnel.

“The relocation of the helicopter will allow us to provide lifesaving care and transportation to patients in many locations faster than ever before,” said Edward Eroe, President and CEO of Life Link III. “Basing in Willmar allows us to save precious minutes when responding to patient transport calls throughout several counties in western Minnesota.”

The helicopter based in Willmar will continue to serve central Minnesota areas as well, including its previous base location of Hutchinson, Minnesota. Staff at Hutchinson Health believe the impact to patients in this community will be minimal, as the helicopter will still be able to reach them in approximately 20 minutes, which is often how long it takes to prepare a patient for transfer.

The Life Link III helicopter and crews are based full time at Willmar Municipal Airport. All staff that had previously worked in Hutchinson saw their job transition to the Willmar base. Life Link III looks forward to continuing to serve patients throughout the region from this new location.
Life Link III Carries Blood on All Helicopters

By Cheryl Pasquarella, RN, Director of Quality and Compliance

Blood products are now available for patients on all Life Link III helicopters in Minnesota and Wisconsin! To serve our most remote population, in 2011 Life Link III added packed red blood cells (PRBCs) to aircraft in the Hibbing, MN and Rice Lake, WI areas. Access to time critical blood in the event of a major accident now expands to all helicopters.

Analysis of battlefield injuries in the Iraq and Afghanistan wars demonstrated that improvements in the treatment of hemorrhage resulted in a significant decrease in casualties. In his article, “U.S. Military Medics Use Old and New Techniques to Save Wounded in Afghanistan,” David Brown concludes that while medical treatment improved, “…almost none of the improvement is the consequence of new drugs or devices. Most of it, ironically, involves old technology and old practices that fell out of favor in the past 50 to 100 years and have been rediscovered and improved. And nearly all of them involve blood.” While use of tourniquets is back in favor, a high percentage of fatal hemorrhages occurred in core body areas, not in extremities where tourniquets can be applied. For those patients, early delivery of blood products is essential. And now delivery of blood products doesn’t need to wait until the patient arrives to an emergency or surgical department.

Memorial Blood Centers in Minnesota provides the Type O negative blood carried on each helicopter. “Whether the need is to transfuse blood at the scene or during helicopter transport, Memorial Blood Centers is excited to be involved in this new venture and to be the first blood center in Minnesota to provide this type of service,” said Jed Gorlin, MD, Memorial Blood Center Medical Director. “Only about 7% of the U.S. population is Type O negative making this blood type both precious and in high demand.” O negative blood cells are the universal type that can be safely transfused to anyone, regardless of blood type.

Technical Life Care provides state-of-the-art continuous temperature monitoring and recording to ensure blood products remain in a 1-6° temperature range. Collaboration with Memorial Blood Centers ensures compliance with the Food and Drug Administration regulations on training, storage, handling and transfusing these blood products. And it all starts with the gift of blood donation. Witnessing first-hand the benefits of early intervention of blood to the hemorrhagic patient led Life Link III to sponsor a blood drive at its annual Trauma Tactics conference in October. Watch for additional details in the conference literature!

References:
Life Link III Achieves 3rd CAMTS Accreditation

By Cheryl Pasquarella, RN, Director of Quality and Compliance

Accredited since 2006, Life Link III is pleased to announce the Commission on Accreditation of Medical Transport Services (CAMTS) awarded Life Link III reaccreditation this spring!

Originally developed in 1991, the accreditation standards are primarily designed for critical care rotor wing, fixed wing and ground transport services. As noted on the CAMTS website, “The Commission on Accreditation of Medical Transport Systems is dedicated to improving the quality of patient care and safety of the transport environment for services providing rotor wing, fixed wing and ground transport systems.”

In early February, medical and aviation surveyors arrived to a cold Minnesota winter. Armed with volumes of pre-reviewed documents and records, the site visit began with an opening conference outlining the review process as well as a very busy schedule. The surveyors conducted initial interviews of key personnel including Life Link III’s CEO, Chief Medical Officer and Safety Officer, along with Communications, Quality, Compliance and Education leaders. Our aviation partners Air Methods (rotor wing) and Club Jet (fixed wing) provided supporting documentation of compliance with rigorous aviation training and operational requirements. The surveyors then moved on to hangars and crew quarters for interviews with on-duty medical crews, pilots and mechanics as well as observation of processes, procedures, equipment and supplies.

The two day visit ended with a closing session, providing some much-appreciated feedback to Life Link leadership. Edward Eroe, Life Link CEO, stated “All in all it was a very good report card and the CAMTS final evaluation was one of the best I have personally ever seen given my experience at other air medical programs.”

Following this site visit, CAMTS awarded full accreditation to Life Link III for the third time. With comprehensive standards in areas including management, quality, patient care, communications and safety, the CAMTS accreditation uses measurable criteria to assess a program’s level of quality in all components of its transport services. The continued accreditation of our program reflects Life Link III’s commitment to consistently meeting or exceeding the highest standards in all these areas.

As of April 6, 2013, there are 154 accredited services – 4 international and 150 in the United States.
A Nail Gun is a Lethal Weapon: Penetrating Cardiac Trauma – Case Review

By Megan Hartigan, RN, Clinical Nurse Educator

Last fall a 40 year old male walked into the local ER complaining of a nail gun injury. Noted to be very pale and diaphoretic, he sat down on the ER bed and passed out. An industrial nail gun had accidentally discharged, sending an 18-penny finishing nail into his left chest.

The Emergency Department staff started IVs, initiated blood products and started a Dopamine drip to assist with hemodynamic stabilization. He was endotracheally intubated. The flight crew arrived about 45 minutes after the patient’s initial presentation. The crew reviewed the chest x-ray with the emergency room physician and discussed the best way to proceed with this patient. At this time the patient’s blood pressure was normotensive and the Dopamine was discontinued. The patient was then loaded into the helicopter.

Enroute to definitive care, the patient became hypertensive, with narrowing pulse pressures and an increased heart rate. Pulse oximetry was undetectable, however femoral pulses were present. 15 minutes into the 55-minute flight the patient became hypotensive and EtCO2 readings began to decrease. Since the green-tinted night vision goggle lighting made it difficult to assess the patient’s neck veins, a penlight aided assessment and the flight crew reported this patient’s neck veins were “huge and bulging.” O Negative PRBC (packed red blood cells) carried in the helicopter was readied and the pericardocentesis kit was close at hand. Medical Control at the receiving facility received regular patient updates from the flight crew.

About Nail Gun Injuries
Like this patient’s injury, nail gun injuries are typically work related. Injury severity is dependent on force, nail length and the organ/s affected. Nail guns operate by pneumatic or explosive charge. They are developed for high velocity professional use which may require a permit or low velocity for the do-it-yourselfer and can be purchased at big box home stores. The high velocity nail guns discharge like a rifle shot whereas the low velocity nail guns discharge similar to a hammer strike. Rarely does this type of injury cause catastrophic hemorrhage even with cardiac involvement. Survival is dependent on fast access to tertiary care capable of cardiac surgery.

About Penetrating Cardiac Trauma
About a half of a percent of all trauma cases involve penetrating cardiac trauma. Of those cases half die prior to getting to a hospital. When a patient makes it to tertiary care alive they have a greater than 75% chance of survival. The nature of the injury and the skill of the cardiac team affect survivability. Stab wounds fare much better than gunshot wounds. Injuries to the left heart, multiple heart chambers and the coronary arteries decrease survivability.

Natural History of Penetrating Cardiac Trauma
Typically there are two pathways; either tamponade or exsanguination. Survival for the patients with exsanguination is dismal. A high number of patients develop tamponade. Tamponade develops because the pericardial tear does not remain patent causing blood to accumulate. This accumulating blood eventually tamponades the bleeding but also causes a tense accumulation of blood which restricts cardiac motion. This is when you will see the development of Beck’s triad: hypotension, muffled heart tones and jugular vein distention. A word of caution: you won’t see distended neck veins if there isn’t enough blood to circulate.

Diagnosis
When a patient arrives in the emergency department in cardiac arrest following penetrating cardiac trauma a left thoracotomy (surgically open the chest) is diagnostic. In a more stable patient hemopericardium can be
open thoracotomy in the emergency department, finding large clots and fresh blood squirting from a \(\frac{3}{4}\) inch laceration in the right ventricle. The surgeon manually plugged the hole until bleeding was stopped with sutures. The patient was immediately taken to the operating room to remove the nail. Because the nail was very narrow, it penetrated the skin and tissue and was lodged directly in the chest wall right next to the left anterior descending artery. The point of the nail lacerated the heart with each cardiac movement. The nail was removed and the patient was successfully resuscitated. That same evening the patient experienced chest pain and appeared to be in shock. He was diagnosed with an anterior MI and was taken to the cardiac cath lab where a stent was placed. The shock was believed to be caused by the penetrating injury rather than the MI. The patient was discharged 10 days after the injury.

**References**


New Member on Life Link III Board

Life Link III is pleased to welcome a new member to its Board of Directors. Dr. Steve Sterner was named the Board representative for Hennepin County Medical Center in May 2013. Dr. Sterner replaces Mike Harristhal, who served for many years on the Life Link III Board of Directors.

Dr. Sterner practices emergency medicine at HCMC. He is board certified in emergency medicine and a fellow of the American College of Emergency Physicians. He is the Chief of Ambulatory Care, in charge of the HCMC clinic system and a member of the HCMC Executive Leadership Team. He is Senior Vice President in charge of Medical Affairs for Hennepin Faculty Associates.

Dr. Sterner graduated from the University of Minnesota medical school. He also completed his residency in Family Practice at the University of Minnesota in Minneapolis. He has a fellowship in Emergency Medicine from Hennepin County Medical Center.

Research Explores Airway Device Use

By Cheryl Pasquarella, RN, Director of Quality and Compliance

In its 2013 March/April edition, the Air Medical Journal published Supraglottic Airway Device Use as a Primary Airway During Rapid Sequence Intubation. As described in the abstract, this study compared first-attempt placement success rates of a supraglottic device (SGD) as a primary airway for patients requiring medication-assisted airway management (MAAM) against historical controls.

As noted in the study, previous research in hospital settings identified potential benefits of supraglottic devices in the pre-hospital setting that “not only include higher success rates and faster placement time but also the ability to place the device without the use of a laryngoscope, the ability to insert the device without extending the patient’s neck, and the ability to place the device from the patient’s side” with less initial and continuous training. The Regions EMS team, led by Dr. R. J Frascone, Life Link III’s Chief Medical Officer, turned to the Life Link III rotor wing division to study the concept in the transport environment.

Supported by a MedEvac Foundation research grant, Life Link III registered nurses and critical care paramedics were trained in use of King LTS-D® to use as the primary airway device during rapid sequence induction.

The Conclusion

“In this prospective case series, the success rates and the time to insertion of the King LTS-D in MAAM patients were not different from historic ETI control patients. Our results were also comparable with previously reported experience with the King LTS-D. The use of the King airway during MAAM as a primary airway in emergency (non-elective) situations may be justified when access to the patient’s head is limited. Further prospective, randomized research comparing the general use of the King LTS-D as a primary airway during MAAM is warranted.”

The Life Link III Board of Directors continue to support research in the air medical and pre-hospital environments. This study is available for review at www.lifelinkiii.com.

Tranexamic Acid

By Kolby Kolbet, RN, Vice President, Clinical Services

In addition to carrying PRBC’s on every flight, Life Link III is now adding Tranexamic Acid (affectionately known as TXA) to our formulary.

Tranexamic Acid is an antifibrinolytic agent that inhibits fibrinolysis, which helps to stabilize an existing clot and prevents it from being broken down. TXA has been rigorously studied in both the civilian and military settings. It has been proven to significantly reduce mortality from bleeding associated with trauma.

There is strong evidence that supports early administration of Tranexamic Acid (within 3 hours of bleeding). In the clinical trials, those patients who received TXA within the first 3 hours of bleeding had the most favorable outcomes when compared to those who received TXA outside the 3-hour window.

Life Link III is one of a select few programs that have this drug available in the pre-hospital setting. Having TXA onboard each of the Life Link III helicopters will ensure this important therapy is initiated in a timely fashion for those who need it most.
Chief Medical Officer Appointed Professorship

Life Link III Chief Medical Officer Dr. RJ Frascone has been named a full professor in Emergency Medicine at the University of Minnesota. He had previously been an associate professor. Congratulations to Dr. Frascone on this important accomplishment!

Flight Crew Recognized

Life Link III – Hibbing Base team members were recently recognized as recipients of the 911 Life Saver Award in St. Louis County, Minnesota for the role they played in saving the life of patient Gary Kainz last year. Flight nurse Tony Sundholm, flight paramedic Ken Slatten and pilot Robert Vetscher were recognized on May 14, 2013. They were part of 29 individuals, including Kainz’s family members, and members of the Palo Volunteer Fire Department, Lakeland Fire Department, Hoyt Lakes Ambulance, Minnesota State Patrol and the St. Louis County Sheriff’s Department and 911 Emergency Communications Center.

Life Link III Staff to Present at National Conference

Two Life Link III staff members have been selected to present at the Air Medical Transport Conference (AMTC), the national conference sponsored by the Association of Air Medical Services (AAMS). Megan Hartigan, RN, Clinical Nurse Educator, will present “LUCAS On Board: Our Experience Placing LUCAS Devices on All Our Aircraft.” Communications Center Manager Ray Reynolds will speak along with other representatives from the Minnesota Air Medical Council on the use of the Weather Turndown website.

In Brief

Life Link III Clinicians Participate in Water Egress Training

Nathan Malek (Alexandria) and Michael Barth (Anoka) recently attended a joint water egress training course held in Rochester, MN. The course was instructed by James Dinges of Water Egress Training Systems, LLC.

Water Egress Training Systems has developed a training program to educate personnel on the special conditions that may exist during an aircraft/vehicle water emergency. The course includes a classroom session and a practical session. The classroom session covers areas of operations that may expose crews/persons to an aircraft/vehicle in water emergency. The course also covers obstacles of egress/escape, aircrew crash positions, preparation for an in-water emergency, and the steps of egress/escape. The practical session places the student in an egress trainer where they can practice their egress skills. This course better prepares participants to survive a water emergency.

Pictured is Michael Barth in the "dunker" as he prepares to safely egress from his simulated airframe.
Life Link III now has an online store available through our website: www.lifelinkiii.com. Simply click on the “Shop” tab at the top of the homepage and you will go right to the store, which features a wide selection of Life Link III logo wear and accessories. In the store, you will have the opportunity to choose styles, colors and sizes of many different items, and have them shipped directly to you. We hope you enjoy shopping!