

AirWaves

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A Note From the Editor



By Laura Riley, Pilot

We have another fantastic issue of the Air Waves for you enjoy and learn from. If you are in the EMS industry and are not receiving the Air Waves let us know! We will add you to our mailing list right away. Please be sure all of your people are aware of this and are given the opportunity to read Air Waves. I have found that our newsletter is not reaching everyone it should and I would like to fix that. Our people put a lot of work into these articles to provide a service to you, and to teach you things that we find important and feel you should be aware of. Also, our website www.aircare.org has all of our recent and past issues posted. So you are able to go back and catch up.

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New Air Care Associate

Please Join Us in Welcoming Our New Flight Nurse

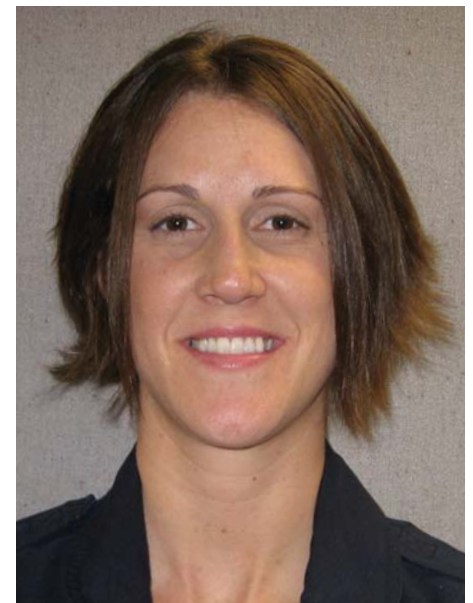
Sara knew at a young age that she wanted to become a nurse. As a teenager, watching the TV show 'Rescue 911', she decided that a career in the field of emergency and critical care nursing was to be her path. Sara began work as a patient care assistant at Bronson Hospital's Trauma and Emergency Center. Her interest in becoming a flight nurse, specifically with West Michigan Air Care (WMAC), started at that time. After a ride along with WMAC, during a leadership course in nursing school, her pursuit began.

Following graduation from Kellogg Community College, Sara continued to work at Bronson as an RN for 2 years. In 2000, Sara moved to Tennessee primarily working as an emergency room nurse, though dabbling in cardiac recovery and

occupational health. During her free time from playing on the Ocoee River, Sara continued the checklist of other certifications and various credential requirements, including obtaining her basic emergency medical technician license. Returning to Michigan, and Bronson Hospital, in 2004, Sara began working in adult critical care with her primary focus on patients requiring trauma, neurologic, burn and surgical intensive care needs. She obtained her paramedic license from Great Lake EMS in Grand Rapids in 2008, and was excited to finally make the leap into flight nursing, when she accepted a position in May of 2009.

Becoming part of the West Michigan Air Care team took longer than anticipated. Sara is grateful for the wide variety of talented and educated individuals that she had the privilege

of working with along the way. As Sara put it "It was a long road, but I had a lot of fun getting here." Sara has been married for 9 years. She and her husband Brian, live in Portage with their daughter Madison, 4 1/2, and son Ty, 2.



Same Goal, Different Roles



By Jan Eichel,
RN, CFRN, BA, EMT-P
(Flight Nurse, Director of
Clinical/Comm Ops)

The American Heart Association's goal for the STEMI (ST-Elevation Myocardial Infarction) "door to balloon" (D2B) time is 90 minutes. That's 90 minutes from the Emergency Department door to a Cardiovascular Lab (CVL) intervention, restoring blood flow to *viable* cardiac tissue. Borgess Medical Center also has a new Regional D2B goal of 90 minutes or less, from Regional ED to the Borgess CVL. How do you cover all those miles in Southwest Michigan *and* provide needed critical care in only 90 minutes? The answer: Both at the same time.

On a hot Saturday in June, James Macek, 57, and his wife had just arrived at his lakeside home in Colon, Michigan, about a three-hour drive from his permanent Illinois home.

He began doing what everyone does in summer, mow the lawn. It took only a few passes when he had chest pain that was unrelenting. He stopped the mower and went into the house, taking an aspirin and a nitroglycerin (NTG) sublingual. Lying down to rest, he remembered this pain was "the same as last time." Since his two stent placement in 2001 for chest pain, he was aware that every minute counts. His wife activated 911. Responding to the call, Colon Rescue Squad arrived and administered Oxygen via NRB. Next on scene were Life Care Paramedic Robin Quick and her partner, EMT Derek Bucknell. Robin quickly obtained a 12-lead ECG and Derek took a set of vital signs. Mr. Macek was pale, hot, diaphoretic, short of breath and c/o "feels like someone is sitting on my chest."

Robin is a woman of few words and serious content. She turned to Colon Fire Chief Tim Doenges and said, "Get me Air Care." He needed no explanation. A radio call to Central

Dispatch and information on the patient and location was referred directly to West Michigan Air Care, triggering the response of the critical care team. It was a 12 minute flight. During this time the patient was taken out of the house, given two more doses of add'l NTG, established an IV and transported to the LZ close by. Arriving within five minutes of the ambulance, the Air Care nurses off loaded with the rotors turning and proceeded to Mr. Macek for a rapid assessment. Flight nurses Kevin Ferguson, RN, Sara Sturgeon, RN, and Jan Eichel, RN each had duties to complete for a time dependant "turn around". Upon reviewing the patient and noting the ECG with >4mm ST elevation in leads II, III and AVF as well as V4-6; the 800 MHz radio system was utilized to advise the Borgess PATH (Patient Admission and Transfer Hub) of an incoming "STEMI alert." Fourteen minutes after the helicopter wheels touched the ground; they were back in the air, heading for Kalamazoo. During his 12-minute transport, a 4,000u Heparin IV bolus, additional Nitroglycerin, and a robust dose of Fentanyl changed his pain from 7/10 to 4/10.

With Air Care reducing his pain, Heparinizing and monitoring for serious or fatal arrhythmias, the end point of care is reperfusion therapy. On our early activation from the field, Dr. William LaPenna and the Borgess CVL team were swiftly responding to prepare for his arrival. Primary percutaneous coronary intervention (PCI) is superior to fibrinolytic therapy for treatment of STEMI, resulting in higher rates of cardiac artery patency and lower rates of re-infarction, stroke, and death. (Pollack 2008) The Borgess CVL team of Dr. William



Reuniting at Mr. Macek's lakeside home for a photo are LifeCare EMT Derek Bucknell, Jim Macek, LifeCare Paramedic Robin Quick, and Colon Fire EMT Jodi Gross.



Pictured L-R, Matt Overholt, Tom Talbot, Tim Doenges, Colon Fire and Rescue, Jan Eichel, Sara Sturgeon and Kevin Ferguson, WMAC

LaPenna, Jeff Miller, RN, BSN, Alan Muiser, RN, BSN and Clarence “Clay” Pearson, CVT, worked immediately after the patient’s arrival to accomplish reperfusion. They identified the **100% occlusion at the origin of the right coronary artery**, placing two stents to restore perfusion. Shortly after arrival at Borgess, his symptoms were relieved. After a short hospitalization, Mr. Macek was discharged and follow-up prepared by his cardiologist in Illinois.

Six weeks later, at an interview in his lake home, Jim spoke of how “surprised” and “impressed” he was

with our *system of teams*, working together. It worked “fantastic” in his opinion. He continues to walk everyday, “even uphill,” as part of his cardiac rehab program. Dr. William LaPenna reviewed Jim’s case with me. He stated, **“The STEMI is much like a trauma patient and outcome is dependant on rapid action.”** There is no more rapid action than to utilize Air Care when a STEMI is identified.

Lynn Smith, RN, BSN, Director of CVL at Borgess, knows that 90 minutes or less from the Regional ED to Borgess CVL will not happen effortlessly. **“Over this past year, we**

have all made great improvements in how rapidly STEMI patients are diagnosed and treatment is initiated. We encourage you to set up an early activation system with your local EMS. If 12 lead EKG’s are available in your community, consider EMS activation of air transport so they can arrive at your hospital and assist you within minutes of your patient’s arrival.”

The phrase “Time is Muscle,” describes the need to eliminate delays in definitive care for STEMI’s. The minutes add up quickly from the patient’s front door to the CVL balloon inflation, especially when they are many miles apart. The time from the ECG taken *in his home*, to arrival in the Borgess CVL, 28 miles away, was 89 minutes. Now that is an impressive door to balloon medical response for all teams involved.



Pictured L-R, Alan Muiser, RN, BSN, Clarence (Clay) Pearson, CVT, Dr. William LaPenna and Jeff Miller, RN, BSN.

References:

Field, J. M. (2008). STEMI Provider Manual. American Heart Association, Dallas, TX
 Pollack, C.V. Jr., Antman, E.M., Hollander, J.E. (2008). 2007 focused update to the ACC/ AHA guidelines for the management of patients with ST-segment elevation myocardial infarction: implications for emergency department practice. *Annals of Emergency Medicine*. 52(4), 344-355

New Equipment & Procedures to Advance AirCare Medical Crew Capabilities



By Kevin Franklin
CFRN/EMT-P
(Flight Nurse)

Critical care transport medicine is a special branch of Pre-hospital/ Inter-hospital care that requires a progressive, dedicated, highly educated and credentialed team to care for patients. Often patients require a level of care that is beyond, or anticipated to grow beyond, that available from an ALS ambulance unit. Here at Air Care we are committed to providing the best, most effective and safe patient care to those we serve in SW Michigan and beyond. To do this Air Care maintains its leadership role in critical care transport by providing highly experienced, dual licensed (RN and EMT-P), board certified flight nurses (CFRN) on every flight. These same medical crew are then continuously evaluating, researching and safely putting into practice new equipment,

procedures and protocols that improve patient care and outcomes. Recently Air Care has added 3 new pieces of equipment that will improve patient care throughout the region.

The first piece of added equipment is the Alaris Med infusion pump system. This IV pump has become the primary IV pump utilized by Air Care crews. Advantages of the new IV pump are:

- » Ability to run 3 separate medications from one IV pump concurrently
- » Ability to use IV bags, bottles or syringes
- » Ability to withstand the harsh environment that transport medicine endures
- » Considerable smaller size of equipment compared with 3 traditional IV pumps
- » Extended life battery to provide for multiple uses between charges
- » Fully programmable library to ensure accurate dosing

The new Alaris Med infusion IV pump is designed to improve patient care at the point of contact and throughout the transport phase. Feel free to ask questions to the medical crews regarding the new pump.

Another piece of equipment that Air Care introduced to the region is the EZ-IO by Vidacare. Medical crews utilize the EZ-IO vascular access device in the proximal tibia for patients requiring vascular access. With a complication rate of less than 1/2 of a central venous catheter, the EZ-IO provides a rapid vascular access device in hemodynamically unstable patients. Air Care has expanded the EZ IOs role in patient care by adding the proximal humerus as another IO site. Air Care crews utilized the EZ-IO vascular access device in the proximal tibia for patients requiring vascular access in order to provide needed fluid or drug therapy. One challenge met was that at times patients would have contraindications to having an IO placed in the lower extremities. Air Care is happy to announce that training and credentialing has been completed on expanding the available sites for the EZ-IO use. Medical crews can now utilize the humeral head site when a more distal peripheral site is either not available or contraindicated.

The humeral head site allows vascular access to be obtained rapidly in unstable patients and does not interfere with the ability to care for the patient. Complications from the new site are identical to the proximal tibia site and continue to have a complication rate of less than 1/2 of a central venous catheter. It is anticipated that having access in both sites will limit the





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other optical and video laryngoscopy systems are:

- » Smaller size for use in transport medicine
- » Self contained and single patient use
- » Sizing for patients from infant through adult
- » Considerable cost benefit over non-disposable systems
- » No viewing screen to become distorted or difficult to see in field conditions

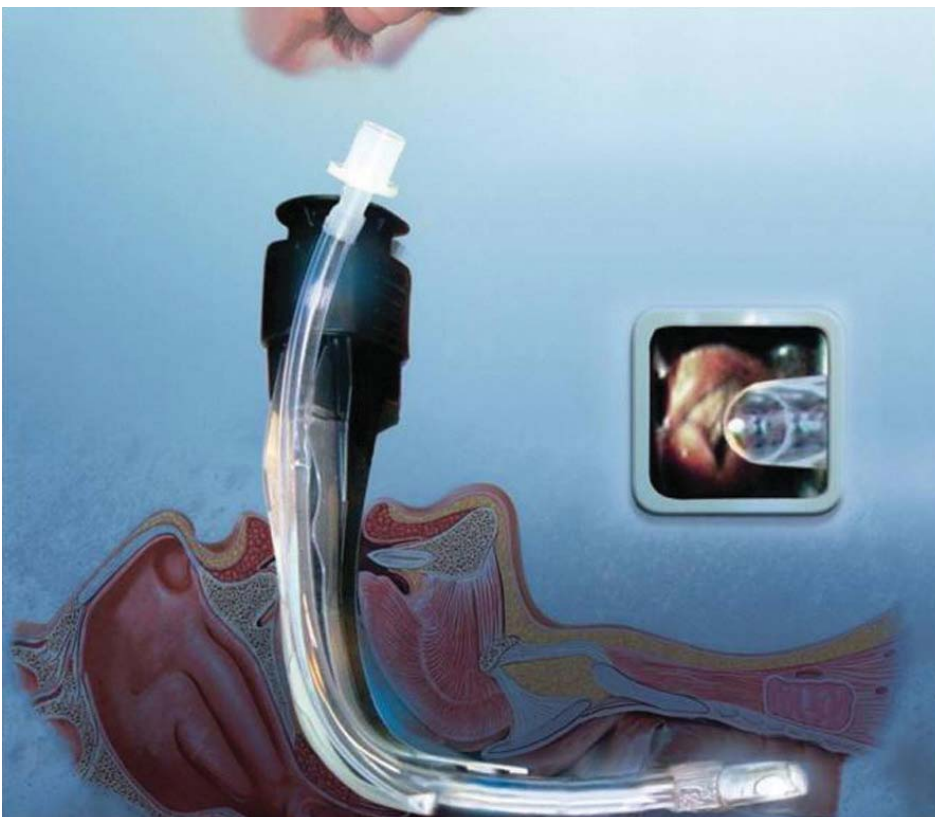
number of times patients must be exposed to the complications that can occur with central venous catheter access.

Air Care's last new piece of equipment is the AirTraq, an optical laryngoscope designed for difficult airway access patients. At Air Care the goal in airway management is for a 95%

first pass success rate with all airway intervention patients, a standard set as high as many anesthesiology practices. To reach that goal Air Care realized the need for an indirect system that could adequately visualize the glottic opening even when conditions were suboptimal for direct laryngoscopy. Advantages of the AirTraq over

Air Care crews have already utilized each of these new tools at the time of this publication in order to augment and improve patient care in SW Michigan. Air Care medical crews look forward to questions and comments from providers throughout the region as this new equipment and procedures are utilized on patients. In addition Air Care welcomes future suggestions/changes that can improve patient care throughout the critical transport phase of care. Future suggestions can be forwarded to Air Care's Medical Director, Glenn Ekblad DO, or to the Clinical Operations Director, Jan Eichel CFRN/EMT-P.

From all of the crew members at Air Care, thanks for giving us the opportunity to provide our services to you and your patients. We are dedicated to providing a level of care, compassion and professionalism that leads the industry and provides the best transport outcome for all of your patients.



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New Air Care Associate

Please Join Us in Welcoming Our New Flight Nurse

Matt began his medical career in 1987 as a volunteer with Reading Emergency Unit in Reading, MI. He completed his Emergency Medical Technician class in May of 1989, and began working part time with the Branch County Sheriff Department's ambulance service. In March of 1990 he flew along with the old Bronson CareFlite as an observer. This experience motivated Matt to enroll in nursing school at St. Vincent Hospital in Toledo, OH. Matt completed his nursing degree in 1993. He then began working at Borgess Hospital, on the 8 North cardiac floor.

Missing the volunteer Emergency Medical Service experience, Matt moved back to Reading, MI in September of 1994, and rejoined the Reading Emergency Unit. He also began working in the Critical Care Unit at Hillsdale Community Health Center. He left Hillsdale Hospital in May 1995 to begin working in the Emergency Department at Cameron

Hospital in Angola, IN. He completed his Paramedic class with Reading Emergency Unit in 1996. Matt then left Cameron Hospital in January of 1997 to work at Reading's Emergency Unit full-time as a Paramedic/RN for their newly formed Medical Intensive Care Unit. Missing the emergency department, Matt returned to Cameron Hospital ER full-time in November of 1999, and also began working as a relief nursing supervisor in March of 2000. In September of 2000 Matt began working part-time as a flight nurse with Parkview Samaritan flight program in Fort Wayne, IN. Matt has continued to work at Cameron Hospital both as a nurse and as an Advanced Cardiac Life Support instructor, as well as working part-time with Samaritan. He joined West Michigan AirCare in August of 2009 as a fulltime flight nurse.

Matt's hobbies include hunting, fishing, and helping with his parent's

1,500 acre farm. His family includes his wife Cindy, children Kirsten, age 20, Colton, age 7, and dogs Sebastian and Jake. Matt is also barn manager for the Hillside Paints and Quarter Horses, his wife's horse farm. (Actually, he just feeds and cleans up after the horses.) But, we know he does a great job at it! Welcome aboard Matt.



Give the Gift of Air Care

Looking ahead for Christmas or birthday ideas? Shop at Air Care! Try our online catalog at www.aircare.org. You'll find excellent, quality apparel and other gift ideas. Air Care has the perfect fit! Would you like an Air Care gift for yourself? Make it easy for your loved ones ... just circle this article and leave it out for them to discover. (Hint. Hint.)

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A Heartfelt Farewell

After 11 years of dedicated service to the West Michigan Air Care Mission of Safety, Excellence, Compassion and Teamwork, Laura Riley bids adieu.

Laura completed over 1,400 patient transports during the course of her employment with Air Care.

She has been a valued associate, an outstanding pilot, an excellent instructor pilot and the editor of the Air Waves publication.

We wish Laura much success in her future endeavors.

Laura, you will truly be missed!



Calling All Amateur Photographers

Do you have a photo that would be perfect for our website photo gallery or calendar? Send it to dmjohnston@aircare.org for consideration. For best results, a 6 megapixel (or higher) camera is recommended. All photos are appreciated and we'd especially like to see aircraft close-ups, landings and takeoffs, and shots of great teamwork!





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