

News and Views

from **Air Care & Mobile Care**
University Hospital • Cincinnati



News and Views Issue 2 – Winter 2008

Air Care & Mobile Care at University Hospital, Cincinnati, has been working to update our new Web site. In the last issue we announced the launch of www.aircareandmobilecare.com. Now, you are invited to browse the site. If you would like to be added to the newsletters electronic distribution list, contact the editor at NewsandViews@healthall.com.

We recently realized that we typically have so much helpful information to offer in our newsletter that we cannot fit everything into our four-page format. Beginning with this issue of *News and Views*, we will place expanded versions of articles on our Web site. For instance, you'll see a case review in this newsletter, which will reference an EKG that is viewable on our Web site. Just go to the Web address above and click on the community outreach link on the left side, then choose "Newsletter" to be taken to the full articles with pictures and diagrams.

In the Media ... Now the Inside Scoop!

On Dec. 31, 2007, our Air Care crew experienced a problem with one of the two engines of Omni Flight's aircraft while approaching an accident scene in Indiana. Our pilot skillfully landed the aircraft softly in a nearby field, utilizing

the power from the remaining engine.

There were no injuries and no damage to the aircraft. No patient was onboard, and the problem engine was replaced by our mechanics.

The second incident occurred at University Hospital, but did not involve an Omni Flight helicopter or any Air Care crew. Early in the morning of Jan. 1, 2008, PHI of Kentucky brought a patient to University Hospital. As they lifted off, the PHI pilot noted difficulty in controlling the aircraft and therefore set the aircraft back down on the pad. It was a hard landing with the aircraft's skids sustaining damage, but no one was injured, nor was the helipad damaged. Air Care & Mobile Care assisted PHI in organizing a crane-lift to remove the helicopter from the helipad for repair.

(In the Media ... continued on page 2)



Crane brings PHI helicopter down from helipad

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 **camts**
Commission on Accreditation of Medical Transport Systems
Accredited since 1996

Certainly it is an unusual coincidence for these two incidents to occur within days of each other, but they are unrelated. Fortunately, these types of mishaps are rare. Air Care & Mobile Care has had a spectacular safety record throughout its 24-year history, largely because safety has always been our top core value. Nevertheless, each member of our team has recommitted him- or herself to doing everything possible to continue to elevate our safety culture to new levels.

To Our Referring and Receiving Physician Partners

Dr. Bill Hinckley, Emergency Physician, Flight Physician and Medical Director, Air Care

The Emergency Medical Treatment and Active Labor Act (EMTALA) states that in any inter-facility patient transfer, the transferring physician is responsible for not only correctly weighing the risks and benefits of transfer, *but also for choosing an appropriate mode of transfer.* Sometimes this decision is easy, and sometimes it's very complicated. When in doubt, Air Care and Mobile Care's communications specialists (513-584-CARE) are trained to help you decide which mode of transport can most effectively and quickly transfer your patient to the appropriate facility.

In this regard, please take a look at the letter from Dr. Carol Cunningham, Ohio State EMS Medical Director, regarding the definition of Mobile ICUs in Ohio. The letter is a reprint from *Siren*, the Ohio State Emergency Services Board newsletter. The letter can be accessed on our Web site at www.aircareandmobilecare.com under the community outreach link.

At issue is this: In Ohio and elsewhere, many transport services are marketing the availability of "critical care ground transport." These providers utilize paramedic/paramedic teams that lack the training and protocols to be legally recognized as Mobile ICUs. The term, "critical care ground transport" has no legal definition, at least in Ohio.

If you have a sick patient who needs to be transferred either to an ICU, an operating room, a Cath Lab, or an angioplasty suite, then you probably need either a Mobile ICU-level transport

or a helicopter, depending on the time-dependence of the patient's illness and treatment.

Air Care and Mobile Care's fleet of CAMTS-accredited, State-of-Ohio-Licensed Mobile ICUs are each staffed by an EMT, a paramedic, and a critical care RN, trained and ready to provide for everything from ventilator management to art lines, swans, chest tubes, balloon pumps, transvenous pacers, thrombolytics, paralytics, and any other IV medication your patient might need. When a Mobile ICU is what you and your patient need, EMTALA requires that you ensure a Mobile ICU is what you're really getting.

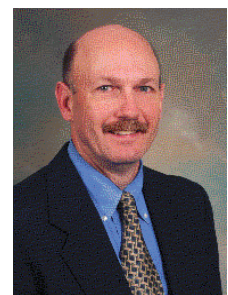


For an interactive view of our transport pyramid, go to:

<http://www.aircareandmobilecare.com/Pyramid.html>

Meet Dr. Jon Van Zile, Medical Director, Mobile Care

Jon Van Zile, M.D., completed medical school in Charleston, South Carolina. The University of Wisconsin and St. Vincent's Hospital in Toledo provided his residency training, which



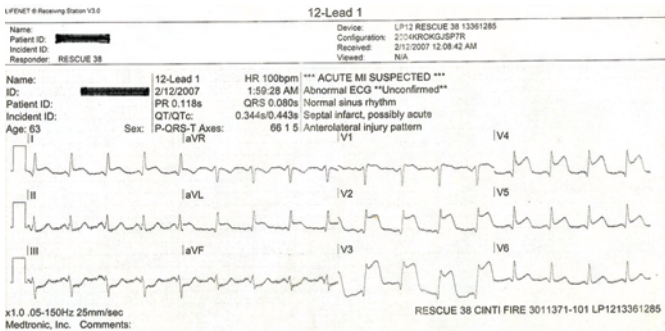
(Continued on page 3)

he completed in 1988. Today, he works with Vanguard Medical Group and can most often be found in the University Hospital or Jewish Hospital emergency departments.

Throughout his career, Dr. Van Zile has been active with EMS. He serves as Chairman of the Southwest Ohio EMS Pre-Hospital Care Committee and Medical Director for the Heart Restart Committee (a public access defibrillation initiative). In addition to serving as Medical Director for University Hospital's Mobile Care, he also is Medical Director for Hamilton County's Communication Center as well as Mason, Montgomery, Mariemont and Kings Island EMS services.

Dr. Van Zile states that his goal is "to make the Greater Cincinnati's pre-hospital care environment the best in the nation" and to make automatic external defibrillators (AEDs) more readily available in public venues.

Dr. Van Zile lives in Cincinnati with his wife, three children and two dogs. He stays active with triathlons, including the Little Miami Triathlon.



Case Study: Significance of a Pre-Hospital, 12-Lead EKG

Dr. Jon Van Zile, Emergency Medicine Physician, Medical Director, Mobile Care

Cincinnati Rescue 38 responds to a 51-year-old male warehouse laborer who experienced chest pain at work. EMS found the patient to be diaphoretic, pale, and complaining of 10/10 chest heaviness. A pre-hospital 12-lead EKG showed ST elevation in leads V1 – V4 , reciprocal ST depression in leads II, III, and aVF consistent with an anterior wall myocardial infarction (MI).

After the EKG, the patient was given oxygen and aspirin. Sublingual nitroglycerin was also given after confirming the patient was not taking medication for erectile dysfunction.

Upon arrival at the Emergency Department (ED), the patient was pain-free and his 12-lead was normal. However, based on the EMS 12-lead and the patient report, the ED physician activated the Cardiac Cath Lab team. Catheterization revealed a 98 percent narrowing of the left anterior descending (LAD) coronary artery. A balloon was used to open the LAD and a stent was placed to maintain that opening. Forty-eight hours later, the patient was discharged home.

Discussion:

The patient's outcome was optimized by the fact that EMS took a few extra minutes to obtain a 12-lead EKG prior to any treatment. An abnormal 12-lead EKG obtained while a patient is experiencing chest pain can provide strong evidence for cardiac disease and facilitate quicker treatment.

Proximity to the receiving hospital should not be a factor in obtaining a pre-hospital EKG as long as the patient is hemodynamically stable. Studies have shown that an EMS obtained 12-lead delays transports by less than 3 minutes. In this case study, the few extra minutes Rescue 38 spent at the scene to capture EKG changes made a significant difference in the patient's treatment upon arrival to the hospital. These changes were not evident after treatment and upon arrival at the ED (when the patient was pain-free).

In many communities, the pre-hospital EKG can be transmitted or faxed to the ED from the field. Actually, in some areas, the cardiologist can directly receive the pre-hospital EKG by a handheld Blackberry or similar device. In either case, in the event of an ST elevation MI (STEMI), the physician receiving the transmitted EKG can activate the Cardiac Cath team before the patient even arrives at the hospital. By streamlining this process, a quicker diagnosis and earlier intervention can occur. In other words, "time is muscle."

(Case Study ... to be continued on page 4)

Key Points:

- Pre-hospital EKG technology has improved in the last five years, making it an invaluable tool in diagnosing and treating non-traumatic chest pain.
- The pre-hospital EKG should be done while the patient is experiencing chest pain and prior to treatment with medications. But don't delay transport of a hemodynamically unstable patient.
- Transmit the EKG to the receiving ED whenever possible to expedite the care of patients who may need an emergent coronary intervention.



911 to Balloon... Making a Difference

Research has shown that prompt treatment increases the likelihood of survival for patients experiencing an acute MI with ST elevation (STEMI). Opening the coronary artery in the Cardiac Cath Lab with a percutaneous intervention (balloon or stent) reestablishes blood flow to the myocardium and decreases the damage to the heart muscle. The American College of Cardiology has set a goal benchmark time of 90 minutes or less from the time the patient enters the ED until the artery is open in the Cardiac Cath Lab.

A 2006 study published in the *New England Journal of Medicine* reported that only 35 percent of hospitals met the 90-minute goal. At the time of the study, University Hospital was one of the majority of hospitals that did not meet the 90-minute timeline. But over the last year, we have changed many of our processes and have become a known leader in emergent cardiac care. Over the past six months, University Hospital's average

door-to-balloon time has dropped to an amazing 69 minutes.

Processes that have changed include more squads sending 12-lead EKGs obtained in the field to the ED prior to patient arrival. This single improvement has led to a balloon time less than 90 minutes for all patients who have had an EKG sent in by EMS and met angioplasty guidelines - a 100 percent success rate! Other changes include the ED physician being able to notify the Cath Lab team, even before the patient arrives. These patients can also benefit from a rapid registration process similar to trauma patients, who may only spend minutes in the ED before being quickly routed to the OR.

About 500,000 people suffer STEMI in the US each year. Balloon angioplasty can reduce the risk of death by 40 percent, but only if performed within the 90-minute window. Air Care & Mobile Care is frequently called to emergently transport patients requiring cardiac catheterization.

We recognize the critical role that EMS plays in the care of these patients. In order to build a partnership with EMS, University Hospital has hosted two full-day classes with CEUs covering topics such as ECG interpretation, identification of acute STEMI in the field and correlating ECG changes with coronary blockages. In addition, time is available for interested EMS to observe actual Cath Lab cases, both elective and emergent. More classes and observation times will be available in early 2008.



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