



# Upcoming Events

Spring 2009

## April

**EMS Night Out-Code Cool**  
 EMS Night Out is a quarterly educational event sponsored by MedCenter Air for prehospital and hospital staff aimed at addressing current trends in patient care or transport environment. The program promotes interaction with MedCenter Air crews and includes a lecture, two hours of Continuing Education Units (CEUs), food and drinks, give-a-ways, aircraft display and presentation of the Backboard Award. Please call 704-355-7620 for more information.  
*6 – 9 p.m. April 14*

**South Carolina EMS Symposium – Myrtle Beach**  
 Visit MedCenter Air at the symposium for information about programs and services.  
*April 15-18*

## May

**Metrolina Regional Trauma Advisory Meeting**  
 Location TBA.  
*10 a.m. – 2 p.m. May 1*

**National EMS Week**  
 For a list of MedCenter Air sponsored events during National EMS Week, stayed tuned to [www.medcenterair.org](http://www.medcenterair.org).  
*May 17-23*

**NASCAR Coca Cola 600 and Other Events - Lowes Motor Speedway**  
 Carolinas Medical Center is the official healthcare provider at Lowes Motor Speedway. CMC's Department of Sports Medicine will provide first aid and medical assistance on the track and throughout the speedway, while MedCenter Air helicopters provide immediate lifesaving capability for fans and competitors.  
*May 9-24*

May Continued...

**MedCenter Air Open House at Rock Hill Airport**  
 Rock Hill Airport/Bryant Field is located at 550 Airport Road in Rock Hill, SC.  
*11 a.m. – 3 p.m. May 17*

## June

**South Carolina Fire Chief's Conference – Myrtle Beach**  
 Visit MedCenter Air at the conference for information about programs and services.  
*June 18-20*

For a complete list of events and further details, please visit [www.medcenterair.org](http://www.medcenterair.org) or call **704-355-3996**.



## MedCenter Air Explains Post-Resuscitation Induced Hypothermia Treatment - AKA "Code Cool"

Therapeutic hypothermia is a growing topic of interest in the healthcare profession over the last few years. First introduced in the 1950s, it is now recognized as a beneficial method under the 2005 American Heart Association guidelines for post-resuscitative care of cardiac arrest patients.

Emergency Departments and ICU's across the nation have developed protocols utilizing therapeutic hypothermia as an effective means of treating ischemic brain injury, which is a common cause of morbidity and mortality in post cardiac arrest patients. Because evidence strongly supports the benefits of hypothermia induction, EMS agencies are now being trained and equipped for inducing hypothermia during the pre-hospital phase.

So what is the goal of therapeutic hypothermia? During cardiac arrest, there is a decrease in blood flow to the brain that often leads to ischemic brain injury and subsequent neurological deficits after return of spontaneous circulation (ROSC). David Pearson, MD, with the Emergency Department at Carolinas Medical Center (CMC), says the goals of therapeutic hypothermia are to preserve brain function and avoid secondary brain injury. At CMC, nearly 50 percent of patients have had a favorable outcome, as defined by a positive neurological outcome.

While MedCenter Air has been transporting patients with cooling measures implemented at outlying facilities, crews will now

be able to implement the protocol on both scene and inter-facility responses. These initial measures include a 30ml/kg bolus of chilled normal saline cooled to a temperature of four degrees Celsius and infused over one hour. The goal is to keep the patient's temperature between 32 and 34 degrees Celsius for 24 hours. The treatment will not be initiated on patients that have an initial temperature of less than 34.5 degrees Celsius.

MedCenter Air will not place ice packs to axilla and groin, as research shows this method of cooling to be ineffective. Once crews implement the process of cooling, the "Code Cool" team at the receiving facility will be notified and further cooling equipment such as the Artic Sun will be applied

immediately when the crews arrive.

Why does "Code Cool" patient care at CMC stand out from other hospital's programs? Dr. Pearson, says it's because CMC's "program not only uses therapeutic hypothermia, but offers a comprehensive post-cardiac arrest care bundle." The post-cardiac arrest care bundle is CMC's standard of care, developed through evidence-based practices. This utilizes specific hemodynamic and ventilator-optimization goals to provide early goal-directed therapy for



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these patients, thus optimizing their neurological outcome. In addition, CMC has 24-hour, seven days a week ICU specialists (intensivists), cardiologists and interventionalists with the capability to cath these patients. CMC's goal is to provide early intervention for patients with suspected acute coronary syndrome, with angioplasty as the most common intervention.

This is an exciting new direction for MedCenter Air and supporting emergency crews to increase survival following cardiac arrest. The protocol allows for crews to implement "Code Cool" on inter-facility and scene patients. For EMS personnel, local protocols will need to address the post-arrest patient and the potential for utilizing aero medical transport. The inclusion criteria for "Code Cool" patients includes:

- Patients between the ages of 18 and 75
- With an ROSC time of greater than three minutes and have remained comatose with a Glasgow Coma Scale (GCS) of less than eight during that time
- Patients must also be status post ventricular fib or pulseless ventricular tachycardia arrest, or have a healthcare provider witnessed pulseless electrical activity (PEA) or bradyasystolic cardiac arrest

All patients who undergo "Code Cool" care will be

intubated, if not already done so, upon MedCenter Air arrival. Exclusion criteria includes traumatic cardiac arrest, patients with any evidence of intracranial hemorrhage and those with terminal disease processes.

MedCenter Air transport goals are to:

- Maintain mean arterial pressure (MAP's) greater than 70,
- Oxygen saturation (SPO2) greater than 94 percent,
- End-tidal carbon dioxide (ETCO2) between 40 and 50mmhg.
- Treat dysrhythmias that occur secondary to hypothermia induction. However, bradycardia secondary to hypothermia induction should not be treated with Atropine if the patient is otherwise stable. If bradycardia must be treated secondary to hemodynamic instability, drugs of choice include Dopamine, Epinephrine and Levophed drips.

Therapeutic hypothermia has been studied for decades with positive patient outcomes now being reported. Providing this treatment as quickly as possible to appropriate candidates will improve neurological results. The pre-hospital and Emergency Departments play a vital role in the implementation of this procedure alongside MedCenter Air and Carolinas Medical Center initiation and continuation of treatment. ■

## MedCenter Air Says Farewell to Mike Davis, Rotor Wing Pilot, Charlotte Base

Mike Davis joined MedCenter Air 13 years ago and has flown more than 1,987 missions with the team. Mike's aviation career spans more than 42 years in both helicopter and fixed wing aircraft, while logging more than 11,000 hours. Mike is the only MedCenter Air pilot to fly both the rotor and fixed wing aircraft for the team.

Helping save lives and participating in the healthcare community has been Mike's most sought after reward. Charlotte Thomas, out-reach coordinator and fellow in-flight team member, reflects on Mike's service at MedCenter Air:

*Mike was the first pilot I flew with at MedCenter. Originally, I thought he was very intimidating, and he even growled at me during our first flight. He has very high standards centered on safety and professionalism and holds crew members to them. But after spending time in the crew quarters with Mike, I quickly decided that he was just a big teddy bear. Some of my best memories of this team involve Mike's storytelling in between flights. Through all of his stories, and occasional growling, Mike taught me to hold myself to the highest standards and has made me a better crew member.*

Mike is retiring to the "quiet" life in the country where his wife Bernice is sure to keep him busy. He won't give up aviation altogether though and can be found on most



weekends flying radio controlled aircraft at the Oakboro RC field in Stanly County.

*Thank you Mike for your years of dedication and service to Carolinas Medical Center and MedCenter Air. You will be missed.* ■

## Landing Zone Operations during Multiple Aircraft Responses

Anytime an aircraft responds to a scene, safety must be in the forefront of everyone's mind. At mass casualty incidents when multiple aircraft are inbound, however, diligent landing zone (LZ) operations from prehospital providers become paramount.

Communication is the key to effective and safe operations at the aircraft landing zones. Informing responding air medical teams of other responding aircraft should be done as soon as possible. If applicable, this communication should be completed by the 911 communication centers during the initial request for transport. After determining that multiple aircrafts will be needed, MedCenter Air communication specialists will make calls to locate and coordinate additional helicopters as needed.

### Set-Up of LZ

When setting up the landing zone for multiple aircraft, it is important to remember that each aircraft will need the appropriate space to land. In most cases, a single aircraft will need 100 square feet; two aircraft will need 100 foot x 200 foot; three will need 100 foot x 300 foot, etc. Be advised that media, family members and the general public at the LZ will increase security challenges for incoming aircraft.

The "lead" or initial aircraft landing in the LZ will establish the landing direction and coordinate sequence of entry with other aircrafts. It is important to note that lighting requirements could change if the responding aircrafts differ in their night vision goggle capability.

It is imperative that all responding aircraft operate off the same LZ radio frequency at all times. LZ coordinators,



aircraft crews, pilots, and other agencies involved in the incident need to be able to quickly and effectively communicate with each other.

Effective LZ briefings should include: a description of terrain, location of the landing zone including all obstacles, wires, poles, towers, etc in the approach path as well as in the LZ, position of where the aircraft should land, location and status of other aircraft already in LZ, notification of other inbound aircraft and, if known, their estimated time of arrival.

A safety initiative that prehospital providers may not know is that all HEMS (helicopter emergency medical service) pilots routinely announce their operations and intentions on the air to air frequency 123.025 to notify ANY aircraft near the LZ of any scene.

MedCenter Air communication center also has the ability to track several other regional programs' aircraft via Outer-Link (our satellite tracking program) and will inform responding crews. However, none of these initiatives are a substitute for the LZ coordinators scene knowledge.

### Ground Operations

Once the aircraft arrive, LZ operations continue to play a key role in the safety

of the scene. Due to the wind generated from lift off and landings, arriving and departing aircraft may damage other aircraft with open doors or compartments and disrupt patients.

LZ command should notify pilots and crews of other teams' intentions. Prehospital and fire department providers should be aware of all aircraft locations to avoid "tunnel vision" while assisting with the loading of another aircraft or returning to safe area after assisting flight crews.

It remains crucial that ground crews from flight and EMS crews get confirmation from the pilots with the traditional "thumbs up" before approaching the aircraft. Confirmation to approach could be delayed for a short time if the pilot is on the radio with other aircrafts.

### Clinical concerns

EMS should triage patients according to county policies. Crews should be notified of receiving hospitals for other patients at the scene. Crews do not want to separate family members or overwhelm a single receiving facility and need to plan logistics accordingly. ■