

# LIFE STAR LINES

A Hartford Hospital publication addressing articles of interest to emergency and critical care personnel

Vol. XIV No. 6, Spring 2005

 HARTFORD HOSPITAL

## Case Study: ACUTE STROKE

By James Marceland, RN, CCRN, CFRN, EMT-P

On December 12, 2004, fifty-six year old Paul Bell was resting at home when he suddenly developed a severe headache, left sided numbness and garbled speech. He promptly called 9-1-1. Middlesex Hospital Paramedic Lisa McCarroll and Essex EMS personnel responded and immediately suspected that Mr. Bell was having an acute stroke. Aware of the newest time-sensitive stroke treatment options, EMS personnel requested LIFE STAR to intercept at Shoreline Clinic to facilitate rapid transport to Connecticut's premier Stroke Center at Hartford Hospital. On LIFE STAR's arrival, the patient had just been brought into the clinic with no noted improvement in his neurological exam. Within 13 minutes, authorization for transport to Hartford Hospital was obtained and Mr. Bell was en route by helicopter. Total flight time was 17 minutes. One hour and 20 minutes after onset of his stroke symptoms, Mr. Bell was diagnosed with an ischemic stroke and was effectively treated with intravenous tPA at Hartford Hospital. Five days later, he was discharge home with mild left sided deficits. Further rehabilitation has all but eliminated any remnants of this stroke.

### Discussion:

According to the American Heart Association, more than 700,000 people annually (one person every 45 seconds) will experience an acute stroke. In 2001 alone, strokes killed more than 150,000 Americans. Strokes can be classified as ischemic (arising from a clot in an artery within the brain) or hemorrhagic (bleeding from a ruptured cerebral vessel). Up to 85% of acute strokes are ischemic in nature. Prompt recognition of stroke symptoms and triage to an appropriate receiving facility is necessary to minimize the potential for permanent disability and/or death.

In 2004, Hartford Hospital was accredited as a Primary Stroke Center by The Joint Commission on Accreditation of Hospital Organizations (JCAHO). This designation, much like a trauma center designation, is obtained after a group of specialists have visited and verified that the hospital provides excellent stroke care. Hartford Hospital is Connecticut's



only accredited Stroke Center. As a Stroke Center, Hartford Hospital has developed aggressive protocols to ensure that all patients presenting to the Emergency Department with neurological deficits receive immediate attention from several specialists prepared to deal with virtually any neurologic emergency. Their goal is to minimize the time required to determine and implement appropriate therapies.

Several treatments are now available at Hartford Hospital for the treatment of acute ischemic stroke. They include: IV tissue plasminogen activator (tPA), intra-arterial (IA) thrombolysis, and mechanical embolus removal. All of these therapies are very time sensitive. In order for intravenous or intra-arterial thrombolytics to be effective against a stroke caused by a clot, the therapy must be initiated within THREE hours of onset of symptoms. This can be

Ischemic Stroke Treatment Option	Offered for onset of symptoms less than:
Intra-arterial tPA	3 hours
Intravenous tPA	3 hours
Mechanical Embolus Removal	6 to 8 hours

very difficult because a brain CT (to rule out hemorrhagic stroke) and other lab tests must be completed prior to the initiation of thrombolytic therapy.

IV tPA works on the same principle as thrombolytics given to patients suffering from an acute myocardial infarction, potentially "dissolving" clots in the brain as well as throughout the entire body. In contrast, IA thrombolysis involves directing small doses of a thrombolytic directly

into the affected vessel within the brain. Obviously, this requires specialized equipment and personnel, which are available 24-hours/day. The IA method is more labor intensive, but carries the benefit of exposing the patient to a much smaller dose of the thrombolytic only in the area it is needed.

A third treatment option is mechanical embolus removal. This method requires an interventional neuroradiologist to thread a catheter into the affected vessel in the brain. By using a corkscrew like mechanism, the doctor can withdraw the clot. This method was developed due to the many contraindications to giving thrombolytics, including the small three-hour window to start the infusion. Embolus retrieval may be initiated 6 to 8 hours after onset of symptoms, extending the patient's chances for a positive outcome.

Paramedic McCarroll and Essex EMS are shining examples of the important role pre-hospital providers have in the new age of stroke care. Their quick and accurate assessment of Mr. Bell's, condition combined with the early activation of LIFE STAR for an intercept at Shoreline Clinic, saved precious minutes of Mr. Bell's treatment window.

#### Resources:

Hartford Hospital. 2005. Hartford Hospital. 9 January, 2005. <[www.harthosp.org](http://www.harthosp.org)>.

The Internet Stroke Center. 2004. Washington University at St Louis. 9 January, 2005. <[www.strokecenter.org](http://www.strokecenter.org)>.

This last link includes a free online CE worth 1 hour of contact time through Progressive Emergency Training, Inc. <http://www.strokecenter.org/prof/ems/index.html>

## DMAT: An Insider's View

By Greg Frani, RRT, EMT-P

Since the events of Sept 11, 2001, the role of disaster management and the medical teams who are able to respond has taken a real front seat in the medical community. The inception of DMATs (Disaster Medical Assistance Team) occurred long before 9/11, but has gained a much greater awareness, both publicly and professionally since that tragic day.

DMATs are an active part of the National Disaster Medical System (NDMS), which falls under FEMA and the Department of Homeland Security. These teams are comprised of both professional and paraprofessional medical personnel, as well as administrative, communication and logistical personnel. Type I Teams are designed to respond within 12 hours to a disaster or catastrophic event, and be able to provide emergency medical care while remaining self sufficient with supplies, pharmacy and personnel for up to 72 hrs. The versatility and flexibility of the DMAT allows them to be deployed in virtually any situation and to work from "normal" environments to "austere" environments. When activated, the personnel become part-time employees of the federal government and are required to maintain all certifications and licenses within their own respective discipline.

The many personnel that make up a typical DMAT includes physicians, physician assistants, nurse practitioners, respiratory therapists, nurses, pharmacists, pharmacy technicians, paramedics, EMTs, mental health professionals, and logistical personnel. The mission's objectives dictate the personnel that fulfill the mission roster.

DMATs have been deployed on missions where their actions range from support elements at high profile national events such as the Olympics and various large-scale presidential

events, to active deployments to natural disasters like those most recently encountered in Florida from hurricanes Charley, Francis and Ivan.

I have been a DMAT member of Metro NY-2 for more than two years. Being one of only two respiratory therapists on the team, the opportunities and ability to function under the *Federal Scope of Practice*, which when compared to many "typical" hospital environments is quite advanced, has really allowed me to sharpen skills not used on a routine basis. Included in this scope of practice are opportunities to practice hemodynamics monitoring, endotracheal intubation, advanced airway management, and of course, oxygen and aerosol therapy. The opportunities to provide patient care with this advanced scope of practice are both exciting and energizing, while being equally as rewarding.

Most recently, I was deployed on a training mission that coincided with the 2005 Presidential Inauguration in Washington, D.C. This was a unique mission in that DMATs were deployed in a much larger capacity than used in the past. We were the primary provider for medical care for the entire event under the direction of The Office of Attending Physician for the Capitol area grounds. We worked closely with all of the federal and local agencies for the continuing care and transportation of patients requiring medical treatment.

During this event, three different DMAT teams from across the country participated. I was the only practicing respiratory therapist. I worked along side members from both Texas-1 and NY-2 in one of the two main triage/pt care centers. Being prepared to handle any kind of immediate medical or disaster type emergency, we were hopeful we would not be needed, yet able to act on a moments notice. In the event our immediate resources were overwhelmed, there were additional resources readily staged in a continuous standby mode.

The potential patient population was quite varied, as individuals from all walks of life were on hand to watch this historic event. The day's weather conditions would pose a potential variable as it had snowed the day prior with accumulations in and around the D.C. area. The inaugural day itself would prove to be free of additional snow, yet turned out to be one of the coldest inaugural days in history.

With the day's temperature in the lower 20s, many patients were treated for mild forms of hypothermia and then released to watch the historic event. The day however, did not stop at that, as we cared for patient's having seizures, acute chest pain and shortness of breath.

At the end of the event, both trailers and two other stations within the event's perimeter saw more than 30 patients who had various medical emergencies. It was a long day, as work began at 3 a.m. sharp (being preceded by a previous day of Weapons of Mass Destruction (WMD) and Biological agent training) and didn't end until midnight. In the end, it was a very exciting and rewarding opportunity to be able to work alongside the many professionals I encountered while providing medical care second to none in this unique environment.



Flight Respiratory Therapist Greg Frani, RRT, EMT-P, joined the LIFE STAR Team in August 2004. He has extensive trauma and cardiac care experience. Greg graduated from Upstate Medical University in Syracuse, NY with a Bachelor of Science Degree in Advanced Cardiorespiratory Care.

## New Chief Flight Nurse



The LIFE STAR team has selected James Marcelynas as the new Chief Flight Nurse. Jim's clinical proficiency, vision for the program and exemplary leadership qualities will surely help him excel in his new role.

## LIFE STAR Photo Contest

Send us your photos of LIFE STAR!

### Contest Rules:

1. Open to EVERYONE!
2. Include your name and contact information with photo
3. Mail to:  
LIFE STAR  
c/o Hartford Hospital  
80 Seymour Street  
Hartford, CT 06102-5037
4. Or e-mail to [nwilson@harthosp.org](mailto:nwilson@harthosp.org)
5. Include information about photo: location, department involved in photo.

*All entries will be judged by LIFE STAR Marketing Committee. Decisions will be final. Winning entries will be posted in our next issue of LIFE STAR Lines and on our web site. Sorry, actual prints will not be returned and will become property of Hartford Hospital LIFE STAR Program.*

## LIFE STAR Softball Challenge

Does your organization have a softball team? Are you interested in a friendly game with the LIFE STAR team? Contact Ric Shotwell, [rshotwe@harthosp.org](mailto:rshotwe@harthosp.org)

## Ventilating Multiple Patients

By William Muskett, RRT, EMT-B

A mass casualty incident (MCI) can occur anywhere, anytime. Take a look around the community—there are nursing homes, night clubs, restaurants, business and industry buildings, sports arenas and many other venues that could produce a large number of casualties should tragedy strike. It is well within the realm of possibility that many of these patients could require ventilatory support simultaneously, in either the prehospital or inpatient settings. Here are a few options available to EMS and hospital providers when the immediate demand for ventilating devices overwhelms finite resources. Choosing devices that are easy to use, portable and readily available for a timely setup is key.

Manual resuscitators are simple, safe and plentiful, but are very personnel intensive. One provider can at best only ventilate two patients at a time, and fatigue during prolonged ventilation must be considered.

Mechanical ventilation is a much better option for patients requiring prolonged ventilatory support, and several different models of transport ventilators are commercially available. Some ventilators are completely pneumatic (no external power needed but are heavy on gas consumption), while others are battery-powered and will require recharging. The battery-powered Impact Univent (boasting a 9-hour battery life) and the fully pneumatic Biomed IC2A are two examples of ventilators that can easily be used to ventilate individual patients during an MCI.

The Vortran Automatic Resuscitator (VAR) is especially ideal in an MCI. This unique vent is lightweight, portable, disposable, completely pneumatic and can be run off a small O<sub>2</sub> tank. An included venturi system can give a FiO<sub>2</sub> of 50% while essentially doubling the life of your O<sub>2</sub> tank. Vortran also produces the E-Vent Case, an exceptional choice when multiple patients must be ventilated with limited resources. The

E-Vent Case is approximately the size of a briefcase and contains 10 VARs to accommodate 10 patients, a multi-outlet manifold for O<sub>2</sub> hookup and 20 feet of O<sub>2</sub> hose. These Vortran products are only rated for patients weighing greater than 40kgs.

The concern with all of the vents, especially for pre-hospital, is the use of O<sub>2</sub>. Adding a blender (an external air/O<sub>2</sub> mixing device) such as the Multiple-patient Ventilation System offered by Allied Healthcare Products, can further help extend a limited O<sub>2</sub> supply.

Regardless of which device you include in your emergency plan to ventilate multiple intubated patients, adequately training all providers to safely and easily use the equipment is crucial. Recurrent skills education, reinforcement via scheduled and unscheduled MCI drills, and selection of a simplified system can all lead to equipment competency in a true emergency situation.

## Flying Standby Trial

Jim Marcelynas, RN, BSN, CCRN, CFRN, EMT-P, Chief Flight Nurse

A survey was mailed to all EMS and fire services in LIFE STAR's primary response area late last year. Many responses were received (86% of them), and some changes in our operational policies were made in response to your feedback. After some discussion, we have decided to implement another change in response to the community's needs.

One common concern for some time now has been scene response times. The program implemented a standby policy several years ago in response to this. Responders typically place an aircraft on standby while responding to a call where a high mechanism of injury is likely based on location or dispatch information. Our responsibilities during a standby are to assure the requesting agency that we have an aircraft available, have the pilot perform a weather check, and assure all crew members are on the pad while waiting for a call back when the requester(s) arrive on scene. This minimizes liftoff time greatly and results in an overall lower response time. In an effort to further minimize overall response time and delivery to definitive care, LIFE STAR will be employing a flying standby policy for scene calls on a trial basis from May 1 until October 1.



There are several models of flying standby in use throughout the country. LIFE STAR's model will reflect one that has worked well for several programs both locally and nationally. The policy is fairly simple: If an agency places an aircraft on standby, and the aircraft is more than 20 miles from the incident, we will have that aircraft lift and head in that direction. If the agency recognizes a need for our services, contact your dispatch agency, and an ETA will be obtainable through LIFE STAR center. If there is not a need for our services, cancel us through your dispatch agency. We would like to make it clear to the community that there will be NO charge for this service if we are cancelled. If the aircraft is approaching the area of the incident,

and a decision has not yet been made, we will find a safe area 1-2 miles away from the scene to orbit until a decision has been reached. The goal of this trial is to minimize the amount of time to definitive care. At the end of the trial, we will evaluate the usefulness of this policy and determine if it should become a standing operating procedure.

### PROCEDURE

At the time of the standby request, your local dispatch agency will be notified if this will be a flying standby and an approximate ETA to the incident location will be passed on as well. An exact ETA can be given once the landing zone location is determined, if services are requested. Operations will proceed as they have in the past beyond that. The 20 mile "limit" was reached based on estimated response time. LIFE STAR felt that it may be unsafe to perform flying standby operations within this range as it does not allow a fire department sufficient time to identify and clear a landing zone.

### FEEDBACK

We at LIFE STAR would like to hear any questions or concerns you may have about this policy. Please feel free to contact us via e-mail [lifestar@hart Hosp.org](mailto:lifestar@hart Hosp.org), or [jmarcel@hart Hosp.org](mailto:jmarcel@hart Hosp.org). We appreciate your input.

## News Briefs: FYI



### St. Jude Bowl-a-thon

Country 92.5 radio personalities Jim Bosch and Corey Myers pose with LIFE STAR bowlers during the recent St. Jude's Bowl-a-thon. The event raised over \$7,000 to help fight pediatric cancer.

### LIFE STAR Lines Staff:

Editor: Lisa Duquette, RN  
 Nicole Wilson, Communications Specialist  
 Medical Director: Kenneth Robinson, MD, FACEP  
 Advisory Board: Steve Haemmerle, RRT, Chief Resp. Therapist  
 Jim Marcelynas, RN, Chief Flight Nurse  
 Lee Monroe, Director of Public Relations  
 Printing Advisor: Reginald Leonard, Director of Printing Services



☒ CCMC, AMR and LIFE STAR "elves" help collect toy and cash donations during the recent CT State Police Holiday Toy Drive.

### Toy Drive

LIFE STAR and AMR Ambulance staff recently helped to collect and deliver toys during the Connecticut State Police Holiday Toy Drive to benefit children treated at Connecticut Children's Medical Center (CCMC). Organized by TFC Michael Pendleton and Detective Ralph Medina of the Connecticut State Police, the two-week drive collected over \$40,000 worth of toys and \$8,800 in cash donations. CCMC staff members Jackie Grogan, Nancy Roncaioli and Robin Vidito can also be credited for the success of this campaign.

# LIFE STAR

 HARTFORD HOSPITAL

80 Seymour Street  
 PO Box 5037  
 Hartford, CT 06102-5037

NON-PROFIT ORG  
 U.S. POSTAGE  
 PAID  
 PERMIT #4361  
 HARTFORD, CT