Grievings section members! By the time this bulletin is published and in your hands, the sum-
mer will be more than half over. But as I write this column in early June, it does not seem that long
ago that here in Minnesota and elsewhere we were buried in a thick blanket of snow and cold. It is
futile how the perception of time changes with each passing year. Just think back to when you
were in grade school or even high school. The year seemed to last forever — especially the nine
months you were in class — and summer never flew by like it does now. I hope you are all enjoy-
ing the nice weather.

Of course, this time of year brings the added
danger of severe weather as well. Just the other week, I was out on a ground transport when we
encountered some very severe weather. We would have flown by rotor wing, but the impending
storms forced us to go by ground ambulance. The skies were dark, and the wind rocked the ambu-
calce as we headed to our destination. There were
storms warning out for the area, but we still
needed to be dispatched. As we proceeded, the
ambulance drivers nervously watched the skies and called back for updated weather reports.
Dispatch reported that there was a report of a tor-

nado on the ground in our area. It wasn’t long until
one of the drivers spotted the tornado approxi-
mately 15-20 miles away. Fortunately, it was mov-
ing away from us. For about 20 minutes we sat by
the side of the road and watched as the tornado
moved across the countryside. There was also an
unconfirmed report of another tornado on the
ground to the south of us heading in our direction.
You could not see the funnel cloud, as it was
embedded in a shroud of rain that appeared about
a mile wide. There was almost constant lightning
in the clouds preceding the wall cloud with the
tornado. Several additional cloud fingers were trying
to form into other funnel clouds alongside the existing
massive funnel cloud. Fortunately, there was not
eough energy in that cell to spawn another torna-
do.

For a brief moment we stood outside the ambu-
calce and watched in awe the power of nature,
hoping no one would be hurt or killed as this storm
cut a path across the countryside. The lightning
dow was reminiscent of a Fourth of July display.

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"FDA Approves Defibrillator" continued on page 2

I want to thank Kathleen, Brian, and Lucy for
contributing articles for this issue. As they can
attend, it is a painless process, and I am always here
for assistance. I would especially like to encour-
age any members who have transport stories like
Lucy’s to please consider submitting them. This
would turn into a fun section of the Bulletin. And as
always, I look forward to hearing from you with
ideas and or comments. My email address and
telephone number are listed on page 2.

Until next time, may all your transports end
safely for both you and your patient.

FDA Approves First External
Defibrillator for Children

by Steven E. Sittig, RRT

In May, Agilent Technologies received 510(k)
clearance from the Food and Drug Administra-
tion (FDA) for use in infants and children who experi-
ence cardiac arrest. The Heartstream FR2 AED
when equipped with specialty designed defibrilla-
tion pads, can be used on infants and children
under 8 years of age. The defibrillator pads employ
Highlight and Happenings from the CCTMC

by Kathleen Adams, RCP, RRT

I recently returned from the Critical Care Transport Medicine Conference (CCTMC) held in San Antonio, TX, April 9-11, at the historic Gunter Hotel. This conference just keeps getting better and better every year, a fact proven by a steadily increasing attendance. This year attendees and faculty numbered about 300. Many exhibitors were on hand as well, including equipment vendors representing everything from ventilators and helicopters to airways and isolettes. Lecture topics ranged from a light-hearted talk on neonatal resuscitation for non-neonatal teams copters to airways and isolettes.

Lecture topics included a reception held after the first day of lectures and a luncheon on the second day. These provided a great opportunity to meet people involved in transport from all over the country and even from abroad. Some attendees came all the way from Brazil and Germany. All this, and up to 14 CEUs from the AARC too!

Now anyone tuned in CPR and the use of AEDs can employ the new pediatric defibrillator, saving many young lives in the process. The FR2 pediatric pads are expected to be commercially available this summer. For further information check the AARC web site at: http://www.aarc.org.

Social events included a reception held after the first day of lectures and a luncheon on the second day. These provided a great opportunity to meet people involved in transport from all over the country and even from abroad. Some attendees came all the way from Brazil and Germany. All this, and up to 14 CEUs from the AARC too!

Then there was San Antonio itself, which is always a fun and interesting place to visit. For those of you planning to attend the AARC Congress there in December, I recommend dinner and entertainment on the River Walk, a visit to the Alamo, and/or a trip to the Teddy Roosevelt Bar.

The next year the CCTMC is planning to return to Las Vegas. So start making those plans and save those pennies, because this conference is worth it.

DHMT Aggresor Defibrillator continued from page 1

an attenuator that reduces the energy level delivered by the AED to the appropriate dose for a child or infant. These special pads have a connector with a pink teddy bear on a to denote to any lay responder the proper defibrillation pads.

Sudden cardiac arrest is a leading cause of death in the United States, affecting around 225,000 people, including small children. In order for an AED to be effective the electrical shock must be delivered within the first few minutes of arrest. Since the American Heart Association recommends lower defibrillation levels in children, these sometimes have been dangerous delays while waiting for specialized equipment and personnel.

Transport/Aorta Balloon Pump (IABP) Patient

Our transport team, CARDIGLIDE, is located at Avena McKeean Hospital and University Health Center in Sioux Falls, SD. We are a tertiary care center specializing in all levels of care, from neonate to adults. We have been involved in the transport of patients requiring the assistance of an IABP since 1999. Most of the IABP patients we transport come from other facilities within our region and are in need of specific procedures or bypass surgery. Occasionally, we transport a patient to one of the cardiac transplant or research facilities in our region. Transport is done by fixed wing (KingAir 200), rotor wing (Bell 222UT), or ground ambulance.

About six years ago our respiratory care department proposed adding IABP transports to the program. The respiratory care department was already involved with the setup and management of IABP patients in the operating room, cardiac catheterization lab, and coronary and intensive care units, so adding inter-hospital transport seemed the next logical step. We did a lot of research and talked to others who were transporting IABP patients, so once we set up the equipment, we were up and running. We required our flight respiratory therapists to have specific training in the operation, maintenance, and troubleshooting of the IABP. We are required to work with IABP patients in various settings and perform in-hospital and transport-specific competency testing throughout the year.

Initially, we started transporting IABP patients with a Dradco System 90T. The 90T was a good balloon pump for transport, but due to our aircraft configuration, we were required to break it down and stow the components for use in the fixed and rotor wing. We had a special bracket for use in the rotor wing that temporarily mounted the pump in the aircraft. Fixed wing transports were accomplished by mounting the balloon pump in a separate patient sled. When transporting by ground, we strapped the balloon pump in the ambulance. Soon we’ll be switching to a new balloon pump, the Dradco System 90P.

This System 90P will offer better pumping capabilities than our old 90T — plus it’s a little smaller and doesn’t require us to break it down and reconfigure it for transport. In itself should save us a fair amount of time. The System 90P will allow us to directly mount the pump in the ambulance and keep it ready for transport from the aircraft and when the patient arrives at the hospital. The IABP is inserted via femoral artery incision and the pump’s balloon is placed in the aorta, just below the subclavian artery. The balloon is inflated at the onset of the diastolic and deflated just prior to systole. As the balloon is inflated it helps push blood back to the coronary and cerebral arteries, and on deflation the void left behind helps assist the heart by decreasing afterload.

The main reason for placing an IABP are:

1. Acute MI with complications.
2. Circulatory arrest prior to total cardiac transplant.
3. In-compliance to bypass pump.
4. Patients in cardiogenic shock and pulmonary edema.
5. Patients unable to be weaned from cardiac bypass pump.
7. Septic shock.
8. Structural defects such as ventricular septal defect or mitral valve regurgitation requiring emergency surgical repair.

Since the balloon pump helps take some of the workload away from the heart, those patients should experience a decrease in afterload, heart rate, and cardiac work.

“Balloon Pump” continued on page 3

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The Unexpected
By Lucy Kauf, RRT, UNC Air Care and Ground Transport Services, UNC Hospitals, Chapel Hill, NC

Most transport situations would agree that you never know what you’re in for when you leave the hospital on a transport. Not only do you not know what you might find when you reach the patient, but other transport related issues can come into play and change your plans at any given point.

My partner, Beth Driscoll, RN, and I were sent on a rainy October evening to take a critical-ill, macheted neonate back to his originating hospital. We were prepared for a low-key, two-and-a-half hour ground run with our six-month-old friend, who was nicely situated on CPAP and secured in a car seat on the Skyrider minimizer. When we arrived at the referring hospital, the neonatologist transferred care of the patient over to the NICU staff and assured us that he was doing well. We had been on the expressway for about an hour when the cell phone rang. Uh oh! It was our MCO. She agreed that we needed to turn around and go back to the outlying hospital, we wondered, “Why? What happened along the way?” It just goes to prove that you never know what you’re in for when you go out on a transport.

When we arrived at the baby’s bedside, he was intubated and on a VBP Bird ventilator. He was cool and had capillary refill time of 10 seconds, and he was hypotensive despite dopamine and dobutamine infusions at near maximum rates. He had progressively worsening respiratory distress since birth earlier that day. His pulse and post-dural oxygen saturations were both hovering around 89%, despite being on 100% oxygen and relatively high ventilator settings. Our ABG showed a metabolic acidosis, and his ETT was in good placement on the right side of the tongue. We worried that maybe he was going on with that baby, but we weren’t convinced and therefore started on our way home (it was around midnight).

We were on the expressway for about an hour when the weather had cleared somewhat and there was an option for transplantation. When there is an option for transplantation, in addition to altitude changes, other possible complications include, but are not limited to:

- Arrhythmias
- Tachycardia
- Bradycardia
- Hypertension
- Hypotension
- Bleeding
- Arrhythmias
- Hypoxia
- Hypercapnia
- Acidosis
- Anemia
- Oximetry
- Oxygenation
- Hemodynamic instability
- Cardiac catheterization
- Pharmacologic therapy

We certainly had no idea that we would be seeing the baby again. It was then that we found out that it was, indeed, the same kid.

As we were leaving, we noticed a group of medical personnel swarming around a baby’s warmer on the other side of the unit. We wondered what might have happened that was so serious that the baby was immediately placed on the oscillation ventilator, turning up his dopamine and dobutamine to maximum, giving him several fluid boluses, and starting him on a sodium bicarbonate drip. While still in the basilea, the baby’s oxygen saturations started to drop and up went the dopamine and dobutamine to maximum, giving him several fluid boluses, and starting him on a sodium bicarbonate drip.

We had the driver speak with the communicator about the possibility of moving us somewhere closer by with the helicopter. In the meanwhile, our baby’s “M” oxygen cylinder ran out of oxygen! I quickly connected our ventilator to one of two available small “E” cylinders, but that probably wouldn’t be enough oxygen to get us back to UNC.

It was also getting into the morning rush hour, so we would have to get there sooner or later to drive through Raleigh. Luckily, the weather had cleared enough for the helicopter to come pick us up! We met the pilot at the helipad of a hospital near our location. The on-duty transport adventure was brought to a close when Beth and I decided to go into the only nearby NICU and turn over care of this critical child, who was immediately placed on the oscillation ventilator. We certainly had no idea that we would be gone that long, much less any of the other things that happened along the way. It just goes to prove that you never know what you’re in for when you go out on a transport.

Intra-aortic balloon pump dependent patient has been somewhat informative. Maybe adding IABP transports to your transport program could be a feasible option for you. Despite some of the challenges encountered, IABP transports have been for us an exciting and rewarding addition to our transport program, plus they have helped expand our role as respiratory therapists on the team.

**Transport Bulletin**

**Buyer’s Guide**

Your Ultimate Resource for Respiratory Product Information

http://www.buyer’sguideassoc.org
Preparing for the Psychological Consequences of Mass Destruction

Using nearly $5 million in federal grants, Saint Joseph’s University in Philadelphia, PA, has established a distance-learning center to prepare the country’s emergency response community for the psychological consequences of incidents involving weapons of mass destruction.

The Early Responders Distance Learning Center (ERDLC) will provide live-line responders across the country, including National Guard members, emergency medical technicians, firefighters, and others, with accredited, Web-based coursework and teleconferences on the effects of nuclear, biological, and chemical attacks on their posts and on victims.

For more information, call ERDLC at (610) 660-3932, or visit its web site, at http://erdlc.sju.edu.

Family Presence in the ED

For the first time, a qualitative study confirms that patients prefer to have family members with them in the emergency department (ED) during intrusive procedures (IP) or cardiopulmonary resuscitation (CPR). According to a report in the May issue of the American Journal of Nursing, having a loved one present eases patients’ minds when they feel more protected and less frightened.

The research brought to light several related emotional and psychosocial themes, including:

• Comfort: ED patients described themselves as being afraid, hurt, and in pain. With family members there to offer emotional support, they felt safer and more protected.

• Help: Family members were able to convey needed information to health care providers when patients were unable to do so for themselves, and also helped patients to understand and better tolerate their ordeal.

• “I Am a Person”: Patients confirmed that family presence humanized them to the health care providers and reinforced that they belong to a family unit.

• Maintaining Patient-Family Connectedness: The ED events led to family bonding through a shared experience that encouraged the flow of empathy and compassion. One patient said, “He was holding my hand. I just felt the whole vibration of his spirit.”

• Family Presence is a Right: Patients viewed family presence as a right, a belief driven by an innate need to be together and the perception that family members helped them cope.

• Impact on Family Members: Patients realized that their suffering took a toll on loved ones.

• Impact on the Health Care Environment: Patients considered the factors that need to be taken into account to permit family presence.

Keeping Kids Safe on Transport

Noting that there are no child passenger safety standards for occupants or equipment restraint systems in the ambulance patient compartment, researchers from Columbia University/Harlem Hospital Center recently analyzed crash tests of ambulance vehicles under real world circumstances to determine what forces occur under various crash scenarios.

In the study, full-vehicle-to-vehicle crash testing was conducted of several ambulances in intersection crash simulations. The ambulances were tested in both head on and side impact scenarios similar to real world situations. Instrumented crash test dummies (CTD), including a 3-year-old-child CTD (restrained in a child restraint seat secured to the stretcher), adult male and adult female CTDs, and medical equipment were positioned in the rear cabin patient compartment and restrained in various configurations.

Results of the crash tests demonstrated effective techniques for restraining the child patient occupant using a standard child car seat secured to the stretcher with standard stretcher belts. The testing also demonstrated effective techniques for securing the patient monitor and oxygen cylinder.

Furthermore, it was clearly demonstrated that unsecured occupants are a risk to both themselves and other occupants, including pediatric patient occupants who were well secured.

The study was presented at a recent meeting of the Pediatric Academic Societies.

Lights, Camera, Action

Emergency personnel in Elgin, IL, may soon be able to beam streaming video images from their ambulances or accident scenes to Sherman Hospital. Using the same technology that enables people to make cell phone calls while driving, the hospital, in conjunction with a local ambulance firm, is planning to outfit one or two of Elgin’s four ambulances with a digital camera that can not only photograph patients while in transport but also be detached for paramedics to shoot pictures at an accident scene. The camera is attached to a cellular phone and a transmitter, and a monitor at the hospital receives live video feed from the camera.

The hospital believes the streaming video will help ease fears by giving physicians back at the hospital an up-close look at the patient before he or she ever makes it to the emergency department.

Get it on the Web

Want the latest news from the section in the most efficient manner possible? Then access the Bulletin on the Internet! If you are a section member and an Internet user, you can get your section newsletter a week and a half to two weeks earlier than you would get it in the mail by going to your section home page at: http://www.aarc.org/journals/specialty/index.html. You can either read the Bulletin online or print out a copy to file away. The AARC is encouraging all section members who use the Internet to opt for the electronic version of the Bulletin over the mailed version. Not only will you get the newsletter faster; you will be helping to save the AARC money through reduced printing and mailing costs. These funds can then be applied to other important programs and projects, such as ensuring effective representation for RTs on Capitol Hill.

To change your option to the electronic section Bulletin, send an email to: mendoza@ aarc.org.

Specialty Practitioners of the Year

Don’t forget to nominate a fellow section member for Specialty Practitioner of the Year! Submit your nominations online at: www.aarc.org/specialty/transport/section/impresspdf forms.html.