Transport

May/June '99

by Kathleen Adams RCP, RRT

Did you know that there is a transport listserve available through the AARC web site? Well, there is, and it is just for section members. I bring this up because traffic on our listserve has been very light, leading me to believe that you are all either very quiet or just haven't signed up yet. For those of you who have not yet experienced the fun of being a member of a listserve, let me fill you in.

Let's say you are sitting around one day and begin to wonder, " Hey, are there any transport programs out there in which the RTs drive the ambulance?" If you were signed up for the transport listserve you could move to your computer and e-mail the question to the listserve. The listserve would then send your question out to all the other section members who have signed up. Each would then have the option of answering your question, and the response would also go to everyone on the list. It is a quick way to spread or receive news and information about issues important to transport personnel. So sign on and let's start talking.

How do you sign up for the listserve? It's easy! Just visit the AARC web site at www.aarc.org, access the "Members Only" area then go to the "Transport Section" and follow the directions to join the mailing list (i.e., the listserve). It only takes a couple of minutes and is very easy. I did it – and I am still fairly green when it comes to all this Internet stuff.

On another note, I recently received a call from AARC President Dianne Kimball addressing a concern that has been ongoing since last fall. As you may remember, back in November I sent a formal proposal to the AARC Board of Directors asking that the AARC join the Alliance for Critical Care Transport (ACCT). This is the group formerly referred to as the "Federation." It consists of organizations representing the various factions in the transport industry, such as air medical physicians, paramedics, nurses, etc. Dianne informed me that the board has voted "not to join at this time." While I find this disappointing, it by no means rules out membership in the future, and we will continue to work with our board liaisons toward that goal.

We do, however, have other things to accomplish this year as well. This will not be a "lame duck" year for me as chair. I will soon be completing at least two position statements for approval: one regarding the practice of respiratory care in the CCT setting and one on iNO on transport.

Finally, a somber note: we lost three more colleagues with the crash of a helicopter about 35 miles northwest of Las Vegas, NV on April 4. The Euro BO-105 went down in snowy weather on its way back to its base in Pahrump after ferrying a patient to Valley Hospital Medical Center in Las Vegas. Flight nurses Kathy Batterman and Leroy Shelton, and pilot James Bond, Jr. were all killed in the accident.

We have lost far too many transport personnel in the last year. This is a trend none of us would like to see continue. So let's be careful out there. May your roads be smooth and your landings soft. ■

American Association for Respiratory Care

Bulletin

Notes from the Chair

Nitric Oxide on Transports

by Michael Gibbons, RRT, UCLAPediatric Transport Team co-coordinator

The UCLA Pediatric Transport Team is currently using a new system to deliver nitric oxide (NO) during transport of its critically ill neonatal patients. Nitric oxide is a naturally occurring substance that, when inhaled in a gaseous form, can improve overall gas exchange in infants affected by pulmonary hypertension. The main benefit of nitric oxide is its ability to cause selective pulmonary vasodilation without a major effect on the systemic circulation.

The NO randomized clinical trial at UCLA has been developed by Drs. Kim Bui and James Atkinson. Potential candidates are those with pulmonary hypertension associated with meconium aspiration, pneumonia, sepsis, respiratory distress syndrome, or congenital diaphragmatic hernia. Patients transported by the UCLA transport team range from the aforementioned to all cardiac anonomolies: ROP; AV malformation; pediatric liver, heart, or lung transplant candidates; the simple-to-complex asthmatic; or basically any perinatal patient in trouble at a referring hospital. The team is composed of a respiratory therapist, RN, and MD, all of whom are specifically trained for the team.

The NO system we use was developed by Datex-Ohmeda and is called the Transport INOvent delivery system. This is a modified version of the standard system that has been in use by respiratory therapists at the UCLA Medical Enterprise for years. UCLA is one of a select few hospitals that have tested this transport system. Prior to this version, transport teams made do with makeshift versions that were bulky and did not always offer continuous monitoring of the inhaled gases.

The INOvent delivery system becomes an integral part of our current transport isolette and is able to interface with its mechanical ventilator. It also offers a manual NO delivery system for short-term manual hand bagging. Through the use of this total system, the lives of patients at referring hospitals are being saved by the dedicated respiratory therapists, nurses, and physicians of the UCLA Pediatric Transport Team. ■

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Assessment and Emergency Treatment at the Initial Care Facility

by Ronald Mlcak, RRT, Shriners Hospital for Children Burns Institute, Galveston, TX

Editor's Note: This is the third and final article in a three-part series covering the care of burn victims in the transport setting.

Transportation guidelines

The primary purpose of any transport team is not to bring a patient to an intensive care unit but to bring that level of care to the patient as soon as possible. Therefore, the critical time involved in a transport scenario is the time it takes to get the transport team to the patient. The time involved in transporting a patient back to a burn center becomes secondary. Communication and teamwork are the keystones on which an effective transport system are based.

When transportation is required from a referring facility to a specialized burn center, a patient can be fairly well stabilized before being moved. Initially, the referring facility should be informed that all patient referrals require physician to physician discussion. Pertinent information will include patient demographics data; time, date, cause, and extent of burn injury; weight and height; baseline vital signs; neurological status; laboratory data; respiratory status; previous medical and surgical history; and allergies.

The referring hospital should be informed of specific treatment protocols regarding patient management prior to transfer. To ensure patient stability the following guidelines are offered:

1. Establish two IV sites, preferably in an unburned upper extremity, and secure IV with sutures.
2. Insert a Foley catheter and monitor for acceptable urine output (30 ml/hr adult, 1 ml/hr child).
3. Insert a nasogastric tube and ensure that the patient remains NPO.
4. Maintain body temperature rectally between 38˚ and 39˚ C.
5. Stop all narcotics.
6. For burns less than 24 hours old, only use lactated Ringer's solution.

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Patient assessment by transport team prior to transporting to a specialized burn care unit

Initial assessment upon arrival of a flight team should include a list of standard procedures for determining a burned patient's current condition. First, a thorough review of the patient's history concerning the accident and past medical history must be done. This process provides the transport team with an excellent base from which to formulate a plan of action. The patient will certainly have been diagnosed by a referring physician; however, a transport team often finds problems overlooked in initial evaluations. Since burn care is a specialized field, modes of treatment may vary greatly outside the burn treatment community. Frequently, a referring hospital is not well versed in the treatment of burn victims and should not be expected to display the expertise found among clinicians who work with such patients on a daily basis.

Thus, the next step in stabilizing a burn victim is a physical assessment done by the transport team. These procedures should be performed in order and in a structured fashion. Assessment of a burn patient begins with the ABC's of a primary survey, including airway, breathing, circulation, cervical spine immobilization, and a brief baseline neurological exam. All patients should be placed on supplemental oxygen prior to transport to minimize the effects of altitude changes on oxygenation. Two large bore IV lines should be started and sutured in place.

In addition to initial stabilization procedures, blood should be obtained for initial laboratory studies, if not already done. Any correction of laboratory values must be done prior to transfer and verified with repeat studies. ECG monitoring should be instituted on all patients prior to transfer. Electrode patches may be a problem to place because the adhesive will not stick to burned skin. If alternative sites for placement cannot be found, an option for monitoring is to insert skin staples and attach the monitor leads with alligator clips. This provides a stable monitoring system, particularly for the agitated or restless patient who may displace needle electrodes. A Foley catheter with urimeter should be placed to accurately monitor urine output.

With the exception of escharotomies, open chest wounds, and actively bleeding wounds, management during transport consists of simply covering wounds with a topical antimicrobial agent or a biological dressing. Wet dressings are contraindicated during transport because of the decreased thermoregulatory capacity of patients sustaining large burns and the possibility of hypothermia. To combat the problem of gastric ileus, an NG tube should be inserted in all burn patients to decompress the stomach. Hypothermia can be avoided or minimized by the use of heated blankets and/or mylar space blankets. The patient's rectal temperature must be kept between 37.5˚ and 39˚ C.

Summary

Pediatric burn injuries present a major challenge to the health care team, but an orderly, systematic approach can simplify the initial stabilization and management. A clear understanding of the pathophysiology of burn injuries is essential to providing quality burn care in the pre-hospital setting and at the referring hospital. Successful transport of burn victims, whether in the pre-hospital phase or during interhospital transfer, requires careful attention to treatment priorities, protocols, and details.

International air transport case report

On 10-27-97 we received a call from the new Shrine Temple in Lima, Peru regarding a burned child. The patient was a two-year-old male with an approximate 98% total body surface burn (TBSB) who was intubated and required ventilatory support. The accident had occurred 24 hours earlier when a shack the patient was living in caught fire. The patient's mother and two siblings died in the fire. The Shriner was told that we would accept the patient but that the primary treating physician must contact us.

The patient was transferred from the scene of the accident to the nearest hospital, approximately two hours away, by a relative. Upon arrival at the referring hospital the patient's B/P was 60/40, his HR 210, and his RR 60 and labored with a hoarse high-pitched cry. The patient was intubated and placed on a ventilator, and an IV cutdown started. IV fluids were given at a rate of 250 ml/hr. The burns were initially washed down and peripheral pulses were found to be present. The patient's wounds were dressed with a topical anitmicrobial cream. No urine output had been reported since the accident. A call was then placed to the Shriners Hospital for Children Burn Center regarding possible transfer to our facility.

A physician-to-physician contact was made and an initial treatment plan discussed. While the referring physician was stabilizing the patient, the social service director was making arrangements for visas for the patient and grandmother. It took an additional 24 hours to get the visas and to get the paperwork in order for the transport to occur. During this time our physicians were in constant communication with the referring physician regarding treatment plans and options.

On 10-28-97 a transport team consisting of a surgeon, nurse, and respiratory therapist was sent to Lima to evaluate the patient for transfer back to our burn hospital. Upon arrival at the referring hospital the team found that the patient's vital signs were now stable. However, the urine output was minimum. The transport team conducted a head-to-toe evaluation of the patient. The team decided to start another IV and insert a new NG tube and Foley catheter prior to transfer. The patient was placed on a TX-P transport ventilator and ABGs were sent to ensure adequate oxygenation/ventilation. The ET tube was evaluated for proper positioning and resecured according to protocol. Burn wounds were assessed and peripheral pulses verified. The patient was hooked up to our monitors and wrapped in a mylar blanket for temperature control. He was then prepared for transport

The patient was transported via local ambulance to the airport where

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e was loaded into the aircraft. quipment was stored for easy ccess. During the eight-hour transort back to Galveston, the O2 satuations and ETCO2 remained stable, nd the patient started making adeuate urine output.

Upon arrival at Shriners in alveston, the patient was immediately evaluated by the attending physician and taken to the operating room for massive surgical excision to remove the dead burned tissue, which had now been present for greater than 72 hours. During the operation a bronchoscopy revealed that the patient had an inhalation injury and would need to be on the high frequency VDR ventilator. The patient's post-op course was uneventful, and he was weaned from the ventilator in two days. The patient required four more skin grafting procedures during his hospital stay and was discharged 55 days after his major burn injury.

This case illustrates how teamwork, protocols, and constant communication can affect the outcome in massively burned children. ■

CAMTS Accredited Transport Services

he following list contains all of the programs that were CAMTS accredited as of 4/1/98.
= Reaccredited/RW= Rotorwing/FW= Fixed Wing/G= Ground Critical Care

eroCare — ubbock, TX	RW/FW
Air 1 — yler, TX	RW
Air Evac Services, Inc. — hoenix, AZ	RW/FW
ir Med Team — Iodesto, CA	RW
irMed — alt Lake City, UT	
IR TREK — unta Gorda, FL	FW
AirEvac for Tulsa — Tulsa, OK	RW/G
irLife of Greeley — reeley, CO	RW
irlift Northwest — eattle, WA	RW/FW
llegheny Life Flight — ittsburgh, PA	RW/FW
ngel Flight — ittle Rock, AR	RW
+ Butterworth AeroMed — rand Rapids, MI	RW
CareFlight — ayton, OH	RW
AREFLIGHT — exington, KY	RW
*CareFlite Dallas — Dallas, TX	RW/FW
Conemaugh Med Star — Johnstown, PA	RW
Critical Air Medicine — San Diego, CA	RW/FW
Eagle Rescue of Arizona — Phoenix, AZ	RW
*EastCare — Greenville, NC	RW/G
Flight Care — Saginaw, MI	
*Flight for Life — Denver, CO	RW/FW
Flight For Life — Milwaukee, WI	RW
Gallup Med Flight — Gallup, NM	FW
Guardian Air Transport — Flagstaff, AZ	FW
HealthNet — State of West Virginia	
* INOVA AIRCARE — Falls Church, VA	RW
*INTENSIVE AIR — Sioux Falls, SD	RW/FW
Life Air Rescue — Shreveport, LA	RW
LifeFlight IHC — Salt Lake City, UT	RW/FW/G
*LifeFlight MeritCare— Fargo, ND	RW/FW
Life Flight — Toledo, OH	
LIFEFLITE Medical Air Transport — Mesa, AZ	FW
*LifeGuard— Albuquerque, NM	RW/FW
Life Watch— Wichita, KS	
Loyola LIFESTAR— Maywood, CO	RW
+Mayo One — Rochester, MN	RW/FW
Med Arizona, Inc. — Show Low, AZ	FW
+Med Center Air — Charlotte, NC	RW/FW/G
Med Flight Air — Albuquerque, NM	FW
MedJET International— Birmingham, AL	FW
*Medi-Flight — Modesto, CA	RW
Medical Express International, Inc. — Show Low, AZ	FW

Mercy Air Services, Inc. —
Fontana, CA RW

* +Metro Life Flight —
Cleveland, OH RW/FW/G

MidWest MEDFLIGHT —
Ypsilanti, MI RW

Native American Air Ambulance, Inc.
Mesa, AZ RW/FW

North Flight, Inc. —
Traverse City, MI RW/FW

NorthWest MedStar —
Spokane, WA RW/FW

*Presbyterian Air —
Albuquerque, NM FW

REACH Mediplane —
Santa Rosa, CA RW/FW

*REACT —
Rockford, IL RW/G

San Juan Air Care —
Farmington, NM RW/FW

Shriners Burns Institute
Transport Team —
Cincinnati, OH FW

St. Joseph's Health Systems —
Tampa, FL RW/FW

St. Mary's Air Life—
Grand Junction, CO RW/FW

STARS —
Edmonton, Alberta, Canada RW

STAT MedEvac —
Pittsburgh, PA RW/FW

Survival Flight —
Ann Arbor, MI RW/FW/G

Texas AirLife —
San Antonio, TX RW

Topeka Air Ambulance, Inc. —
Topeka, KS RW

*UCDMC Life Flight —
Sacramento, CA RW

*UMC Air Care —
Tucson, AZ RW/FW

University Air Care —
Cincinnati, OH RW

University MedEvac —
Allentown, PA RW

Washington MedSTAR —
Washington DC RW

West Michigan AirCare —
Kalamazoo, MI RW/FW/G

+ = "**Commendation"**

The following position is now available –

Internet Coordinator: Responsible for monitoring section and AARC web site and bulletin boards, alerting section chair of postings that require an answer, and posting answers as appropriate. Would monitor other web sites that may be of interest to the section membership or benefit from an AARC link. Develop new ideas for the section web site. For informatio or to apply contact Kathleen Adam chair, Transport Section, AARC a (909) 824-0800 ext. 43809 or e-mai kadams@ccmail.llumc.edu ■

AARC to offer assessment course

Due to overwhelming requests, the patient assessment course for respiratory therapists will be offered again in July. Space is at a premium and preregistration is required. Successful completion of the course will earn participants 16 hours of CRCE credit and a certificate of course completion. Each attendee will be given a pocket guide to physical assessment.

Advance registration is required. AARC members may take the course for $250. The nonmember fee is $325. The course will be held in:

Phoenix, AZ, July 18-20

Location: The Pointe Hilton Resort at Squaw Peak, 7677 North 16th Street, Phoenix, AZ 85020-9832, (602) 997-2626

Room Rates: $89 single or double + 10.35% tax

For Reservations Call: (800) 876-4683 or (602) 997-2626 and identify yourself as an attendee at the July 18-20, 1999, AARC Meeting.

Room Reservations Deadline: Monday, June 21, 1999

Course Registration Deadline: Thursday, July 1, 1999

Enrollment Limit: 200 attendees

All activities will be conducted at the hotel. Check in time is from noon until 1 p.m. on the first day. Following the last class, participants will take a 100-item test developed by the NBRC, which should take about one and a half hours to complete. Attendees should finish the test by 1 p.m. on the last day of the course. Tests will be graded on-site for those wishing to obtain thei scores immediately.

After the course, the graduate wi be able to:

- Function as a member of an inte disciplinary care team.
- Determine the patient's physica condition, assess the patient needs, monitor and evaluate se vices and outcomes, and docume services and activities.
- Look at the whole person, inclu ing family life, living condition work situation, and leisure activ ties, in relation to the disease stat of the patient.

To register for this excellent co tinuing education opportunity, co tact the AARC at (972) 243-2272.

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Transport Section Classifieds

FYI . . .

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1999 Summer Forum

The AARC will hold its annual Summer Forum July 16-18 in Phoenix, AZ. This outstanding meeting promises to provide a wealth of information for practitioners holding positions in management and education and should be of interest to anyone wanting up-to-the-minute information about the profession and where it is headed as we prepare to enter the new millennium.

For more information about the Forum and how you can attend this important meeting, see your April issue of *AARC Times* or visit the AARC's web site at www.aarc.org.

Chronic diseases put children's hospitals at a financial disadvantage

When treating children with common pediatric conditions, children's hospitals are at a financial disadvantage compared to general hospitals, say researchers from the Children's Hospital of Philadelphia. They found that of all children treated for a common acute condition such as pneumonia at both children's hospitals and general hospitals, a higher percentage of children seen at children's hospitals also had a chronic disease such as diabetes or cerebral palsy. But while hospital costs were greater for children with chronic illnesses, medical insurance reimbursements tied to the acute condition often did not reflect this disparity.

"If insurance contracts fail to account for chronic disease, market forces will eventually change the mission of children's hospitals, either by reducing access for chronically ill children or lowering the hospitals' quality of care," says the study's lead author, Jeffrey H. Silber, MD, PhD.

In analyzing 30,000 admissions of children to 163 hospitals during the 1990s, Silber and his team looked at nine common acute conditions, including gastroenteritis, pneumonia, appendicitis, and croup. They then measured the impact of one or more chronic diseases, such as diabetes, sickle cell anemia, cerebral palsy, and asthma, on the care of these acute conditions. Children with at least one chronic disease had longer lengths of stay (mean 3.87 days versus 3.13 days) and higher total hospital charges (mean $3,663 versus $2,614) than children without a chronic illness.

The cost difference, they say, is having a significant financial impact on children's hospitals, which treat approximately 75 percent of children with chronic illnesses, a percentage that is likely to remain high because of the concentration of pediatric specialists at children's hospitals.

When market forces require hospitals to compete with each other in negotiating contracts with medical insurance companies, children's hospitals may fall under pressure to offer the same price as general hospitals for services related to common childhood conditions. If this occurs, children's hospitals will lose money for every child treated for a common condition who is also chronically ill. "Children's hospitals will face serious financial difficulties," says Silber, "unless they can obtain contracts from insurers that reflect the increased resources needed to treat patients with chronic conditions." (Archives of Pediatric and Adolescent Medicine, 2/99)

Kid-friendly pediatric emergency facility

A trip to the emergency room can be a frightening experience for a child. At Cedars-Sinai Medical Center in Los Angeles, however, a major renovation effort and a progressive approach to pediatric emergency care has helped to ease those fears for the nearly 9,000 children treated in the department each year.

The difference is apparent as soon as you enter the pediatric waiting room, where all but the most critically ill or injured youngsters (and their families) wait their turns for care. Enlivened by storybook murals, the room is filled with child-friendly furnishings. Young patients can join the characters of "Alice in Wonderland" for "tea" at a hand-painted table and chairs. A television fitted in a "castle tower" provides distraction as visitors settle into heart-backed chairs and other comfortable seating. Thanks to a special cellular telephone system for physicians, there are no disturbing overhead "pages" or announcements.

The pediatric treatment area, which is situated opposite the emergency department's acute care center in the "quiet" side of the facility, features specially designed treatment rooms for children, as well as a designated trauma bay for youngsters requiring more critical care. Instead of the curtained cubicles typical of most emergency rooms, each patient room is private and has sound-proof walls, a TV, telephone, and accommodations for a visitor. (Cedars-Sinai Medical Center)

Laughter is the best medicine

Need a little comic relief to help you through your day? The following web sites were recently recommended in *Hospitals & Health Networks:*

MC MD: Adventures in Managed Care
members.aol.com/mcmdcomic/index.htm

Nursing/Medical Humor
wwnurse.com/nursing/humor/

Health Care Humor
webcom.com/mdtaxes/humor.html

(Hospitals & Health Networks, 2/99)

Cigarette smoking predicts risky behaviors

Researchers from Wake Forest University Baptist Medical Center have found that the age at which a child begins to smoke cigarettes is the key to his proclivity for risky behaviors in the future. Published in the March issue of the *Archives of Pediatrics and Adolescent Medicine*, the study indicates that middle school aged adolescents who begin to smoke cigarettes at age 11 or younger engage in twice the number of risky behaviors – such as riding in car with a drinking driver, carrying a knife or gun to school, fighting, inhalant use, having a suicide plan, and using other substances such as marijuana and cocaine – as those who begin smoking later in adolescence.

The study sampled over 2,000 students from 53 randomly selected North Carolina middle schools. Students were asked to rate their level of participation in 16 different behaviors according to a Health Risk Behavior Scale. ■