



Notes from the Editor

by Steven E. Sittig, RRT

As I sit down to write this edition of my "Notes from the Editor," it is nearly the end of March. However, by the time you read this column we will be well into the summer months, and the Critical Care Medical Transport Conference, scheduled for mid-April, will have already taken place. From what I understand, RTs will once again be well represented at this important meeting, which is open to every discipline involved in transport. I hope those of you who were unable to attend will try to fit it into your busy schedule for next year. I will be sure to post the details as soon as they are made available, and I also plan to present some highlights of this year's conference in the next edition of the Bulletin.

Next, I am sorry to report that Jerry Focht has stepped down as our section chair, due to ever-increasing demands imposed by his position as chief flight therapist at Northwest MedStar. We all owe Jerry a great deal of respect and thanks for all the work he has done in promoting the RT in the transport arena. Jerry assures me he will remain active in the promotion of RTs in the transport role on a national level, and I know we will all continue to benefit from his dedication and expertise.

At the time of this writing, it is unclear what the AARC plans to do in terms of filling this position. Hopefully, I can bring you more information in the next issue of the Bulletin. In the meantime, we all need to remember how important it is for us, as section members, to recruit additional members for our section and the AARC in general. Continued promotion and support of our specialty area needs to come from every section member, from the local level all the way up to the national level. The best way for us to accomplish our collective goals is to encourage more of our colleagues to join with us in the Transport Section.

Until next time, have a great summer, and may all of your transports end safely for both you and your patients. ♦

Lessons Learned: Decreasing Specialty Team Response Time

by Steven E. Sittig, RRT

Many transport programs do not have the luxury of having specialty teams dedicated to areas such as pediatric or neonatal transports. Such is the case here at the Mayo Eugenio Litta Children's Hospital in Rochester, MN. However, every year the number of requests we receive for specialty transports increases, and at times we have run into situations where the adult rotor team was dispatched as if they were in a dedicated specialty role and advertised five-minute response times. Since the literature shows that improved care and outcomes are obtained by the use of specialty teams, we decided to look at how we could improve our response time within the constraints of being ICU-based rather than dedicated.

Our pediatric team is staffed with specially trained pediatric ICU nurses and respiratory therapists. We both receive yearly training in such procedures as chest tubes, femoral central lines and IVs, among other skills, and the RTs do all the intubations. Since the team is ICU-based, we had to drop our pagers off with our colleagues before responding to the transport request. So, try as we might, we generally exceeded our allotted response time by 5-7 minutes.

While not a huge overrun, this became a constant subject of debate in monthly program flight meetings. To address the issue, we formed a transport leadership committee comprised of the transport team medical director, pediatric transport nurse and pediatric transport RT. After looking at how the system was set up, several key areas were marked for improvement.

First, a formalized paging system was set up with flight dispatch, which tells the communication people who to page and when. We were then given alpha display pagers that would provide us with enough information about the transport to respond. The NICU and PICU are staffed by two transport RTs, and in order to facilitate communication between them, the system was set up so that both pagers would display the transport request. This removed the need for the RT responding to the transport to phone or page his coworker to pick up the pagers and call in our call person to back fill the unit. This did help improve response times, but there were still instances of response time overrun.

At this point, one of my transport colleagues, Ed Schneider, took on the task of working with communications to look at how the pages for a transport were sent out. He found that the adult flight crew and pilot sometimes received the page 5-7 minutes before we did. This occurred because they were at the top of the paging list. The peds team was listed much farther down the list - once the page was sent out, the paging system would go down the list and activate the appropriate pages in sequential order. So, it was no wonder they were always "waiting for the peds team." The system was revised to have the peds team placed in the same paging group as the pilot.

We also addressed the time it took for the team to change out of their scrubs into their Nomex flight suits. Our medical director, Dr. Greg Shears, then proposed that the on duty personnel wear their flight suits. This would potentially cut 5-6 minutes off our response time. All other needed equipment was stored upstairs in the flight hanger. The thought of wearing our flight suits for 12 hours a day (versus our nice, comfortable scrubs) was not an immediate hit with most of the team. But in order to cut down response times we agreed to give it a try.

We implemented the changes and were very pleased with the results. Our response time is now comparable to that of the dedicated adult flight team, and there are even times when we are up in the hanger before the helicopter is out on the pad ready for lift off! This has made the powers-that-be in the flight program realize that it is possible for us to respond in

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Did you know it takes more than 500 active volunteers to successfully run the vast and varied programs and services offered by the AARC every year? Who should take on these responsibilities? How about you?

President-elect David Shelley, PhD, RRT, is currently seeking volunteers to serve on various AARC committees and in numerous other capacities during his presidency in 2003. If you'd like to sign up – or just find out more about how you can become more involved in your professional association – check out the following link on AARC Online: aacrc.org/headlines/volunteer.

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CAMTS Report: The New Standards are Here!

by Tom Cahill RCP, RRT, EMT-P

The new CAMTS standards have been revised and approved. Programs seeking accreditation or re-accreditation after July 1 will be reviewed based on these indicators. The new book is blue and has some additional features to make it more user friendly, including an index, competency matrix and notes on what service a standard applies to (i.e., ground, fixed wing, or rotor). Respiratory therapists are referred to as “respiratory care practitioners” (RCP) in this edition and our scope of practice and the leadership roles many of us take in transport are better recognized.

Taking the ICU out of the hospital and placing it on wheels should not change the quality of care; many teams realize this and that is why opportunities are opening up for us in critical care transport. Did you know that the AAMS says there over 50 teams that use RCPs as primary team members, with several of those doing scene responses? Most critical care transport teams utilize RCPs at least as an add on or specialty team member for complex ventilation, pediatrics, neonates, L&D or nitric oxide.

To date, there are 92 services throughout the USA and Canada accredited by CAMTS. To see a complete list, access the web site at www.camts.com. The web site also has contact information, applications for accreditation and FAQ for anyone interested in applying for accreditation. You can also contact me at the addresses/number listed on this page. ♦

A Couple of Tricks of the Trade

by Steven E. Sittig, RRT

Many times in the transport environment we learn little tricks of the trade that help make a job or task easier. I was lucky enough to hear a lecture here at Mayo from a nationally recognized expert in difficult airways who clued me into a couple of new ones. While we are not anesthesiologists, there are certain tricks of their trade we can pick up and use.

During the hour-long presentation a simple everyday trick was mentioned for cases where vocal cords present anteriorly. Most RTs I know - and many physicians as well - try to bend the tube into a mild “V” shape to help guide the tube anterior through the cords. Until I heard this lecture, I usually prepared my endotracheal tube with a stylet and shaped it into the normal curvature of the oropharynx. This expert suggested shaping the ETT like a hockey stick. The bulk of the ETT is straight and the very end is bent upward.

I spoke with the physician after his presentation and he said this tip was good for neonates thru adults. Having cared for children who presented with anterior cords, or handled cases in which it was not possible to quickly obtain a picture perfect view of the cords, I was eager to try this suggested ETT preparation.

This curvature of the ETT gives the added benefit of allowing more consistent visualization of the vocal cords as the ETT passes thru them. Anyone who intubates with an ETT with normal curvature knows there is a moment when you momentarily lose visualization of the cords as the ETT follows the natural curve upwards. With the “hockey stick” method, as you guide the ETT up thru the vocal cords the ETT actually drops down in your field of view, allowing constant visualization as you pass the ETT thru the cords. Next time you get a chance, try this on an intubation mannequin or with an intubation.

Another trick I would like to pass on involves intubating neonates. It always seems that as you pass the ETT thru the vocal cords, it usually goes a little deeper that you would expect. I refer to this as an adrenalin reaction - your adrenalin level is so high that many times you give the ETT a slight push forward as you remove your laryngoscope. Then you bend over and try to determine the numbers on the ETT. Of course, it always seems like the numbers are on the other side of the ETT, so you ask a helper to look for the proper number as you cling tightly to the tube.

You can make this easier by following these simple steps: first, obtain the patient's weight or get a good estimate, then take the ETT and mark the proper estimated securing point with a marking felt pen. (I find black works well.) With the felt mark on the ETT you can easily see where you are and adjust according to your assessment of breath sounds and the patient. Also, this mark makes it easy to assess if the ETT may have moved during transport - especially during a rotor wing flight where normal auscultation is not possible. ♦

Case Study: One-Year-Old With Decreased Oral Intake and Fever

by Steven E. Sittig, RRT

You are asked to transport a one-year-old child with a chief complaint of fever, decreased oral intake and increasing fussiness. You arrive and find the following: HR 128, RR 30 with mild suprasternal retractions, estimated weight 8.5 kg, BP85/45, SaO₂ on RA92%. Pulses are slightly diminished, and the patient appears pale with cool extremities. His temperature is 38.5, and he has mild desquamation of his fingertip and chapped and bleeding lips. Lab results obtained at the local hospital are as follows: WBC 26,000, Hb 8.4, Hct 25, ESR 55. Past medical history is unremarkable.

You place an IV and begin infusing at maintenance. You also place the patient on 2 L Nasal cannula. An ABG is drawn and is within acceptable limits. Would you consider this patient to be potentially in a state of shock and possibly septic? What clues give you this suspicion?

The fact that he appears cool and pale should make you think of shock, and the elevation of the WBC and ESR is suggestive of sepsis. You contact medical control and they ask you to begin antibiotics. You secure the patient to the stretcher and load him into the helicopter for a 30 minute flight.

You arrive at your hospital and take the child directly to the PICU. As you are documenting the transport on the record you are called to the patient's room. His saturations are now low 80s and his HR is now 40 without any respiratory effort. The patient is in full respiratory arrest. You begin bag/mask ventilation, and CPR is started. You are told by the consultant to intubate the child.

What is an appropriate ETT size, and what is the estimated securing point? In all the confusion the IV you placed earlier is now lost. What pharmacologic agent is needed and where should it be administered, since you no longer have IV access? What dosage?

The rule of thumb for estimating ETT size is 16 plus the age divided by 4; therefore, $16 + 1 = 17/4 = 4.0$ or possibly 4.5. Securing depth is roughly three times the appropriate ETT size. So in placing a 4.0 ETT, you may start around 12 cm at the lip. Final placement would depend on clinical exam (BBS, + ETCO₂, good chest excursion with bag ventilation). You need to give epinephrine for the HR; since the IV is lost you can give it down the ETT, remembering that the concentration is different for ETT administration. The dosage is 0.1 mg/kg. You give the dose and there is no response. So you repeat it, again remembering to use a saline flush to help distribute the drug in the pulmonary tree. An I/O is placed and a fluid bolus Normal Saline is ordered.

What is the bolus rate and how much should you expect to be infused? You would expect to infuse 20 ml/kg, and the patient's weight is estimated at 8.5 kg. Therefore, a bolus of 170 ml would be appropriate. You work through the resuscitation and eventually end up giving 8 doses of epinephrine, 10 doses of atropine, repeated fluid boluses of NS, administration of albumin, PRBCs and sodium bicarbonate. The HR returns with a systolic BP of 74; HR is now 150 with poor perfusion and extremely diminished pulses. Thirty minutes later the patient becomes bradycardic and then asystolic. CPR is again implemented, and after 40 minutes the child is pronounced.

Do you suspect that death was caused by overwhelming sepsis? A postmortem finds that the brain exhibited diffuse cerebral edema and cerebellar arachnoid hemorrhages most likely due to cerebral ischemia. The heart reveals mild chamber dilatation, mitral and aortic valvulitis, focal myocarditis and right coronary arteritis. Microscopic examination of the heart shows inflammatory infiltrates of the right coronary artery.

In the next edition of the Bulletin we will look at the cause of death in this case study and note which clinical presentations would have led you to the cause of death. If you think you know the cause, email or call me (address and number on page 2) and I'll add your comments to the discussion. ♦

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**LESSONS LEARNED: DECREASING
SPECIALTY TEAM RESPONSE TIME**

a timely manner to flight requests and not affect the program's overall response time.

As RTs we have also gained an unexpected bonus from the new dress code. When the change first took place, we regularly faced utter amazement from general floor nurses and others as we went about our duties dressed in our flight suits. Most thought we only delivered equipment and did CPT and were surprised to learn we were on the helicopter. Now when we walk down the halls, we are greeted by everyone from housekeepers to physicians - people who never before spoke to us as we passed in the halls.

While we have been transporting patients for many years, clearly, many in our institution never recognized our role in transport. So, in addition to decreasing our response times to those of the adult rotor team, these changes have brought us institution-wide recognition of our advanced role. Hopefully, these lessons learned will be of help to other programs across the country as well. ♦

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