Notes from the Editor

by Fred Hill, MA, RRT

Knowledge is not simply another commodity. On the contrary.
Knowledge is never used up.
It increases by diffusion and grows by dispersion.
— Daniel J. Boorstin

Help Wanted: This is your newsletter. Please consider making contributions, whether it is a letter-to-the-editor, an original article, or just an idea that you would like to share. This publication goes to every member of the Education Section. It is a great medium for sharing viewpoints and experiences. Sue Pilbeam and I are willing contributors, but we would love to publish articles from other sources, i.e. from you!

Notes from the Chair

by Susan P. Pilbeam, MS, RRT

Part of the section chair’s responsibility is to advise the membership through publication in the Bulletin of the most recently appointed chairs of the various section committees. David Chang, our immediate past chair, through discussion with other members, selected the following individuals for chair positions:

Publications Committee: Fred Hill, University of South Alabama
Practitioner of the Year Committee: Terry LeGrand, University of Texas Health Science Center at San Antonio
Abstract and Poster Committee: Gudi Pryor, Washburn University of Topeka
Program Planning Committee: Bethanne Tinkler, Georgia State University
Long Range Planning Committee: Gina Buldra, New Mexico University
Education Section Liaison to the AARC Board of Directors: David Shelledy, University of Texas Health Science Center at San Antonio
Education Section Liaison to the AARC Program Committee: Bill Galvin, Gwyned-Mercy College

Since 2000 was the first year in over a decade that the section chair was an elected position (when the sections were first formed, the chairs were elected; from the mid-1980s until last year, they were appointed by the AARC president), I did not have the opportunity to serve as chair-elect for one year while the chair mentored me for this position. For that reason, I’m learning as I go. In the event that I commit some errors in protocol or function, I’m going to apologize in advance. I’m sure it will happen at least once! Fortunately, the AARC Executive Office is very adept at nudging newcomers along to help us get our bearings.

The Education Section is planning, as usual, to have a business meeting at the Summer Forum. The date and time will be available when the meeting schedule is published. We will also post this information in the next issue of the Bulletin. I hope to see many of you there. In the meantime, please feel free to write me either by email or regular mail about any concerns or topics of interest that you feel are important to the section and need to be addressed at this meeting. My contact information appears on page 2 of this and every issue.
What Happened to Those PBL Cases?

by Tim Op’t Holt, EdD, RRT

At the 2000 Summer Forum in Vail, we had two excellent sessions on problem-based learning (PBL). The first was the presentation/practicum on the tutorial method given by Shelley Mishoe and Richard Gentile in which participants learned the basics of being a facilitator. Then, in the afternoon, we looked at the structure of the progressive disclosure case. The purpose of the session was to introduce attendees to the case format and how to take a case and convert it into a case suitable for use in PBL tutorial sessions. I invited the participants to share their cases and to send them to me for comment and revision. Then we would have a bank of cases to share among ourselves.

But, to date, I have yet to receive any cases! What happened? Let me speculate:

• The format handout got lost before you made it to the plane in Denver.
• It’s on the bottom of the pile on your desk.
• You got a good start, then school started and it lost its priority.
• PBL sounds like a bad idea, so you are not interested.
• You looked at it again, but just haven’t had time to fiddle with it.
• You lost my address.
• I didn’t fuss at you earlier. Well, regardless of what happened, I’d still like to work with any educator who is interested. Please, let me hear from you, even if you only started your case and have yet to finish it. We educators need to have a good bank of problems to share. I appreciate those of you who took the time to participate in the workshops. Let’s finish the job!

You can reach me at: Tim Op’t Holt, EdD, RRT, Department of Cardiorespiratory Care, College of Allied Health Professions, University of South Alabama, 1504 Springhill Avenue, Room 2545, Mobile, AL 36604, (334) 434-3405, email: topholt@jaguar1.usouthal.edu.

Comparison of Respiratory Admission Criteria

by Stephen Wehrman, RRT, Kapiolani Community College, Health Sciences, Honolulu HI

Starting with academic year 1997-98, the respiratory care program at Kapiolani Community College initiated a new selection process for admission. Grades in prerequisite courses and interview scores were the primary criteria. In this study, the correlation of each of these two criteria with performance on a standardized national practice board exam was calculated. The exam was given at the mid-point of the program. The data were based on three consecutive classes and included 37 students.

The results show that there is a moderate, although statistically significant, correlation between the composite admission score and exam performance (Pearson’s r = 0.5606, p < 0.001). There was a strong and statistically significant correlation between prerequisite grades and exam performance (r = 0.7355, p < 0.001). There was a very small negative correlation between interview scores and exam performance (r = -0.0493, p = 0.7720).

The results suggest that the use of prior academic performance is an appropriate method to select students. It also appears that interview results do not correlate with exam performance. Further studies will be conducted to determine whether the various admission criteria correlate with behavioral outcomes such as on-the-job performance.

Experiences with Academic Dishonesty: Part Two

by Fred Hill, MA, RRT

Editor’s Note: The following account is based on recollections from my first year as a graduate student more than 25 years ago. The names of individuals have been changed. The dialogue is reconstructed from memory and captures the spirit of what was said, but not the precise wording. Other than that, the events and personalities are as accurate as my memory will allow.

The professor, Dr. Roberts, and five teaching assistants (myself included) were supervising the first mid-term examination for a large undergraduate biology class. More than 150 students were taking this exam in a large auditorium. We had instructed the students to space themselves so that at least one empty seat
“Experiences” continued from page 2

was between each student. Once the students were assembled in this manner, we distributed the exams.

Shortly after the exam got underway, a student named Ralph caught my attention. He was leaning across the seat to his left and peering directly at the test paper of a female student. I pointed Ralph out to Melvin (one of the other teaching assistants). Melvin and I chuckled quietly because Ralph was leaning so far over that it looked like he might fall out of his seat. He was making no effort to conceal what he was doing.

Melvin and I walked over to Dr. Roberts and pointed toward Ralph. Dr. Roberts said, “Tell him to keep his eyes on his own paper.” Melvin went down the aisle near Ralph and got his attention and issued a warning.

Melvin returned to my side and turned around to look at Ralph. To our amazement, Ralph was once again leaning outrageously toward the paper of the other student. It was as if no warning had been issued. By this time, all of the teaching assistants were looking at Ralph. One of the other teaching assistants approached Ralph and re-issued the warning.

In the meantime, another student, Allen, had caught my attention. Allen had huge eyes and they were staring at a student paper to his left. Momentarily, he looked forward and he realized that I was looking directly at him. I stared at him sternly and signaled to him to keep his eyes on his own paper. I continued to watch Allen, and in several minutes, he stole another furtive glimpse at the student’s paper. Then he glanced towards me and saw I was still watching. His eyes quickly reverted to his own test paper.

In the meantime, Ralph was once again craning his neck to view the paper next to him. Melvin informed Dr. Roberts that Ralph had been warned twice, but continued to overtly copy from the other student’s test. “Okay, then!” said Dr. Roberts, “Go down and collect his test paper and bring it to me.” Melvin went down to where Ralph was sitting and demanded the paper. I watched Ralph intently as Melvin returned with the test paper. Ralph’s face had an agonized expression. He clasped his head with both hands. He gyrated forward and back in his seat with his eyes scrunched shut. He looked as if he might scream or burst into tears, but he remained quietly rocking back and forth in agony. Finally, he folded his arms on his desk, buried his face in his arms, and became motionless.

Dr. Roberts instructed Melvin to write a description of the events on the test paper. Then he asked Melvin to sign it. Then he asked each of the teaching assistants to review what Melvin had transcribed and sign it as witnesses.

In the meantime, I continued my surveillance of the other students, especially Allen. From time to time, Allen would begin to glance to his left, then look up at me, catch my eyes, and quickly revert to staring down at his own paper. It was as if the practice of cheating was so ingrained in him that he could not curb his habit of looking to another student’s paper. Allen’s furtive glances became infrequent and were so quick that there was no time to point them out to the other teaching assistants. I also felt that he was not getting much opportunity to cheat under my relentless surveillance. I made a mental note to discuss this with him at a later time, perhaps after one of the lab sessions.

After the test was over and all of the test papers had been collected, another male student approached me. “I wanted to let you know how much I admired what you and Dr. Roberts and the other teaching assistants did,” he said. “I have been in many classes in this university and the cheating that you witnessed today is commonplace. Most professors see it, just as you did, but they choose to ignore it. This is frustrating to someone like myself who studies hard and makes his grades by honest effort. Anyway, I wanted to let you know that I appreciate what was done.”

After the test, Ralph approached Dr. Roberts and asked to speak to him privately. Dr. Roberts and Ralph walked away from us and they had a brief conversation and then Ralph left.

Dr. Roberts walked over to us. He explained that Ralph wanted to know what was going to happen to him and had expressed a desire to continue in the course. Dr. Roberts had scheduled a meeting with Ralph in his office for later that day. Dr. Roberts asked us what Ralph’s fate should be.

The university had a policy that addressed cheating, and possible penalties included dismissal from the course, dismissal from a program of study, or even dismissal from the university. The penalty was at the discretion of the professor, but he was seeking our input.

We were a harsh tribunal. Some of us advocated dismissal from the university. Some of us felt he should at least be dismissed from the course. We expressed our outrage at Ralph’s blatant attitude and disregard for our warnings. We were contemptuous of him and very unforgiving.

Dr. Roberts listened quietly to us and then said, “No! I will assign him a zero for this exam. I will provide him the options of continuing in the course or withdrawing.”

We were surprised by Dr. Roberts’ leniency. There would be two more mid-term exams, a final exam, and a lab grade. Even with a zero on this exam, he could pass the course, even possibly make a grade of “B.” On the other hand, this was a significant setback. We doubted that Ralph would continue in the course given the tremendous effort that would be necessary to make a passing grade. We felt sure he would withdraw from the course. Later, Dr. Roberts informed us that Ralph would continue in the course.

A week later, I was grading some quizzes from one of my lab sections. I noted some striking similarities in the answers on two of the papers. One quiz had been submitted by Allen, the other by a young man named Brian. I suspected that Allen had copied from Brian’s paper.

At the beginning of the next lab session, I returned all of the quizzes except the two in question. Brian asked where his paper was. I said that I was holding two test papers and that I wanted to discuss them after class. Brian looked puzzled for a moment and then he glared at Allen. “I think I understand,” he said. “Good!” I said. “Please see me after class.”

Later, after the students were engaged in laboratory activities, Allen approached me and asked if he could speak with me in private. I led Allen into an adjoining room. Allen confessed that he had copied from
“Experiences” continued from page 3

Brian’s paper. He cleared Brian of any complicity. We discussed his actions during the first mid-term examination. Allen stated that he had gotten off to a bad start for this particular quarter and that he had already decided to withdraw from school. I shared my feelings about cheating, but told Allen that since he had come clean with me, I would take no action against him provided that he withdrew from the class.

Later, I returned the quiz to Brian and thanked him for his patience. I told him I appreciated the good work he was doing in the class.

It was interesting to watch Ralph for the remainder of the quarter. He was very conscientious about keeping his eyes on his own paper during subsequent exams. Of course, we were watching him relentlessly. During the second mid-term exam Ralph glanced up from his test paper and saw us all staring at him. He gave us a confident smile and held up his fingers with the “OK” sign. Then, he went back to work on his test paper.

Ralph became very friendly with us. He frequently sought us out with sophisticated inquiries regarding his studies. The guy we once regarded as a cheating weasel had been transformed into a hard-working scholar.

We intently monitored Ralph’s progress. His exam was always one of the first that we would grade. His results were outstanding. His laboratory work was going very well. We realized he would likely make a “B.” All of his grades since that first exam had been at the “A” level. However, the zero grade would prevent him from making an overall grade of “A.”

When Ralph turned in his final exam, he walked over to us. We were his buddies now. He was smiling but his eyes were moist. “You know, I think I really did a good job on this exam. You guys will ultimately decide that.” He paused and then went on. “When you tagged me for cheating, I felt like the world was going to end. I never felt so bad in my whole life. I want you to know that you did the right thing. I had been getting by, doing marginal work and cheating for my whole college career. After I met with Dr. Roberts, I had to re-examine what I had been doing. I resolved to change my entire approach to college life. I never believed in my own abilities. Now I know I can be a good student. I can rely on my own ability to succeed. I can’t tell you how much better I feel about myself. I owe it all to you and Dr. Roberts. Thank you.”

As Ralph left us, I felt that I owed him and Dr. Roberts a great debt. They had enlightened me about second chances, compassion, and forgiveness. Ralph had demonstrated the ability of the human spirit to triumph in the face of adversity. Ralph had erred, but triggered by our intervention he found a new way of living — a way of life that was more comfortable for him. Somehow life was more comfortable for me, too.

Early Bird Savings for the 47th International Respiratory Congress

How can you get up to 25 hours of continuing education credit (CRCE) for the lowest possible price? Take advantage of the opportunity for early bird savings by registering now for the AARC’s 2001 International Respiratory Congress, to be held this December 1-4 in San Antonio, TX. Register by April 15 and you will receive $40 off the regular price. So secure your low-cost registration fee by signing up to attend today.

Registration forms are available in AARC Times magazine, online at www.aarc.org, or by calling the AARC office, (972) 243-2272.

Meconium Aspiration Syndrome

by Roxanne Nora

Meconium aspiration syndrome (MAS) is a major cause of respirator-
absence of other signs of asphyxia is not a tell-tale sign of trouble. Prevention is the most important factor in the management of MAS and includes prenatal and postnatal care. Prenatal procedures include constant fetal heart rate monitoring during labor, examination of acid-base equilibrium in the capillary blood from the fetal scalp, and, eventually, amnioinfusion (AI). Amnioinfusion is not a widely accepted method of care.

Postnatal procedures which can be done by a respiratory therapist include obligatory suction of the oropharyngeal cavity and nose before the first breath and selective endotracheal suction only in depressed neonates or neonates born from thick meconium stained amniotic fluid. Conventional therapy of MAS includes monitoring of vital functions, chest physiotherapy, site drainage, airway suction, oxygen supply, respiratory support, antibiotics, sedation, normal fluid balance and calorie intake, and, when indicated, agents stabilizing blood pressure and heart rate. A respiratory therapist has the training to do this conventional therapy of MAS. The respiratory therapist is an essential part of the health care team.

The typical chest x-ray film in severe MAS shows areas of decreased aeration, either focal or generalized. These areas alternate with areas of hyperlucency, resulting in a pattern of irregular densities throughout the lung fields. Consolidation is common, with no increased incidence in any particular lobe. Pleural fluid accumulation and air leaks are commonly seen, especially pneumomediastinum and pneumothorax. The diaphragm may be depressed if hyperinflation is significant, although this is uncommon. The x-ray picture is clearly different from RDS. It is difficult, however, to differentiate from that of pneumonia, which may be important in the infant who develops a superimposed bacterial infection or the infant with intra-partum pneumonia.

Some medical experts believe that the passage of meconium is triggered by fetal stress, such as hypoxia or asphyxia. During anoxia, the fetus first relaxes its anal sphincter and expels meconium into the amniotic fluid. Normally, the fetus takes shallow breaths of amniotic fluid in utero. If anoxia is severe, the fetus will begin to take deep gasps, which delivers the meconium now floating in the amniotic fluid deep into the lungs. Cincinnati researchers concluded that fetal asphyxia may cause the passage of meconium, leading to pulmonary vasoconstriction and decreased pulmonary blood flow. In response to asphyxia and acidosis, the fetus may make substantial respiratory efforts and aspirate meconium. Self-cleansing of the tracheobronchial tree is diminished due to decreased blood flow, and meconium thus remains in the trachea.

Once the infant is initially stabilized and transported to the intensive care area, the respiratory therapist performs vigorous postural drainage and percussion and frequent suctioning of the airways. Oxygenation therapy may be needed, and in severe MAS, mechanical ventilation is indicated. Assisted ventilation should be avoided if possible because of the high incidence of pneumothorax associated with MAS.

The respiratory therapist can help to relieve the signs or symptoms of three major pulmonary effects of meconium aspiration: airway obstruction, surfactant displacement, and chemical pneumonitis. Complete obstruction of the airways results in atelectasis, which will then lead to death if not handled appropriately. However, it is much more likely for there to be a partial airway obstruction with peripheral air trapping, often leading to air leaks complications. An airway leak can lead to a pneumothorax or pneumomediastinum.

Aspirated meconium exerts what some authors describe as a ball-valve effect. At end-expiration the airway lumen is partially obstructed. Negative intrathoracic pressures open the airway during inspiration and relieve the obstruction. Gas enters and expands the alveoli. During expiration, the now positive intrathoracic pressure narrows and occludes the airways; as a result, gas cannot be expelled. This partial obstruction leads to hyperdistention of the lung parenchyma caused by the gas trapped distal to the inspissated meconium in the airway, causing an increase in resistance during exhalation.

Surfactant displacement from MAS causes a second major pulmonary problem. Several constituents of meconium, especially the free fatty acids such as palmitic, stearic, and oleic, have a higher minimal surface tension than surfactant. These acids strip away surfactant from the alveolar surface, resulting in diffuse atelectasis, hypventilation, and shunting. The free fatty acids have the highest inhibitory activity in vitro and in vivo.

Meconium has its effects on surfactant function, specifically the inactivating and decreasing levels of the proteins SP-A and SP-B. SP-A regulates both secretion and exocytosis of surfactant from Type II cells, as well as reuptake of surfactant for recycling and reuse, and SP-B improves the adsorption and spreading of the phospholipid throughout the air-liquid interface in the alveolus. Surfactant inactivation can be overcome by increasing the surfactant concentration, even in the presence of large amounts of meconium.

The third major pulmonary problem associated with MAS is chemical pneumonitis. Chemical pneumonitis is an acute inflammatory reaction of the bronchial and alveolar epithelium to the acidic meconium, resulting in mucosal and alveolar edema. This pneumonitis further decreases compliance, resulting in alveolar under-expansion and impaired gas exchange. A decrease in diffusion may also occur, further interfering with oxygenation. It is caused by the cholesterol, enzymes, bile salt, and fats in meconium that irritate the airways and parenchyma, causing a diffuse pneumonia that begins within a few hours of aspiration. Cholesterol causes the dissolution of the surfactant film and destabilization of the lung in expiration. Fats and bilirubin also cause this. Bile salts cause toxicity to the Type II pneumocytes responsible for surfactant production.

Airway obstruction, surfactant displacement, and chemical pneumonitis all produce a large ventilation-perfusion mismatch. Even though meconium is sterile, its presence in the airways can predispose the neonate to pulmonary infection.

In another study, Usta and colleagues...
“Meconium” continued from page 5

leagues looked at 937 maternal or neonatal charts complicated by moderate or thick meconium-stained amniotic fluid; 440 received AI. Their study did not show any reduction in the incidence of five-minute Apgar scores of seven or less, meconium below the vocal cords, MAS, ventilation requirement, or neonatal death. The AI groups had a higher incidence of fetal heart rate abnormalities in labor, instrumental delivery, cesarean delivery, and endometritis. Therefore, they concluded that with the policy of routine AI for moderate or thick meconium-stained amniotic fluid, AI was not beneficial. They were unable to demonstrate any improvement in neonatal outcome in those who received AI for moderate or thick meconium. Those in opposition to AI are basically saying that even though AI ameliorates respiratory distress, acidosis, and MAS, it also increases the rate of occurrence of fetal heart rate abnormalities and increases the occurrence of cesarean deliveries and operative vaginal deliveries.

Preventive therapy measures start in the delivery room, especially in the neonate exposed to meconium-stained amniotic fluid. When meconium is detected, there may be some benefit to AI. Some experts may disagree. AI is the infusing of warm normal saline (at body temperature, preferably) into the amniotic space. This dilutes the meconium and/or decompresses the umbilical cord and the placenta, which may minimize the severity of aspiration. This is done with a double lumen catheter that also monitors uterine contractions. Since AI for variable fetal heart rate decelerations has become accepted care, Spong and colleagues sought to determine the benefit of prophylactic AI for meconium compared with the standard care, incorporating therapeutic AI for variable decelerations in their study. They concluded that although AI does dilute amniotic meconium, prophylactic AI for meconium in the absence of variable deceleration remains controversial. Prophylactic AI in term pregnancies did not improve perinatal outcome and increased the risk for chorioamnionitis. Chorioamnionitis is an infection involving the chorion and amnion and amniotic fluid; usually the placental villi and decidua are also involved.

Suctioning of a newborn’s nasopharynx and oropharynx should be done thoroughly as the head of the neonate is delivered. Immediate suctioning reduces the incidence of MAS in neonates born with meconium staining of the amniotic fluid. The incidence of symptoms and complicating pneumothoraces is reduced when all infants with meconium staining are suctioned, compared with suctioning only those for whom meconium is seen in the oropharynx.

The percentage of infants with MAS who were delivered by cesarean section increased from 15% in 1975 to 87% in 1983. However, the mortality rate greatly improved among affected children: in 1975, 46% died; in 1983, 12.5% died. The suction protocol was associated with improved outcome when MAS occurred. Changes in clinical management, however, played a role in the improved statistics. Some of the changes were: frequent chest physiotherapy, postural drainage and suctioning after birth, routine delivery room attendance by pediatricians, hyperventilation treatment for primary pulmonary hypertension, use of muscle relaxants, prophylactic antibiotics, pulmonary vasodilators, and more aggressive obstetric management as reflected by the increased cesarean rate.

A study in 1990 noted aggressive suctioning of neonates exposed to meconium at the time of delivery, followed by tracheal intubation of any depressed infants. Meconium-stained amniotic fluid was found in 659 deliveries out of a total of 4,075; the remainder had clear amniotic fluid. The meconium was thick in 158, moderate in 63, thin in 300, and unspecified in 138 deliveries. The neonates exposed to meconium were significantly more advanced in gestational age and exhibited heavier birth weights than those exposed to clear amniotic fluid. Of the 316 neonates intubated at birth, 93 (31%) were noted to have meconium in the trachea, and this was significantly associated with lower Apgar scores at one and five minutes. Thirty-five neonates exposed to meconium and intubated were admitted to the neonatal intensive care unit. Nine of these neonates (five with thick meconium and four with moderate or unspecified meconium) were diagnosed with MAS. Evidence suggested that a low one-minute Apgar score in combination with tracheal intubation and the presence of meconium in the trachea yielded a high sensitivity for MAS. MAS occurred in the majority of neonates (91%) with meconium in the trachea. MAS still developed in one neonate who didn’t have meconium in the trachea. Adhering to the suctioning protocol yielded a decrease in neonatal intubation by 48%, compared with a protocol of universal intubation. These data suggest that the practice of intubating neonates with a low one-minute Apgar score, followed by a finding of meconium in the trachea, will identify most neonates at risk for MAS. This approach is equal to that of a term infant exposed to clear amniotic fluid. According to Peng and colleagues, an aggressive approach in the prevention of MAS has limited value.

Even though not yet standard procedure, there are some other methods used to treat MAS, such as high frequency jet ventilation (HFJV), exogenous surfactant, surfactant lavage of the bronchial tree, and extracorporeal membrane oxygenation (ECMO).

Davis and colleagues studied HFJV in 28 neonates with RDS and MAS who did not respond to conventional ventilation and surfactant replacement. Initially, patients responded positively to jet ventilation, but later their condition deteriorated, requiring further administration of calf surfactant extract. Significant short- and long-term improvement of their clinical condition and ventilation settings was obtained. Only ten neonates required further surfactant during jet ventilation, but two needed a third dose. An 89% survival rate was obtained without ECMO. It was concluded that a combination of HFJV and exogenous surfactant might be effective in the treatment of neonates with severe respiratory failure caused by MAS. High frequency ventilation (HFV) has been used in
MAS in the hope that the lower pressures and higher frequencies will prove advantageous. The benefits have included less barotrauma, increased mobilization of secretions, maintenance of respiratory alkalosis, and fewer chronic changes. Oxygenation is not necessarily improved with the use of either conventional ventilation or HFV.

Exogenous surfactant administration in histopathological studies of neonates has been seen to reverse surfactant inactivation. In a study done by Findlay and colleagues, improvement with the administration of exogenous surfactant was shown by the reduction in the length of time required for artificial ventilation and oxygen therapy and, therefore, a shortened stay in the neonatal intensive care unit. Surfactant replacement therapy, if started within six hours of birth, improves oxygenation and reduces the incidence of air leaks, severity of pulmonary morbidity, and hospitalization time of term infants with MAS. Surfactant lavage of the bronchial tree not only allows removal of meconium, but also helps to maintain endogenous surfactant.

ECMO may be used when all else fails. ECMO is a form of therapy that can support heart and/or lung function when a patient’s own heart and/or lung function is inadequate. The blood is oxygenated outside of the body. Blood drains by gravity from the patient through a tube (catheter) placed in a large neck vein. This blood passes through a plastic pouch, or bladder, and then is pumped through the membrane oxygenator that serves as an artificial lung, putting oxygen into the blood and removing carbon dioxide. The blood then passes through a heat exchanger that maintains the blood at normal body temperature. Finally, the blood reenters the body through a large catheter placed in an artery in the neck.

In a recent randomized UK study, researchers confirmed that MAS is a disease in which ECMO treatment gives the best results regarding the survival rate when other methods have failed.

The information presented in this literature strongly suggests that the outcome of infants with MAS has drastically changed over the years. The research continues, and in the very near future a specific, workable protocol may be standardized on a state, regional, national, and international level. Even though medical experts do not agree on all the methods, by far the leading methods of therapy include suctioning, surfactant therapy, AI, and ECMO. Moderate, cautious prenatal care, coupled with an alert, aggressive labor and delivery team, should decrease the number of babies diagnosed with MAS, whether they are delivered by cesarean section or vaginal delivery.
Don’t forget to make your nominations for the 2001 Education Specialty Practitioner of the Year. This honor is given to an outstanding practitioner from this section each year at the AARC’s Annual Convention.

The recipient of this award will be determined by the section chair or a selection committee appointed by the chair. Each nominee must be a member of the AARC and a member of the section.

Use the following form to send in your nominations for this important award:

I would like to nominate ____________________________ for Education Specialty Practitioner of the Year because
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Mail or FAX your nomination to the section chair at the address/number listed on page 2 of this issue.