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AARC Times

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Lynne Leach Wins AARC Photo Contest with "Peacock Annie"

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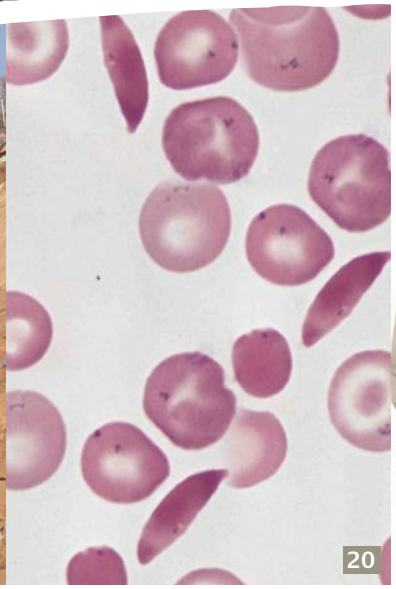

Cover photo by Lynne Leach, RRT, RPFT, Davisburg, MI

AARC Strategic Plan

AARC Vision/Mission Statement: The American Association for Respiratory Care (AARC) will continue to be the leading national and international professional association for respiratory care. The AARC will encourage and promote professional excellence, advance the science and practice of respiratory care, and serve as an advocate for patients, their families, the public, the profession, and the respiratory therapist.

AARC Strategic Objectives

• Validate the science of respiratory care and the value of the respiratory therapist (RT) in providing respiratory care by supporting, conducting, and publishing research information.

• Promote respiratory therapists as the best providers of respiratory care by assuring that the science that clarifies the value and role of the RT is provided to those stakeholders whose decisions and actions need to be guided by that information.

• Promote respiratory therapists and the American Association for Respiratory Care by developing and implementing promotion and marketing campaigns targeted to unique audiences.

• Assure the Association has the resources to meet the needs of its members and that the AARC has the needed financial, volunteer, and staff resources needed to accomplish the implementation of the strategic plan of the Association.

The complete version of the Association's Strategic Plan is available to Association members online at www.aarc.org/members_area/resources/strategic.asp.

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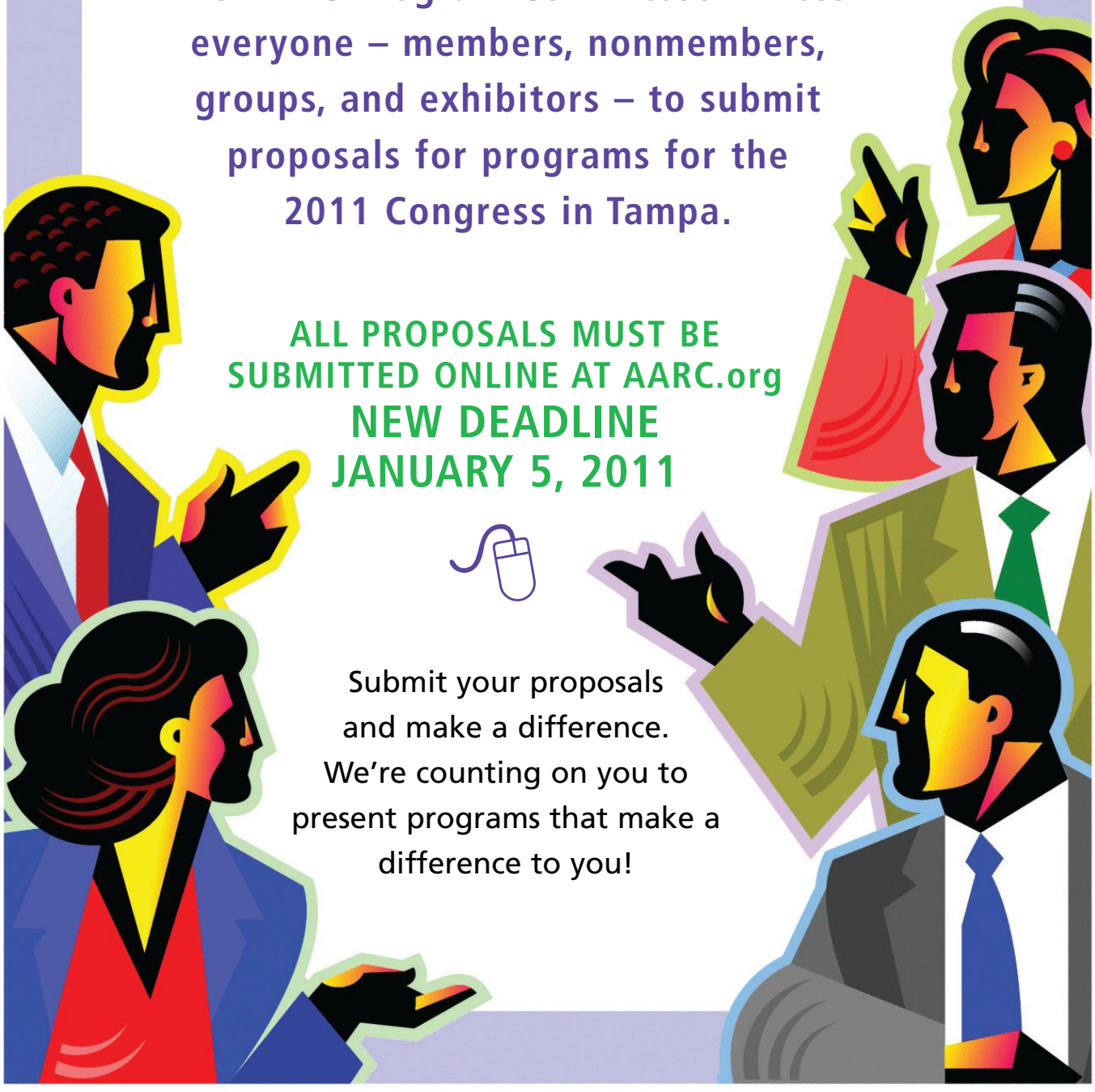

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Pretty as a Peacock

Winning photo in 2010 contest exemplifies the spirit of pulmonary rehabilitation

by Debbie Bunch

Pulmonary rehabilitation is a place for chronic lung disease patients to learn more about their conditions and to exercise under the watchful eye of respiratory therapists and other health professionals to regain some of their lost functioning.

But it's also a place where people gather to support one another. In most programs, both patients and staff have a lot of fun in the process. That's always been the case in the pulmonary rehab program at McLaren Regional Medical Center in Flint, MI. Launched more than 32 years ago with one treadmill and one patient at a time, the program now enrolls about 60 patients in the full program and 50 patients in the maintenance program. Spouses are welcome to accompany patients to the facility and even take part in the exercise if they so desire.

For the woman you see on the cover of this issue, that was her introduction to pulmonary rehab. "I first met Annie through her husband Bob," explains Lynne Leach, RRT, RPFT, who has been working as a staff therapist in the program since 1998 and took the winning photo in our 2010 Photo-of-the-Year Contest. "Bob was our patient initially because he had emphysema. As his health deteriorated, Annie would bring him to our facility."

When Bob passed away, the AARC member says she and her colleagues didn't see Annie quite as often, but she still stayed in touch through the program's Breathers Club support group. Then about three or four years ago, Annie returned to the program as a referral. "She had a hospital stay and was diagnosed with COPD and pulmonary hypertension," says Leach.

While staff members were sorry to hear about her diagnosis, they were more than happy to see her smiling face back in the room. "The first thing you notice about Annie is her smile and warmth," says Leach. "She is a friend to everyone in our program." At 83, Leach says her patient is still going strong and serves as an inspiration to everyone in the program. "She is the tiniest ball of energy. As a patient, she continues to amaze me. Her strength and determination are astounding."

"I met Lynne years ago when my husband Bob was a patient at pulmonary rehab," says Annie. "I really got to know her when I became a patient. Lynne has helped me in all areas of pulmonary rehab. She has taught me how to breathe, the importance of wearing my oxygen, exercise, and just everything. I am so thankful for all the respiratory therapists here."

on the cover…

Annie

Photo by Lynne Leach

So, how did the winning photo come about? Leach explains that Annie wears a forehead probe during exercise rather than a finger pulse oximeter because she also has Raynaud's syndrome. On this particular day, one of her friends in the program had the bright idea to dress up the headband with some feathers, and the rest is history.

Says Annie, "It was all Beverly's doing. She is such the instigator! When she brought in the peacock feathers and wanted Lynne to put them in the headband, I just laughed and went along with the joke. Then Lynne got the camera out because she said that she just had to snap a picture of me because I was 'as pretty as a peacock.' I let her submit the picture because I never dreamed I would win."

Now that her photo has taken the top prize, what does she think about being a "cover girl"? "I really was shocked that my picture was chosen," says Annie. "After Lynne called me with the news, I called family members. They are so happy for me." Her friends in the program are happy for her, too. "I keep being asked for my autograph. It's exciting and fun." ■

Chronic Disease Manager

New Column: Chronic Disease Manager

by Thomas J. Kallstrom, MBA, RRT, FAARC

Welcome to the new "Chronic Disease Manager" column. As the role of the respiratory therapist changes, so must our focus in the coming years. As the AARC continues to aggressively pursue Medicare Part B coverage for the practicing respiratory therapist, we are keenly aware that disease management of the patient with chronic lung disease will be crucial and respiratory therapists need to be at the head of the line. Even today, without this coverage in place, there are many respiratory therapists who are actively managing patients under the disease management model in patients' homes and outpatient clinics. If you are doing protocols in the hospital, you are already practicing a form of disease management.

The number of patients who will be cared for under disease management is likely to grow exponentially in the coming years. With this in mind, we decided that after 15 years the "Focus on Allergies and Asthma" column would be folded in this column. This was a natural evolution. In fact, over the past two decades the RT's role in asthma and COPD disease-management has evolved into acute-care settings, patients' homes, and the community. Chronic obstructive lung diseases, including asthma and COPD, are ideal for the disease management paradigm; and RTs can apply their abilities in treating and teaching patients in various settings beyond the hospital walls.[1]

about the author...

Thomas J. Kallstrom, MBA, RRT, FAARC, is associate executive director and chief operating officer of the AARC.

What is disease management?

Before we go further, it is important to define what disease management is. It can best be described as a comprehensive and coordinated system of care that focuses on the chronic disease state rather than on just the acute episode. It includes prevention, treatment, patient tracking and follow-up.[2] Another vital piece of the puzzle is communication. In order to be successful we must communicate adequately to the patient, caregiver, family, and clinicians who manage that patient. If we do not, the outlook for the patient will be considerably impaired.

A unique feature of disease management is that control of chronic disease must focus on the chronic disease state rather than just the acute episode. Our recent Human Resources Survey in 2009 found that approximately 70% of us work in acute care. This does not mean that we cannot practice disease management in the hospital — in fact, we can utilize the key features of this model to improve care and expedite the process of care and hopefully reduce length of stay in this setting. For many patients, disease management actually starts in the hospital.

There is an increasing need for the disease-management paradigm of managing chronic diseases, because chronic respiratory diseases are on the rise. According to the U.S. Centers for Disease Control and Prevention, in 2000 over 90 million Americans had a chronic condition, and chronic conditions accounted for 70% of all deaths.[3] It is also estimated by the U.S. Centers for Disease Control and Prevention (CDC) that by the year 2020 the number of Americans with at least one chronic condition may grow to 157 million. This is likely due to the baby boomers who are already entering these ranks of patients with chronic health problems.

Are you prepared?

Over the next year we will invite experts in various areas of chronic disease management to address the

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Ventilation for Life

Innovations in Neonatal Transport Ventilation

by Steven E. Sittig, RRT-NPS, C-NPT, FAARC

The transport of newborns has been in the published medical literature for over a century. In 1900 Dr. Joseph DeLee of the Chicago Lying Hospital was credited with developing the first mobile incubator for premature infants. This early device provided the premature infant with warmth while being transported to the hospital after being born at home. The "DeLee incubator ambulance," as it was known, was a miniature incubator with a circulating hot-water system heated from the outside by an alcohol lamp. It was lit by electricity and had a simple ventilation system.[1] These early transport incubator systems were very crude by today's standards. Early on, the medical profession was split in its support of these newly developed transport isolettes. In 1917 a physician even asserted that "incubators are passé except for country fairs and sideshows."[2] So much has changed since then.

Technology and knowledge improve neonatal ventilation

During the last two decades, many new respiratory techniques have been developed to support the neonate. Although these new techniques have been extensively researched, many studies have included only premature infants with acute respiratory distress syndrome. One must remember that the newborn can suffer from various disease processes, each with a different underlying pathophysiology and varying impact on lung function. For instance, a term infant with meconium aspiration syndrome (MAS) may have over-distended lungs with high airway resistance, whereas the surfactant-deficient lungs of premature infants are atelectatic and noncompliant. Thus, the concept of "one mode fits all" is no longer an appropriate respiratory management strategy, evidenced by studies examining the efficacy of ventilatory modes that have addressed only one type of lung disorder, leaving management of other conditions in question.[3]

It is clear that neonatal ventilation is not simply ventilation of small adults. Assisted ventilation of preterm newborns with respiratory failure has traditionally been accomplished using time-cycled, pressure-limited (TCPL) devices for decades, primarily because of the ease of its application and relative safety.[4] As the field of neonatology knowledge expanded, so did the technology to help care for the seemingly ever-diminishing sizes of the patients. This new technology is offering potentially promising options for mechanical ventilation of newborns to clinicians who truly understand the intricacies of this patient population. Despite the availability of options of ventilation modes for the newborn in the neonatal intensive care unit (NICU) — such as SIMV with pressure support, volume guarantee (PSV-VG), high-frequency ventilation, and airway pressure release ventilation (APRV) — the goals of ventilation remain the same and are clear:

- to maintain adequate, not necessarily normal, pulmonary gas exchange;
- to minimize lung injury with the least possible degree of hemodynamic impairment to help avoid injury to distant organs; and
- to decrease the patient's work of breathing and optimize patient comfort.[5,6]

about the author...

Steven E. Sittig, RRT-NPS, C-NPT, FAARC, is a pediatric clinical transport specialist at Mayo Clinic in Rochester, MN. He also serves the AARC as chair of both the Surface to Air Transport Section and the Disaster Response Roundtable and is the AARC representative to the CAMTS board of directors.

The "DeLee incubator ambulance," developed in 1900, was the first mobile incubator for premature infants.

Mobile NICU challenges

Today's modern NICU has an immense amount of equipment and personnel to support and monitor the critically ill newborn. On the other hand, neonatal transport systems need to have many items or pieces of equipment on hand at all times. These teams often are asked to operate in different travel conditions, from helicopters and fixed wing aircraft to ground ambulances. A typical neonatal transport team is comprised of specially trained registered nurses and respiratory therapists. The transport of critically ill neonates is a very dynamic process, and a multitude of interventions may occur during a transport. Interventions may include adjustments of the ventilator settings such as FIO_2, rate and minute ventilation, glucose control, inotrope support, or volume boluses.[7]

Transport of critically ill neonates has evolved into a highly specialized process. Specific transport training is widely accepted and essential for staff who will be called upon to transfer neonatal patients from one location to another.[8] The application of improper ventilator settings and oxygen level can potentially worsen the patient's underlying need for transport and result in a higher level of care. Extreme hypercapnia can lead to pulmonary vasoconstriction and intraventricular hemorrhage. In neonates with MAS, persistent pulmonary hypertension of newborn (PPHN), and certain congenital heart disease patients who are maintained on an adequate pulmonary blood flow, pulmonary vasoconstriction is undesirable. On the contrary, extreme hypocapnia has been shown to increase the incidence of periventricular leukomalacia and cerebral palsy.[9]

In the past, monitoring neonates during transport included a "bare bones" approach. Typical physiologic monitoring would include pulse oximetry, electrocardiogram, and blood pressure monitoring. With the addition of point-of-care testing, the transport team can quickly assess the needed level of ventilatory support, avoiding the complications of hypocapnia or hypercapnia, as well as valuable electrolytes.[10] The advanced technology of mechanical transport ventilators has also helped improve this mobile intensive care. The ability to deliver consistent tidal volumes along with point-of-care testing helps the team to adjust the mechanical ventilator support

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Recent Sleep-related Articles Highlight Latest Research

The following sleep-related studies have appeared in scientific publications over the past few months.

Rod cells play a role in setting the internal clock

U.S. researchers publishing in a recent issue of *Nature Neuroscience* are helping to explain how light coming into the brain through the eyes sets our internal clocks. Their study, conducted in a mouse model, found rod cells (one of three types of photosensitive cells located in the retina) are solely responsible for setting the internal clock in low-light conditions. These cells also contribute to setting the internal clock in bright-light conditions, along with cones and other retinal cells.

The findings run counter to conventional wisdom, which holds that circadian rhythms can only be set in bright light. The investigators were also surprised because research has shown rod cells become ineffective when exposed to bright light, leading to the original conclusion that these cells have no role in setting the internal clock.

According to the authors, the study results have implications for people exposed to prolonged periods of dim or low light at night because such exposure could influence their internal clocks. Since rod cells are often lost with age, the findings could also help explain some sleep problems seen in elderly people.

BIS scale may predict non-adherence to CPAP

A new study out of East Carolina University in Greenville, NC, suggests the Behavioral Inhibition System (BIS) scale may be useful in predicting non-adherence to continuous positive airway pressure (CPAP) among people with obstructive sleep apnea (OSA). The investigators analyzed data from the BIS and other standard measures in 63 adults with OSA using a binary logistic regression. Adherence to CPAP was defined as using the device for more than four hours a night on 70% of nights.

The regression correctly classified 73% of participants as adherent or non-adherent, and an elevated BIS was the strongest predictor. Neuroticism was the second strongest predictor. The authors conclude, "The BIS scale may be a useful tool for predicting non-adherence and assist with the development of intervention strategies that will increase adherence." The study was published in the Sept. 28 Epub edition of *Sleep & Breathing*.

Sleepiness increases risk for depression in OSA patients

Do certain OSA factors put patients at higher risk for depression? Johns Hopkins researchers set out to answer that question in a study that compared Beck Depression Inventory (BDI) and Epworth Sleepiness Scale (ESS) scores, along with polysomnography results, in 53 consecutive patients with suspected OSA to those found in a control group. The OSA patients were all assessed prior to treatment. Results showed:

- Depression was seen in 35% of OSA patients and 8% of controls.
- A significant correlation was seen between the BDI and ESS scores.
- The ESS was significantly associated with depression in a linear regression model that controlled for race, sex, age, and respiratory disturbance index (RDI).
- RDI and depression were weakly associated.
- No correlation was seen between BDI scores and OSA disease severity.

The authors conclude, "These data suggest that OSA patients with symptoms of excessive sleepiness have the highest risk of associated depressive symptoms and may benefit most from depression screening." They published their findings in the Oct. 11 Epub edition of *Laryngoscope*.

Dieters need their sleep

Burning the candle at both ends while dieting isn't a good idea, find University of Chicago researchers who followed 10 healthy overweight volunteers aged 35 to 49 with a body mass index (BMI) ranging from 25 to 32.

Participants were placed on an individualized, balanced diet, with calories restricted to 90% of what they needed to maintain their weight without exercise. Each

participant underwent two, two-week sessions in a laboratory setting: one in which 8.5 hours were set aside for sleep, and one in which 5.5 hours were set aside for sleep.

During the two-week, 8.5-hours-in-bed phase, volunteers slept an average of seven hours and 25 minutes each night. In the 5.5-hour phase, they slept five hours and 14 minutes. The volunteers lost an average of 6.6 pounds during each 14-day session, but during weeks with adequate sleep, they lost 3.1 pounds of fat and 3.3 pounds of fat-free body mass, mostly protein. During the short-sleep weeks, participants lost an average of 1.3 pounds of fat and 5.3 pounds of fat-free mass — a 55% reduction in fat loss when compared to the two-week period with more sleep.

Getting adequate sleep also helped control hunger. Average levels of ghrelin did not change when dieters spent 8.5 hours in bed. However, when they spent 5.5 hours in bed, their ghrelin levels rose from 75 ng/L to 84 ng/L. The study appeared in the Oct. 5 issue of the *Annals of Internal Medicine*.

Colorectal adenoma more common in short sleepers

Poor quality sleep has been linked to numerous conditions. Here's another one: Researchers from Case Western Reserve University in Cleveland, OH, find people with short duration sleep (defined as less than six hours a night) are significantly more likely to have colorectal adenoma.

The study was conducted among 1,240 people prior to undergoing colonoscopy. All were screened for sleep problems using the Pittsburg Sleep Quality Index (PSQI). Adenoma was found in 338 of the patients, or 27.3%. While overall PSQI scores were similar for patients with and without incident colorectal adenoma, the presence of adenoma was significantly associated with PSQI component 3, which relates to sleep duration. Overall, 28.9% of these patients reported sleeping for fewer than six hours a night, compared to 22.1% of patients without adenomas.

The authors believe these findings suggest sleep duration may be a novel risk factor for colorectal neoplasia. The study appeared in the Oct. 8 Epub edition of *Cancer*.

Anatomical differences in obese children with and without OSAS

According to New York investigators publishing in the Oct. 8 Epub edition of the *American Journal of Respiratory and Critical Care Medicine*, anatomical differences may help explain why some obese children develop obstructive sleep apnea syndrome (OSAS) and some do not.

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The Judgment Defense

by Anthony L. DeWitt, JD, RRT, FAARC

When I walked along the halls of hospitals in the 1980s I had a stethoscope and a pen, and most of my work involved carrying out physician orders. Rarely was I given the discretion to choose between alternative treatments. Fortunately for the profession of respiratory care, that has all changed. However, as the writers for the movie "Spiderman" tell us, "with great power comes great responsibility." As therapists working under protocols who are charged with using their discretion for the benefit of patients, there comes the responsibility to be accountable for preventable error. The key word, however, is preventable.

The standard that therapists are held to is one of what is reasonable and prudent under the circumstances. Therapists are not required to be omniscient or be able to predict the future. If a therapist gathers the correct information, analyzes it properly, and using her best judgment reaches the wrong conclusion, most courts hold that is not negligent. It is error, but error of this kind is often not preventable.

The key to the judgment defense is proper patient evaluation (the timely gathering of the right information to assess the problem) and documentation of the entire patient-care process. Without these two key components a therapist is not entitled to exercise her judgment.

Consider the case of a 54-year-old man in the hospital for an exacerbation of COPD. The therapist is called to the bedside to evaluate the man after he reports left-sided chest pain and shortness of breath following a paroxysmal coughing incident. The patient is a frequent hospital patient and is well known to the staff. The therapist sees the patient with shortness of breath much like what he was admitted with. She gives him a brief examination with auscultation, percussion, and observation, and concludes that a nebulizer will be appropriate. Her documentation reads:

Pt. experiencing SOB. Lungs CTA, though slightly diminished on L. Nebulizer with Albuterol per protocol. Reassess in 1 hour. J.E.A.

She delivers the therapy and the patient reports he feels a little better but still has trouble breathing. The pulse oximeter reads 90. The therapist assures him he'll feel better shortly, then moves on to her other patients. Half an hour later she is called back when the patient is obtunded and has an oxygen saturation of 77. The physician is called. A chest radiograph reveals a left-sided pneumothorax, and the patient expires in spite of the team's best efforts. Is the therapist entitled to the judgment defense if she or her employer get sued?

Logic dictates that a therapist can only judge a patient's condition if she is informed about all the relevant clinical data. It is the therapist's duty to acquire that data. The charting above is terrible. Woefully absent is the patient history. The therapist has charted only that she listened to lung sounds and that they were clear to auscultation (a finding that may be at odds with the patient's clinical condition). She does not record that she did a physical exam or used palpation and percussion in her exam. On the record as set out above, there is insufficient information to submit a judgment defense. While the therapist can testify to all of these things in her deposition, there is a widely asserted and sometimes believed proposition in medicine that if it wasn't charted, it wasn't done.

The better a therapist's documentation, the less likely she is to be sued (or get her employer sued). Proper

about the author...

Anthony L. DeWitt, JD, RRT, FAARC, is an attorney and a partner in the firm Bartimus, Frickleton, Robertson & Gorny, PC, and resides in Jefferson City, MO. He has also authored two books and numerous legal journal articles. This article is not a substitute for legal advice.

documentation in an age of protocols should include all the pertinent patient history: *(Patient has a long history of COPD with frequent flare-ups that respond well to albuterol.)* It would also document a careful examination of the patient: *(Patient had some inspiratory wheezing over the right lung fields with breath sounds diminished over the left. Mild use of accessory muscles of ventilation. Percussion notes were resonant throughout. Chest expansion equal bilaterally. Oxygen saturation on room air was 90.)* Factors used in arriving at the plan of care should be documented: *(Patient does not appear acutely ill. States: "I feel like I pulled a muscle when I coughed." Oxygen saturation normal for patient at 90. Will treat for bronchospasm and re-evaluate in an hour.)* The vital signs and results of therapy should, of course, also be appended.

While all of this takes time and therapists frequently have very little of it, the time spent charting pays off handsomely in the event the therapist or the hospital is ever sued. Documentation is the key to proving that as a therapist you acted as a reasonable and prudent professional under the circumstances. While a reviewing therapist might pick nits over how things were documented, if the information appearing in the record shows you gathered the right information, then a judgment defense can be asserted successfully.

Here the therapist gathered all the right information. She sought an explanation from the patient, she listened to the lungs. She percussed the chest to rule out hyperresonant lung sounds, and she noted that chest expansion was bilateral. Given the patient's history of responding well to bronchodilators, a reasonable judgment under the circumstances was that the patient had bronchospasm that required treatment.

The fact that the patient had actually developed a pneumothorax — something that the therapist assessed for but did not find, might still lead to a lawsuit, but it is not a lawsuit a good lawyer would take because of the charting. While some would argue that this patient should have been referred to the attending or house officer who would have ordered a radiograph, and there is some merit to that claim, a good malpractice lawyer would be unlikely to question the therapist's actions in this case.

The key takeaway is: No one ever got to court and said they wished they hadn't written so much. But they often get to court and say they wished they had written a little more. ■

Government Affairs Year-end Wrap-up 2010

by Cheryl West, MHA, Anne Marie Hummel, and Miriam O'Day

The AARC's Government Affairs staff, working in partnership with state societies, patient/consumer associations and "like-minded" organizations, was active in 2010 on respiratory therapy issues at both the state and federal level. State and federal laws, and especially the regulations/guidelines that detail and interpret the laws, can profoundly impact not only the requirements to be licensed as a respiratory therapist but adjust what services and under what circumstances you may provide respiratory care services to your patients.

State issues

Topping the list of important state RC news in 2010 was Hawaii enacting state licensure for the respiratory therapist and thus becoming the 49th state along with Puerto Rico and the District of Columbia to require the profession to be regulated. The efforts of the Hawaii Society for Respiratory Care cannot be praised enough as this was a multiple-year effort that faced much opposition along the way.

State laws and regulations affecting the RC profession

Last year most states circulated and debated numerous legislative bills and proposed regulations: bills and regulations that would have or actually did (when enacted or implemented) impact the profession. Space limitations of this article permit providing only a few brief examples of the types of legislation passed and regulations revised. These brief and state-specific examples of laws and regulation changes may not impact you and your state; however, they can provide a sense of the trends other states are taking and the possibility that your state might eventually go down the same path.

about the authors...

Cheryl West, MHA, serves as director of government affairs for the AARC. Anne Marie Hummel is the AARC's director of regulatory affairs, and Miriam O'Day serves as director of legislative affairs for the AARC in Washington, DC.

State legislation

In the name of efficiency and consistency among the laws governing many health professions, state legislatures frequently make changes that impact all or most licensed health care providers. In doing so, these overall changes will, of course, impact the licensed respiratory therapist. Some examples of the changes that states passed this year include the following:

- Louisiana passed a law that included, among other practitioners, RTs under the state's definition of "health care provider." This new law now permits RTs to come under malpractice laws for state and private services.
- Indiana passed a law that enhanced the authority of state licensing boards, including the Respiratory Care Committee, to issue "cease and desist" orders for those practicing a regulated profession without a license.
- Rhode Island passed a law that will require hospitals to track hospital-acquired infections including ventilator-associated pneumonia.
- Illinois introduced a bill that would establish the Long Term Acute Care Hospital Quality Improvement Program. This would be a voluntary program. However, hospitals choosing to participate would have to meet certain mandated requirements, including maintaining on-site respiratory therapy coverage 24/7.

State regulations: respiratory licensure boards/committees/advisory councils

Respiratory therapy state licensure boards, committees or councils have extensive authority to amend and

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revise the rules under which RTs are regulated. Most changes deal with licensing requirements, but occasionally the rule changes address scope of practice issues. Often even small changes in the regulations have a major impact on the RT. This is one reason why your state societies are so actively involved in monitoring and engaging the boards that oversee your profession. Examples of state regulation changes include the following:

- A Delaware RC regulation specified just how many continuing education credits for license renewal could be taken online versus "live" attendance.
- Kansas clarified its RC license application regarding the questions that must be answered and the documentation that the RT must provide.
- Maine, North Carolina, Wyoming, and Washington State all made adjustments (i.e., increased) various RC licensing fees.

Federal regulations and other policies

Pulmonary rehabilitation — Jan. 1, 2010, marked the culmination of many years of hard work by RTs and the AARC to ensure Medicare beneficiaries have access to pulmonary rehabilitation (PR) programs that can improve their quality of life. Final regulations are in place and PR programs are underway in both physicians' offices and hospital outpatient settings. For calendar year 2011, payment rates have been increased, the definition of "direct supervision" has been revised to remove references to a physical boundary such as a provider-based department, and the non-enforcement of direct supervision in critical access hospitals has been extended another year.

We received many questions from RTs asking for clarification about certain aspects of the new benefit. AARC has developed a list of "Frequently Asked Questions" which AARC members can access from our website (www.aarc.org/advocacy/activities/medicare_pr_faq.asp).

With respect to local coverage determinations (LCDs) on pulmonary rehabilitation, Trailblazer is the first Medicare Part A/B Administrative Contractor to issue a final LCD in its Jurisdiction 4, which covers the states of Colorado, New Mexico, Oklahoma, and Texas. The provisions took effect Dec. 14, 2010. Other contractors could decide to use this as a model for future LCDs.

Orders for respiratory care services — Longstanding Medicare policy required that only a physician (MD/DO) could write orders for respiratory care. However, if the physician delegated authority to a licensed non-physician practitioner such as a physician assistant or nurse practitioner to write a respiratory care order for his/her patient *and* the hospital permitted such arrangements, in order to comply with Medicare rules this required the physician to *co-sign the order*.

Since many state laws have changed over time to permit non-physician practitioners to write orders as long as it is part of their scope of practice, the Centers for Medicare and Medicaid Services (CMS) updated its rules to permit other qualified and licensed practitioners to write RC orders in addition to the physician as long as they are:

- responsible for the care of the patient,
- acting within his/her scope of practice under state law, and
- authorized by the hospital's medical staff to order the services in accordance with hospital policies and procedures and state laws.

The new rule permits hospitals to have flexibility in developing written policies that are consistent with their state laws. It does not mean they must adopt the new policy. This is especially true in the 34 states that still have respiratory care practice acts that require a physician to write an RC order. We would expect in those 34 states that hospitals would:

- either continue to have a policy that only permits the physician to write an RC order, or
- require the physician to co-sign the RC order if the hospital determines that other licensed practitioners in those states meet the requirements laid out by CMS and it wishes to revise the hospital's written policies.

Revisions to local coverage policies on CPAP and RADs — Local coverage policies regarding continuous positive airway pressure (CPAP) for the treatment of obstructive sleep apnea and bi-level respiratory-assist devices (RADs) have been revised. The major CPAP change involves documentation that must be provided in the medical record when CPAP proves to be ineffective and the physician wants to move the patient to a bi-level RAD. Subsequent revisions to the documentation requirements were made based on industry concerns that the original provisions were overly prescriptive. Also noteworthy, the RAD policy adds hypoventilation syndrome as a new coverage criterion.

Expansion of national coverage determination on smoking-cessation counseling — CMS issued a final decision memo to expand smoking-cessation counseling

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  Peter C. Gay, MD
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- **Management of the COPD Patient with Comorbidities**
  Robert A. Sandhaus, MD PhD FCCP
  Tom Kallstrom, MBA RRT FAARC
  This presentation will review best practices in managing COPD patients with an emphasis on management of co-morbid conditions that frequently afflict these patients. Treatment strategies to maximize their care will be discussed.

- **Noninvasive Ventilation of Neonatal-Pediatric Patients: Do We Really Want to Intubate?**
  Rob DiBlasi, RRT-NP FAARC
  Ira Cheifetz, MD FAARC
  This presentation will identify clinical circumstances that favor the use of NIV to support ventilation and explore the evidence supporting the use of non-invasive ventilation in neonatal and pediatric patients.

- **The Role of Safety Checklists in Healthcare: Bother or Necessity?**
  Timothy McDonald, MD JD
  Sam Giordano, MBA RRT FAARC
  This presentation will review the history of the use of checklists and other standardized procedures to improve outcomes in various industries and discuss how they are being adopted for use in healthcare to reduce errors and improve patient safety.

- **Minimizing VAP in 2011– How Respiratory Therapists Can Contribute**
  Marcos I. Restrepo, MD
  Tom Kallstrom, MBA RRT FAARC
  This presentation will describe the best practices for reducing ventilator associated pneumonia and describe key roles respiratory therapists can play in institutional efforts to reduce VAP.

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for outpatient and hospitalized Medicare beneficiaries who use tobacco, regardless of whether they have signs or symptoms of tobacco-related disease. Previous policy required a diagnosis of a tobacco-related disease or symptoms consistent with such diseases. AARC supported the expansion and submitted comments to CMS to that effect.

Competitive bidding — At press time, CMS continues to move forward to implement the competitive bidding program for certain medical equipment and supplies, including oxygen and oxygen equipment, despite grave concerns from the home medical equipment (HME) industry, patient advocates, and a significant number of members of Congress that quality of care and patient access will be compromised if the program goes forward on Jan. 1, 2011. CMS has a dedicated web page (www.cms.gov/DMEPOSCompetitiveBid) that extensively covers competitive bid information including the listing of the HME suppliers that won bids to provide services in the nine specific geographical areas (e.g., selected Metropolitan Statistical Areas or MSAs) of Round 1 of the program. Suppliers that were not awarded a contract under the competitive bidding program have the option to continue serving those beneficiaries to whom they were already furnishing services at the time the program started if they agree to meet certain conditions. They are called "grandfathered suppliers."

New durable medical equipment supplier standards — CMS has finalized new enrollment standards designed to add stronger protections against fraud for those durable medical equipment (DME) suppliers intending to contract with the Medicare program. With two key exceptions, DME suppliers that chose to employ licensed professionals can no longer contract out their services. This provision can impact RTs (or nurses for that matter) who in the past have worked for a DME supplier through a contractual arrangement. The RT will now have to be a W-2 employee of the supplier, either on a part-time or full-time basis, unless "contracting" of personnel is allowed by state law where the licensed services are being performed or if the DME has been awarded a contract under the above-mentioned competitive bidding program.

New FDA safety requirements for LABAs — The U.S. Food and Drug Administration (FDA) issued new safety recommendations regarding long-acting beta agonists (LABAs) used to treat asthma. The recommendations do not apply to LABAs that are used to treat COPD. The FDA emphasized that LABAs should never be used without the addition of an asthma controller medication such as an inhaled steroid and stressed that they should be used only for the shortest period of time required to achieve control of asthma symptoms and then discontinued. The recommendations have been incorporated into manufacturers' drug labels.

MDI transition update: final phase-out of CFC MDI inhalers — The FDA also announced the final phase-out schedule of seven metered-dose inhalers (MDIs) that use chlorofluorocarbons (CFCs) as propellants in its efforts to eliminate products that deplete the ozone layer. You will recall that albuterol MDIs were the first to be phased out at the end of 2008. Four of the seven remaining products are no longer being made. The remaining three — Aerobid, Combivent, and Maxair — will be phased-out over the next few years with final action by Dec. 31, 2013.

Legislative activities and other items of interest

Medicare Respiratory Therapy Part B Initiative — The midterm elections ushered in change. Divided government has now returned to Washington after two years of purely Democratic control. The Republicans are now the majority in the House of Representatives and gained a number of seats in the Senate, which remains controlled by Democrats.

Our primary legislative champion and sponsor of H.R. 1077, the Medicare Respiratory Therapy Initiative, Congressman Mike Ross (D-AR) held on to his seat in the midterm elections. The bill remains challenged by an unsupportable score (cost) from the Congressional Budget Office, and the legislation will most likely have to be reintroduced in the next session of Congress with a technical amendment that clarifies the bill's intent. In 2010 we came very close to crossing the goal line and achieving success as our bill was included in the initial versions of both the House and Senate health care reform legislation. However, when Congressional Budget Office opined that our legislation would cost billions over 10 years, it was removed from the final package. We will have to fight again to get to the goal line.

In the Senate, Blanche Lincoln (D-AR), our champion and primary sponsor of the companion bill S. 343 to our House bill, lost her seat to Republican Congressman John Boozman. This is a loss for the AARC and the Congressional COPD Caucus, as Sen. Lincoln was a founder and co-chair of this important caucus. We are, however, very pleased that our other Senate champion, Mike Crapo (R-ID),

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NIH NHLBI NAEPP Coordinating Committee Representation — A Changing of the Guard

by Natalie Napolitano, MPH, RRT-NPS

The National Institutes of Health's (NIH) National Heart, Lung, and Blood Institute (NHLBI) initiated the National Asthma Education and Prevention Program (NAEPP) in 1989 to address the growing problem of asthma in the United States. Since its beginning, the AARC has been an active member of its coordinating committee. Thomas J. Kallstrom, MBA, RRT, FAARC (AARC associate executive director and chief operating officer) has been the AARC's representative to this committee for these 20 years. In September, I attended the meeting with Tom to accept the AARC representation "baton" in this relay with the NAEPP.

Goals and achievements

The goals of the National Asthma Education and Prevention Program include:

- Raise awareness of patients, health professionals, and the public that asthma is a serious chronic disease.
- Ensure the recognition of the symptoms of asthma by patients, families, and the public, and the appropriate diagnosis by health professionals.
- Ensure effective control of asthma by encouraging a partnership among patients, physicians, and other health professionals through modern treatment and education programs.

The NAEPP has had several achievements since the implementation of the committee. They include:

- Development and implementation of the "Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma" (EPR), which has included several updates, most recently in 2009. The EPR is widely published and promoted within all health care professions.
- Development of companion documents for both health care professionals and patients including documents for emergency department personnel, pharmacists, and nurses. Specialty documents were also developed for asthma in pregnancy and asthma in the elderly. One of the publications we are very proud of is the document titled "Making a Difference in the Management of Asthma: A Guide for Respiratory Therapists" published in 2003 (www.nhlbi.nih.gov/health/prof/lung/asthma/asth_respir.pdf).
- Development of a program in schools to address the needs of children and their environments, including education for parents and school personnel.
- Expansion of activities to incorporate local asthma coalitions and support local programs to deliver performance-based interventions to improve physicians' management of asthma.
- Launched an interactive website as a clearinghouse for asthma information and programs, as well as a forum for networking and the exchange of ideas for practitioners.
- Coordinating a number of media campaigns to raise awareness of asthma among the public, including campaigns and programs targeting minority populations.

The NAEPP has developed the National Asthma Control Initiative to demonstrate evidence-based and best-practice approaches for specific audiences in various

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about the author...

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Acute Chest Syndrome and Sickle Cell Disease in the Pediatric Patient

by Cynthia C. White, BA, RRT-NPS, AE-C, FAARC

Respiratory therapists see a fair amount of acute chest syndrome (ACS) in pediatric patients with sickle cell disease. In the winter months, admissions of these patients increase for many of us. The purpose of this article is to review its etiology and treatment strategies.

Acute chest syndrome is the leading cause of death in patients with sickle cell disease. Despite this fact and increasing knowledge of its occurrence, diagnosis is often delayed, optimal treatment is unknown, and the exact cause of a crisis is often difficult to identify. The longer patients with sickle cell disease live, the more frequently acute chest symptoms and pulmonary episodes occur.[1] Over time, this can result in the development of chronic lung disease.

Diagnosis

In a multicenter study published in 2000, 671 episodes of ACS in 538 patients with sickle cell disease at 30 centers were evaluated to determine the cause of ACS, outcome, and the response to therapy.[1] One interesting finding is that nearly half of the patients were admitted to the hospital for another reason, with the main symptom being pain.

This finding is consistent with other published reports of patients with sickle cell disease, as well. Many of these patients developed ACS with radiologic changes within three days of admission. Upon the onset of ACS, patients experienced hypoxia, decreased hemoglobin levels, and progressive multilobar pneumonia. Thirteen percent of the patients in this study group required mechanical ventilation, and 3% died.[1] Symptoms at presentation were age dependent in this study. Wheezing, cough, and fever were present more often in children under 10 years old. Adults tended to present more often with dyspnea and pain in the arms and legs.

The incidence of ACS is reported to be inversely related to fetal hemoglobin concentration and degree of anemia. In addition, it is directly proportional to the steady state white blood cell count.[2]

Acute chest syndrome is noted as a common complication for children with sickle cell disease.[2] A report from the cooperative study of sickle cell disease reports a peak incidence of ACS in children between two and four years of age. A higher prevalence of ACS was also reported during the winter months in these children.[2]

Pathogenesis can be complex, and it is difficult to identify or define a single cause in an individual case. Some of the factors that may be present and contribute to ACS are inflammation secondary to infection or fat embolism, atelectasis resulting in hypoventilation, pulmonary edema, bronchospasm, vasoocclusive crisis and pain involving the ribs, or the patient receiving excessive opioid therapy.

An additional cause could be endothelial dysfunction resulting in increased platelet and plasma coagulation activation and disordered nitric oxide metabolism.[2] A specific cause or etiology can be identified in only around 40% of cases.

Infection is a more common cause of the condition in children under nine years old. The infection can be either viral or bacterial. In the National Acute Chest Syndrome Study Group (NACSSG) trial, the prevalence of specific infectious agents varied with the child's age. In children who were age 10–19, 22% of the

about the author...

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188 episodes were secondary to an infection; 8% were identified as *Chlamydia*, 7% mycoplasma, and 1% secondary to a virus.

In children under nine years old, greater than 35% of cases were secondary to an infection. In this group, 11% were related to a virus, 9% were mycoplasma, 9% were *Chlamydia*, and 4% were bacteria. In the adults who were over 20 years old, 26% were secondary to infections. The breakdown was 9% *Chlamydia*, 7% mycoplasma, and 1% virus.[2]

Despite the fact that acute chest syndrome is the leading cause of death in patients with sickle cell disease, diagnosis is often delayed, optimal treatment is unknown, and the exact cause of a crisis is often difficult to identify.

Treatment

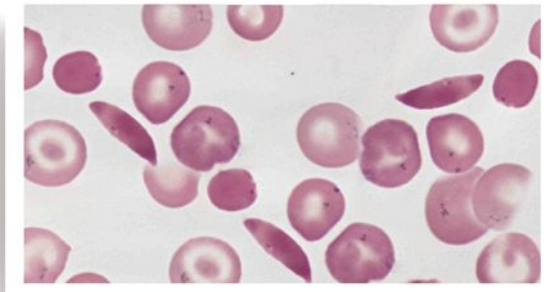
An additional study reported 26% of children with the combination of bacteremia and fever developed ACS.[2] Acute chest syndrome may also develop as a post-operation complication, particularly in children. This makes appropriate pre-operation transfusion support and aggressive post-operation respiratory therapy particularly important in this patient population. Incentive spirometry has been shown to be beneficial in patients who are able to perform it and is routinely used in this population by many centers. For small children or those who cannot perform this effectively, positive expiratory pressure (PEP) therapy and "the vest" are alternatives.

Treatment may be started following diagnosis of ACS from chest x-ray and laboratory evaluation of hemoglobin and white blood cell count. The patient's respiratory status should be closely monitored for the first 48 hours, as this is where the need for increased support and/or mechanical ventilation may arise.

If the patient develops hypoxia, he should be given supplemental oxygen. Monitoring hydration and fluid status is also important. Excessive hydration may lead to pulmonary edema and fluid overload. Pain control is important to prevent thoracic splinting and to enable the patient to perform effective pulmonary toilet, including incentive spirometry and/or PEP therapy or alternative therapies if necessary. All patients with ACS generally receive antibiotics upon initial presentation.

Several studies have shown acute chest syndrome to have a reactive airway component that responds to standard bronchodilator therapies. This may be attributed to the high prevalence of asthma in the sickle cell population, despite the fact that clinical presentation of wheeze does not always exist. The mean forced expiratory volume in this patient is reported as 53% of normal predicted, and 20% of patients in the NACSSG trial had clinical improvement following the administration of bronchodilators. Because of these findings, recommendations are to treat these patients with bronchodilators at presentation despite whether or not wheezing is present. Therapy should be continued if a response is noted.[3]

Transfusion for ACS can be controversial but is often utilized as a treatment strategy. Seventy-two percent of the patients in the NACSSG trial received some form of transfusion.[3] Why this strategy works is still not completely known, but it is thought to be related to improved oxygenation and reduced pulmonary pressures, resulting in decreased platelet aggregation and improved hemoglobin saturation.[3] In at least one study, corticosteroids have also been associated with decreased hospital length of stay, although there is concern for rebound effect and increased need for hospitalization after discharge following their administration.[3]



Prevention is the best strategy

The best management strategy for patients with sickle cell disease is prevention of ACS. Every event of ACS puts the patient at an increased risk of death, long-term injury, and chronic lung disease. Patients with sickle cell disease who are admitted to the hospital for pain and other issues should prophylactically be treated for ACS. Pre-operation and post-operation patients with sickle cell disease should also be closely monitored, with attention given to pre-operation transfusion, careful care with anesthesia, and aggressive incentive spirometry post-operation.

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Clinical Perspectives

The Emergence of Novel Nicotine-based Products, Foods, and Beverages

by Mary P. Martinasek, MPH, RRT

In 1988, the U.S. Surgeon General's report addressed concerns of nicotine addiction, concluding that cigarettes and other forms of tobacco contain the addictive drug nicotine.[1] Over 20 years later, the battle against nicotine addiction persists. Nicotine is considered a potent psychoactive drug that is biphasic in nature, whereby it produces both relaxation and excitation.[2] The pleasurable effects that are produced along with the negative withdrawal symptoms (e.g., irritability, anxiety, and weight gain), contribute to the difficulty in tobacco-dependence treatment efforts.[3] Recognizing the consequences of nicotine use, both nicotine addiction and nicotine withdrawal have been medically classified as nicotine use diagnoses in the "Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition."

Although nicotine is available in all tobacco products, the popularity of cigarette smoking among youth has garnered the most attention. A single cigarette contains approximately 10 mg of nicotine, of which 1–2 mg are absorbed into the lungs of a smoker.[4] It is estimated that a teenager has the potential to develop nicotine addiction after smoking as little as four cigarettes.[2]

Nicotine replacement therapy

The smoke that tobacco produces contains over 4,000 chemicals, some of which are known carcinogens, leading to lung and oral cancers as well as chronic lung and heart disease. Nicotine is the highly addictive component found naturally in tobacco and has the propensity to lead to dependence. In order to combat the negative consequences of tobacco smoke, yet aid in slowly reducing the nicotine addiction, smoking-cessation products known as nicotine replacement therapies (NRT) were developed. These products have been rigorously tested for safety and efficacy and approved by the U.S. Food and Drug Administration (FDA) for use. By replacing the nicotine previously obtained from tobacco, NRTs make it easier for smokers to abstain from the tobacco smoke inhalation and slowly wean from the nicotine addiction. NRTs approved in the United States consist of transdermal nicotine patches, nicotine gums, nicotine lozenges, nicotine sprays, and nicotine inhalers.

Smoking bans are becoming more prevalent nationwide, and new products are emerging that do not hold to the rigorous FDA standards and testing of NRTs, yet make unprecedented claims. It is important for respiratory therapists to be aware of these products when helping/educating patients who desire to quit smoking. Approved nicotine replacement products are safer than tobacco-derived nicotine but not risk-free. However, the benefits of these products outweigh any associated risks. As respiratory therapists who treat patients for tobacco addiction, we should keep current on novel nicotine products (tested and untested) to better inform our patients.

Electronic cigarettes

Developed in China in 2004, electronic cigarettes (e-cigarettes) have spread in popularity around the globe. E-cigarettes, marketed as tobacco-free nicotine delivery devices, are battery-operated devices that vaporize liquid nicotine along with flavorings and other chemicals

about the author...

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for inhalation. These devices are designed to look and function in a similar manner as a conventional cigarette. However, a study by Trtchounian and colleagues found that compared to conventional cigarettes, e-cigarettes require a stronger negative pressure on inhalation with concerns that this may produce adverse human health effects.[5] Because e-cigarettes are tobacco-free, some researchers believe that they are safer than conventional cigarettes.[5,6]

Sold in mall kiosks, stores, and on the Internet, e-cigarettes are being marketed as potential reduced-exposure products and weight-loss aids. Although to some extent these claims may be true, there is a dearth of empirical literature or rigorous testing to provide scientific validity to these claims.[7] E-cigarette sales lack federal age restrictions and appeal to youth with a variety of flavors, such as chocolate, strawberry, bubblegum, and mint.[8] Due to the lack of federal regulation, these products also contain no health-warning labels. States can, however, enact their own regulations to restrict sales, and this offers opportunities for advocacy groups to lobby. For example, New Hampshire, Arizona, Oregon, Minnesota, and New Jersey have statewide age restrictions on e-cigarettes.[8]

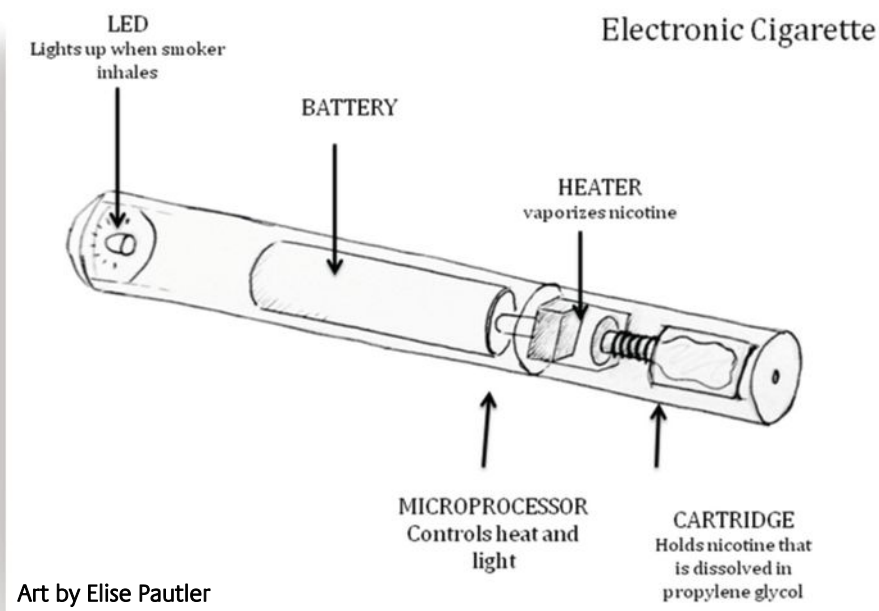
In 2009, President Barack Obama signed into law the Family Smoking Prevention and Tobacco Control Act, giving the FDA regulatory control over tobacco products. Because e-cigarettes do not contain tobacco, they do not fall under the same rigorous testing and control as do tobacco-containing products (e.g., cigarettes, cigars, and smokeless tobacco). Recently, however, the FDA utilized its power under the Federal Food, Drug, and Cosmetic Act to halt e-cigarette manufacturers from making false marketing claims. Additionally, the FDA posted warnings to consumers about the propensity of e-cigarettes to increase nicotine addiction and potentially be a gateway for conventional cigarette smoking among our youth.[9]

The FDA notes there have been no clinical studies proving the safety and efficacy of e-cigarettes, thus providing consumers with little knowledge of the dose of nicotine or other potential harmful chemicals and additives that are being inhaled.[9] As few as three studies have been conducted on e-cigarette's aerosol content. The FDA analyzed two leading brands of e-cigarettes and found diethylene glycol, a toxic chemical found in antifreeze, and nitrosamine, a known carcinogen.[9] In contrast, an e-cigarette manufacturer found e-cigarettes to be safer than conventional cigarettes.[6] A third study found no measurable levels of polyaromatic hydrocarbons in e-cigarettes.[10] These varied results indicate the need for more research on e-cigarettes. Additionally, there are no studies on rates of prolonged smoking abstinence using e-cigarettes.[11]

E-cigarettes are only one area advertising federally unregulated smoking-cessation aids. An increasing number of other novel products are beginning to appear in the United States and warrant further regulation and investigation into their safety and efficacy.

Dissolvable nicotine

In 2009, R.J. Reynolds launched the sale of Camel Orbs, Camel Sticks, and Camel Strips, three dissolvable nicotine products in the United States. R.J. Reynolds promotes these as tobacco products with the intention of being used where smoking is prohibited. Concerns are mounting, however, over the candy appearance of the packaging and product. A recent study in *Pediatrics* alludes to medical concerns that children may ingest these products under the pretense that they are candy, which may lead to unintentional nicotine poisonings.[12] The Virginia Foundation for Healthy Youth conducted a study among 728 youth and found that approximately 39% of the youth mistook Camel Orbs as mints or gum.[13] Camel Orbs contain 1 mg of nicotine per pellet and come in cinnamon and mint flavors. Camel



Art by Elise Pautler

Strips contain 0.6 mg nicotine per strip. Camel Sticks contain 3.1 mg of nicotine per stick.

Other novel nicotine-based products

A whole host of other unique and novel nicotine-based products (e.g., nicotine water, lollipops, gel, drinks, and rinse) are currently available to the public. The safety of these products is not monitored and may pose deleterious effects on an individual.

Recently introduced into the United States and sold at local drug stores is a product called Nicogel.[14] Nicogel is produced in the United Kingdom and is a tobacco-containing gel that is being marketed as a cigarette replacement. The product is dispensed from a 50 mL container, with single-use sachets, and rubbed into the skin for transdermal absorption of nicotine. Manufacturers report that each container is equivalent to 50 cigarettes.[14]

Nicotine lollipops, produced most commonly by compounding pharmacies, continue to be marketed despite FDA orders to halt sales. Pharmacies promote the lollipops as a nicotine-replacement quit aid that helps with cravings.[15]

Nicorinse is a product designed by a dentist with advertisement that the product removes smoke and tobacco residue in smokers' mouths and is an alternative way to quit smoking.[17]

Nicotine water, sold under the trade name NICOWATER, was removed from the market in 2002, by order of the FDA. The manufacturers advertised the nicotine-containing water as a smoking-cessation aid similar to the FDA-approved NRTs. The manufacturer since reformulated the product and circumvented the FDA regulations by marketing the product as a homeopathic remedy.[16] According to the manufacturers, each bottle contains 4 mg of nicotine.[18]

Media attention has brought the nicotine martini into the public eye. This martini, known as a nicotini, is an alcohol-based drink flavored with tobacco juice. Bars and restaurants are concocting their own version that, according to reports, is produced by steeping tobacco leaves in vodka and other liquor.[15] Bar owners state that they want their patrons to "stay in the bar when they have a need for a nicotine fix."[16]

Role of respiratory therapists

Respiratory therapists are front-line patient educators when it comes to tobacco-related issues. Respiratory therapists should be alert to the risks of tobacco smoking and nicotine intake and should understand the variable effects of nicotine, enabling them to assist patients by providing appropriate tobacco-dependence treatment information. Additionally, RTs can motivate and encourage patients to attempt cessation efforts and sustain them by providing sound advice and proven resources such as those offered by the AARC at www.aarc.org/advocacy/federal/smoking_cessation and the American Lung Association at http://breathehealthy.org/images/uploads/NicotineReplacementTherapy.pdf.

Respiratory therapists can also dispel myths about nicotine replacement therapies by either developing or providing accurate information such as that found on www.smokefree.gov/pubs/MythsaboutNRTFactSheet.pdf. For example: Myth: *The nicotine in cigarettes is the same as the nicotine found in nicotine replacement therapy products, so I'm just trading one addiction for another.*

> E-cigarettes and several other nicotine-laden products are untested by governmental regulatory agencies and they provide no evidence to support their claims of being smoking-cessation aids.

Not only should RTs working with adults be concerned, but also pediatric RTs need to be aware that children may be harmed. With respect to concerns related to unintentional nicotine poisonings, respiratory therapists working in the pediatric emergency room should be aware of signs and symptoms of nicotine overdose. Nicotine poisoning is atypical in the general use of tobacco products that are smoked or chewed as the user self limits consumption. However, novel nicotine-laden products with unassuming packaging places the innocent child at risk for nicotine overdose. Nicotine has an average half-life of two hours. A child who inadvertently consumes nicotine products can present with nausea and vomiting from as little as 1 mg of nicotine ingestion. With greater nicotine ingestion, a child may present with pallor, difficulty breathing, and seizures. Evaluation of patients exhibiting similar signs and symptoms should include a history of tobacco-free nicotine products that may be available in the household.

In summary, RTs should be vigilant of novel nicotine products that are becoming increasingly available on the market as the efficacy of consuming these products is uncertain. These products are untested by governmental regulatory agencies; thus, there exists no evidence to support their claims of being a smoking-cessation aid. Additionally, these nicotine-enhanced

(continued on page 64)

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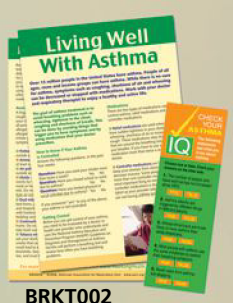

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Respiratory Care Professionals Can Make a Difference by

Volunteering with the Medical Reserve Corps

by Dagayla Burks

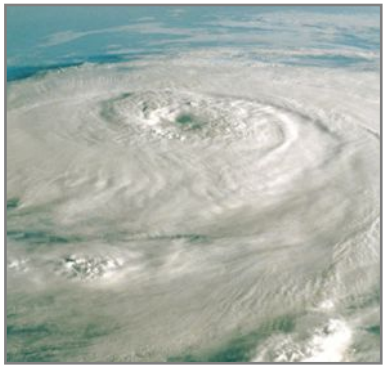
The Medical Reserve Corps (MRC) is a national network of local groups of volunteers who assist their communities in activities that promote and strengthen public health, emergency response, and community resiliency. More than 900 MRC units and 200,000 volunteers can be found in all 50 states and the District of Columbia, Guam, the U.S. Virgin Islands, Palau, American Samoa, and Puerto Rico. MRC volunteers consist of various medical and public health professionals, as well as others interested in improving the health and safety of their communities.

About the Author

Dagayla Burks is a research assistant for ICF International, working as a program associate for the Office of the Civilian Volunteer Medical Reserve Corps, Office of the Surgeon General, in Rockville, MD.

The MRC program was developed in 2002 as a way to pre-identify, screen, train, and organize volunteers to be able to support their local community's public health, preparedness, and response efforts. The role of the MRC is to augment the community's local public health and emergency response infrastructure. The program is sponsored by the Office of the U.S. Surgeon General, and MRC volunteers serve as ambassadors of public health for the Surgeon General. Volunteers have been actively involved in supporting past Surgeon General priorities, such as increasing health literacy, improving public health preparedness, eliminating health disparities, and promoting disease prevention. MRC units are currently active in promoting Surgeon

The key to the success of MRC units is their ability to be prepared to respond to any event that may impact their local community.



General Dr. Regina Benjamin's *Vision for a Healthy and Fit Nation* and First Lady Michelle Obama's *Let's Move!* campaign to combat childhood obesity.

MRC units' activities

The key to the success of MRC units is their ability to be prepared to respond to any event that may impact their local community. MRC units give volunteers the ability to train with local response partners through drills and real life exercise scenarios that may range from the simulation of an actual public health response such as a flu pandemic to an earthquake disaster exercise. Under the supervision of MRC units and their housing organizations, MRC volunteers are designated roles and assignments during an emergency that support local emergency responders, hospitals, health departments, and other community agencies. This basic preparedness knowledge also gives MRC volunteers the necessary tools to help their communities and families prepare for an emergency.

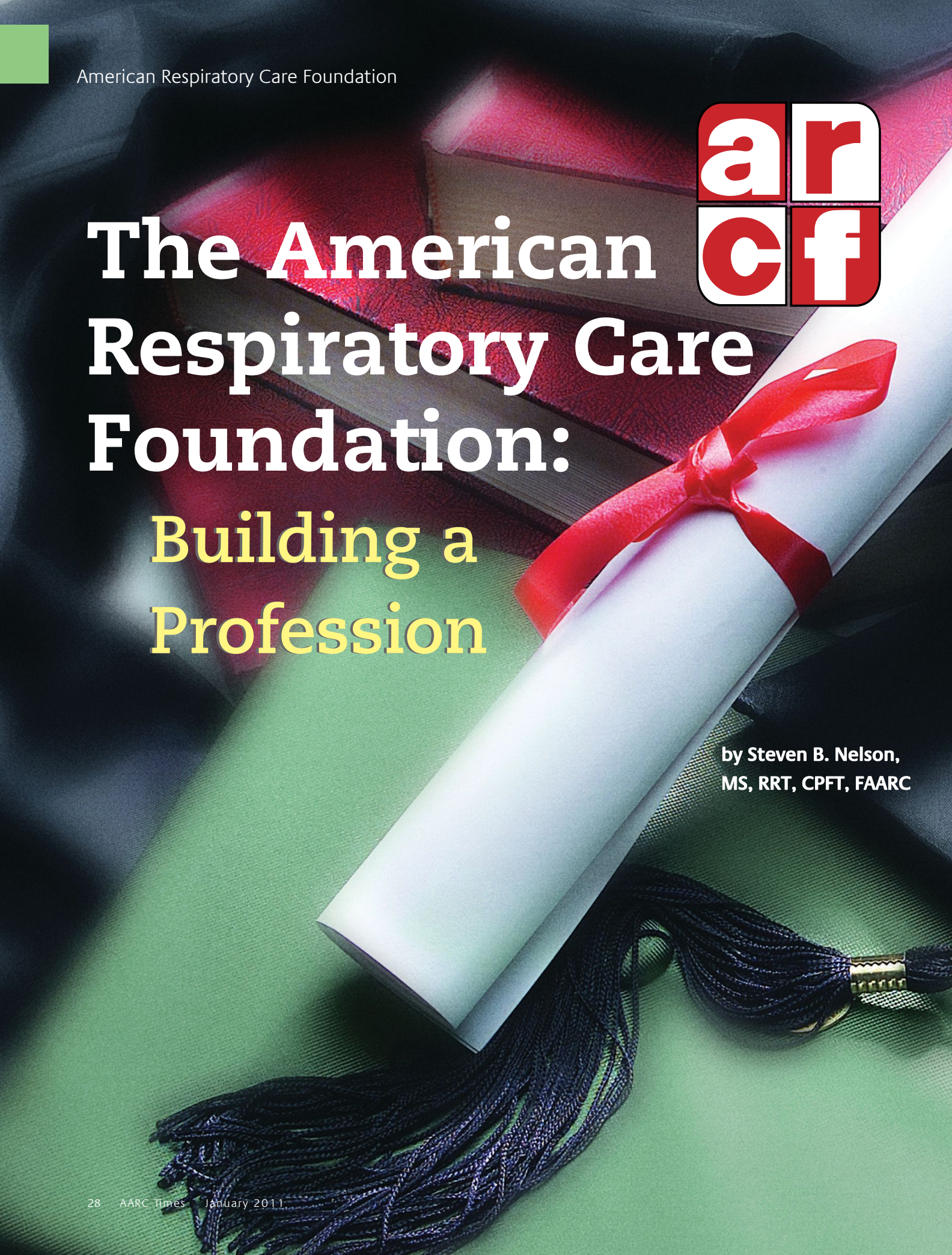
MRC units have demonstrated their ability to enhance the resiliency of their communities by assisting with response and recovery efforts to disasters such as this year's Gulf Coast Horizon Oil Spill, Hurricanes Ike and Gustav in 2008, the Southern California wildfires in 2007, and Hurricanes Katrina and Rita in 2005. However, MRC units' activities have not been solely devoted to planning and responding to natural disasters. Many MRC units also participate in initiatives that strengthen the overall public health of their community — such as health education and promotion, disease screening, and vaccination activities.

MRC units across the nation are involved in promoting public health in their communities that range from performing routine health screenings to responding to a public health emergency. This past year, many MRC units were involved in the 2009/2010 H1N1 influenza response where nearly 50,000 MRC volunteers were utilized in over 2,500 activities related to H1N1 influenza in 2009.

MRC and respiratory care professionals

As MRC volunteers, respiratory care professionals would be able to utilize their skills and abilities to treat and care for patients with special respiratory needs when an MRC unit is called to assist their community. Respiratory care professionals would also be able to share their knowledge and skills to help their local MRC unit prepare for and plan to provide respiratory care in an emergency or other time of need.

For more information on the MRC program and how you can become involved, please visit the MRC website at www.medicalreservecorps.gov or by email at MRCContact@hhs.gov. ■



The American Respiratory Care Foundation: Building a Profession

by Steven B. Nelson, MS, RRT, CPFT, FAARC

The application process for ARCF scholarships, grants, and fellowships is fully described on the Foundation website at www.arcfoundation.org/awards

In the last decade, the American Respiratory Care Foundation (ARCF) has spent just under $3 million supporting research, education, and charitable activities. These activities ranged from providing scholarships to new students in respiratory therapy schools to supporting seasoned veterans doing graduate research. The foundation supports Respiratory Care journal conferences that change the care provided at the bedside, and provides awards to Open Forum presenters with a new idea. The funds have supported asthma camps for hundreds of children and pulmonary rehabilitation for a single patient. Yet the vast majority of AARC members still don't quite know what the ARCF's red, white, and black logo represents.

For the first 20-plus years of its existence, the AARC was focused on establishing a formal system of education and credentialing for a profession that had its roots in on-the-job training. From those efforts came the organizations we know today as the Committee on Accreditation for Respiratory Care and the National Board for Respiratory Care.

By the late 1960s, Association leaders started to see the need for a third group — one that could not only advocate for education and scholarship in the profession, but also provide the funds needed to back it up. In 1974, that idea bore fruit with the formation of the American Respiratory Therapy Foundation — the organization we all know today as the American Respiratory Care Foundation.

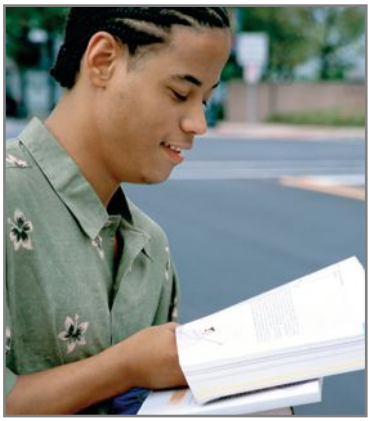
Scholarships

A large part of the ARCF's annual activity is related to scholarships for undergraduate students. "The ARCF was founded primarily for the purpose of awarding scholarships to enable bright students to enter the field and build the profession," says ARCF Board of Trustees Vice Chair Neil MacIntyre, MD, FAARC. The recipients are recognized by their program directors as having the potential to become future leaders.

Students who receive scholarships have been able to complete their education. Many have gone on to become leaders in the profession, paying back the assistance they received and excelling in areas ranging from department management, to respiratory care program development, to research into key modalities used in the profession.

Scholarships were initially established through endowments provided by respiratory therapists, physicians, and companies with an interest in seeing the profession grow.

About the Author
Steven B. Nelson, MS, RRT, CPFT, FAARC, is an associate executive director for the AARC in Irving, TX. He is also a trustee for the American Respiratory Care Foundation.



Research fellowships and grants

As the profession and the ARCF both grew, a need developed to fund advanced practitioners in the profession. Grants and fellowships have led to scientific work that has markedly improved our understanding of respiratory care and fostered clinical improvements at the bedside. "The Foundation believes that the only way to move the profession forward is by awarding grants and scholarships to clinicians who have the desire to do the research and write the papers that continue to ensure that respiratory care remains on the cutting edge," says ARCF Chair Michael T. Amato, MBA.

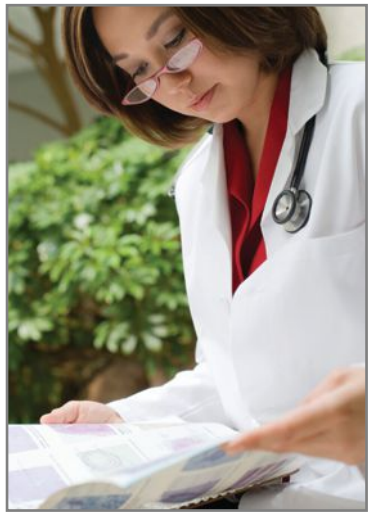
Elgloria Harrison, MS, RRT-NPS, AE-C, from the University of the District of Columbia, recently received a fellowship in recognition of the work she had done on educational interventions to manage asthma for inner city children. She notes that the fellowship allowed her to finish training to become a Certified Asthma Educator. "I have done a lot of work in pediatric asthma in my community; and since the award, I have been the "Subject Matter Expert" on two asthma grants here in the District of Columbia," says Harrison. She believes the ARCF has been a catalyst to research experts and novices alike.

Journal conferences

The foundation has sponsored Respiratory Care conferences since 1991. These state-of-the-art journal conferences tackle subjects important to clinicians working in the respiratory care profession, about which relevant published information available has been judged to be lacking, incomplete, or unacceptably biased.

Conference participants are selected based on their recognized expertise in the subject area. The conference chairs seek a wide diversity of backgrounds in credentials, jobs, gender, and geography. The authority of the publications that come out of these conferences is easily proven, being the most-cited issues of Respiratory Care. "I think when you look at the Journal Conferences, the significant end points are world-class content, tremendous articles for our peer-review journal, and in many cases, material that has been used by other medical societies and regulatory agencies globally to help set guidelines and standards for the way respiratory care is practiced," says Amato.

Some conferences, such as one on metered-dose and dry-powder inhalers, have resulted in updates to the AARC's Clinical Practice Guidelines, with a direct improvement in patient care.



Community grants

Recently, the ARCF has ventured outside of this core mission to touch the lives of respiratory patients through its Ventilator 5K competition.

There are many projects in communities that need a little help to get going. The "Vent 5K" races raise money for just such projects. Started four years ago, Vent 5K races are a way to gain recognition for the profession by pushing a ventilator over a 5K course in a public venue. These have been done in parks, around lakes, and in fitness centers. They have drawn news coverage that gives the racers a chance to talk about ventilators, lung disease, and the respiratory care profession. The participants raise money that is set aside to fund small projects.

One recipient, Teresa Volsko, MHHS, RRT, FAARC, used a community grant to supplement another grant in order to create a pilot project with the local Girl Scout Council. "The funding I received for an asthma education project was not sufficient to support the total budgetary needs for the project. The community grant filled that void and will enable our project to serve the local scouts," explains Volsko.

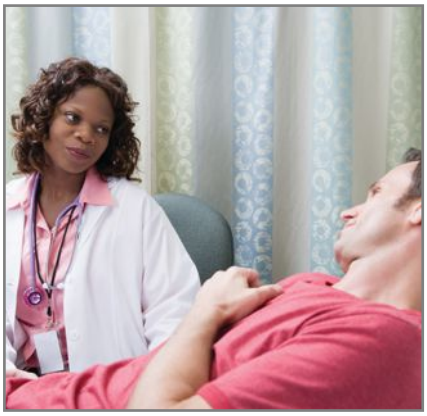
The ARCF is currently taking donations to support its mission.

Go here to see a new way to donate: www.arcfoundation.org/support

Educating clinicians and patients

Over the years, the ARCF has played a role in many other philanthropic efforts, as well. Through a partnership with the U.S. Environmental Protection Agency (EPA), the ARCF has been able to offer two asthma-related courses to respiratory professionals free of charge. "Our partnership with the EPA has meant that the Foundation has been in the position to provide the most current state of practice in the area of asthma to many clinicians who otherwise would not or could not garner the knowledge and skill set that they need to provide their patients with state-of-the-art care," notes Amato.

The ARCF's mission also includes health promotion and disease prevention for patients. The Tobacco-Free Lifestyle Roundtable recognized a need to create a tobacco-cessation guide that respiratory therapists could use to help hospitalized patients quit smoking. The Foundation sought funding to have the pocket guide printed and distributed, and the brochure became available through the ARCF website in 2010. Part of the funding will be used to evaluate and report the effectiveness of the guide.



International reach

In the late 1980s another ARCF mission was recognized. Respiratory care was beginning to develop in other countries and was being provided by health practitioners in other disciplines. In 1990, the International Fellowship Program began. "The globalization of the respiratory care profession is a growing reality, and both the AARC and the Foundation have taken on leadership roles," says Dr. MacIntyre. "The AARC launched the International Fellowship Program to encourage communication between experienced leadership in the AARC and developing respiratory care leaders around the world."

Since its inception, 135 participants with an interest in respiratory care from 54 countries have been international fellows. They visit respiratory care facilities in two host cities, providing a variety of experiences, and conclude the program with attendance at the AARC International Respiratory Congress. The participants network with colleagues from around the world and strategize on the best way to promote the development of a respiratory care profession in their own countries. AARC International Committee Chair John D. Hiser, MEd, RRT, CPFT, FAARC, points to the success of the program evident in the interviews the international fellows have provided at the end of their stays. See their impressions at www.arcfoundation.org/ international/ fellows/reflections/index.cfm.

The progress made by these professionals has been nothing short of remarkable. Thanks in part to the International Fellowship Program, respiratory care is now taking hold in nations worldwide. The greater interaction among respiratory therapists, physiotherapists, physicians, nurses, and other health care workers around the globe has also helped foster additional international efforts at the AARC, including the International Council for Respiratory Care and its International Education Recognition System.

The mark of a true profession

Thanks to the work of the ARCF, respiratory care has been able to extend its reach beyond the bedside out into the larger world of health care and into the lives of people living with lung disease. Dr. MacIntyre says that is the mark of a true profession: "A scientific profession is distinguished from a simple trade or occupation in that a profession encourages the development of innovations, adds to the scientific evidence base, nurtures future innovators and leaders, and provides important input into local and national policy decisions."

The ARCF has certainly fulfilled all of those goals over its 36-year history. ■

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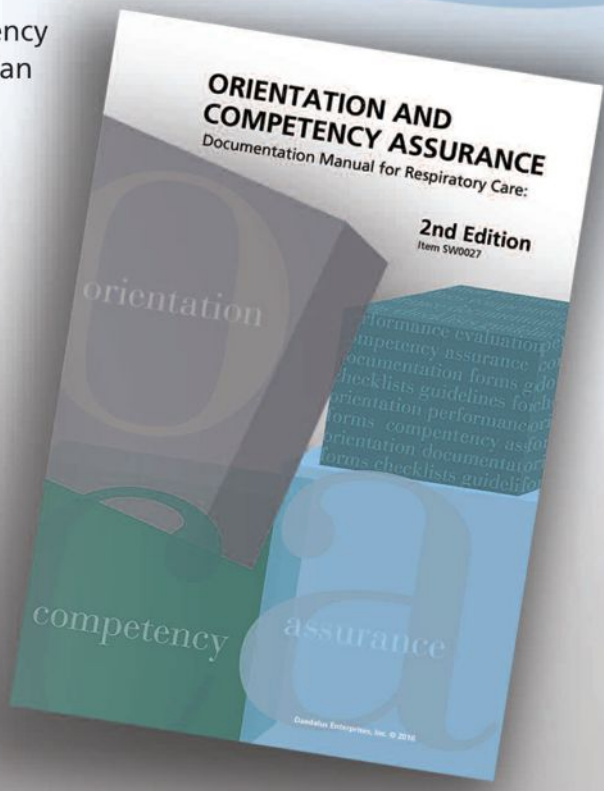

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High Performance Teams **Are a "Win" for Hospitals**

RTs are key players on teams designed to increase collaboration among health care providers

In 2009, the AARC joined five other leading organizations in founding the Hospital Care Collaborative, an initiative to improve teamwork in the nation's hospitals. Along with the American Association of Critical-Care Nurses, American Society of Health-System Pharmacists, Case Management Society of America, Society for Social Work Leadership in Health Care, and Society of Hospital Medicine, the Association agreed to work toward a new paradigm in hospitals wherein collaboration, patient-centered care, accountability, and information sharing would be the order of the day.

The Collaborative began by developing a list of 13 guiding principles to facilitate the achievement of those, then asked each group to start looking for high performance teams across the country that epitomize the objectives. The AARC put out a call to the membership for high performance teams involving respiratory therapists and received 27 submissions from across the country. Two of those teams — one from Forsyth Medical Center in Winston-Salem, NC, and another from Maury Regional Medical Center in Columbia, TN — were selected by the six founding organizations to be among seven top teams to present information about their programs to hospital CEOs, presidents, and other leaders from Collaborative-member organizations during a special forum held via remote connection in August of last year.

Now we're sharing those two teams with you — along with seven other teams on the AARC list that leaders believe represent excellence in team building. Take a look at what these teams are doing and consider how you could implement similar teams in your own facilities.

The Best of

The following two teams were among seven top teams selected by the six members of the Collaborative to present their programs to hospital executives last August.

Bringing the Unit to the Patient

Who:
Forsyth Medical Center

What:
Rapid Response Team

Where:
Winston-Salem, NC

Team members:
Critical care nurses and critical care RTs who are ACLS-certified, with hospitalists called in as needed.

Team objective:
To align the organization with the Institute for Healthcare Improvement goals and the 100,000 Lives Campaign by empowering clinicians to initiate an immediate response from qualified critical care staff when a patient's condition appears to deteriorate.

Why it was established:
Due to a bed shortage, many patients were being held in areas in which staff were unable to adequately monitor and care for deteriorating patients. Leaders decided if they couldn't bring the patient to the unit, they would bring the unit to the patient.

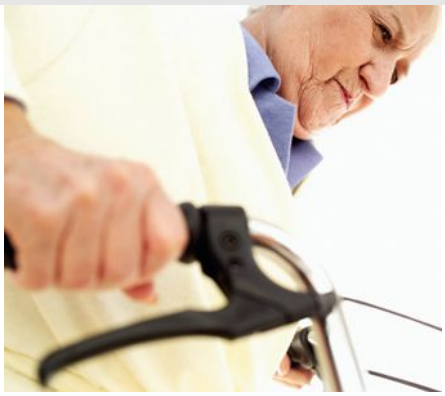
Who leads the way:
A special committee continually addresses barriers to performance and evaluates the effectiveness of the team, but bedside leadership is shared among the team members.

Organizational support:
Administrative team, respiratory leadership, nursing leadership, medical staff, and operational improvement.

continued on page 36

Rapid Response Team at Forsyth Medical Center in Winston-Salem, NC

THE BEST



Getting Patients Up and Moving

Who:
Maury Regional Medical Center

What:
Progressive Upright Mobility (PUM) team

Where:
Columbia, TN

Team members:
Nurses, respiratory therapists, physical therapists, critical care nurse practitioners, intensivists, and members of the lift team.

Team objective:
To improve clinical outcomes by getting critical care patients up and moving.

Why it was established:
The critical care stay in itself can decrease a patient's physical conditioning level in a very short period of time, leading to cardiovascular deconditioning, respiratory infections, skin breakdown, renal complications, gastrointestinal complications, and neurological complications. One day of strict bed rest requires two weeks of reconditioning to return a patient back to baseline. The importance of early mobility is evident.

Who leads the way:
Team development was led by the service line director of orthopedic/neuro/post-op services with input from the critical care/pulmonologist group, critical care assistant nurse manager, respiratory care director, physical therapy supervisor, a physical therapist, supervisor of the lift team, and several front-line nursing and RT staff. The protocol is initiated with an order from the physician or nurse practitioner in charge of the patient's care.

Organizational support:
Physicians and senior leadership.

continued on page 36

Members of Maury Regional's Progressive Upright Mobility Team

continued from page 34

Forsyth Medical Center
Bringing the Unit to the Patient

Who does what:
Team members have all the responsibilities they would normally have in their working unit, along with the ability to access and implement all emergency orders. Respiratory therapists are either trained in intubation or are in training to develop the skill and can implement any order covered under the respiratory care protocol. If indicated, team members may also participate in the transport of the patient to a higher level of care.

Training/Development:
RTs and nurses underwent several weeks of training and education prior to the implementation of the rapid response team.

Barriers:
Staff in non-critical care areas were initially reluctant to accept the team, but ongoing training and observation of the team at work helped to alleviate those fears. The length of time spent at the bedside and funding for the program have also presented challenges. At the outset, the team spent an average of 43 minutes per call, climbing to an average of 65 minutes. As of March 2010, the average time at the bedside had stabilized at 40 minutes per call. Part of the increased bedside time came with the implementation of the stroke rapid response team, which increased assessment and documentation times. While 2.5 positions have been budgeted for the team, existing staff in the critical care units must also be used to cover the entire 961-bed facility. Greater funding would alleviate concerns about leaving the units shorthanded during a call.

Measures of success:
Rapid response team calls increased from 43 in March of 2009 to 80 in March of 2010, and the transfer rate to critical care went from 63% to 39%. The number of code blue events in non-critical care units — defined as a cardiac arrest only, not a respiratory arrest — declined from six to three. Overall, use of the team increased by 46%, transfers to critical care decreased by 62%, and the number of code events in the non-critical care units dropped by 50%.

Going forward:
The project is now extending into other facilities within the Novant Health organization. ■

continued from page 35

Maury Regional Medical Center
Getting Patients Up and Moving

Who does what:
Nurses drive the PUM process by gradually raising the patient's head of bed. Physical therapists assess the patient's strength and ability to mobilize. Respiratory therapists are in charge of the airway throughout the mobility process. They place the patient on a portable ventilator and monitor vital signs when the patient is ready to ambulate outside of the room. The lift team provides lifting support.

Training/Development:
Team members met to develop the protocol, and all the staff impacted by its implementation were trained in the process.

Barriers:
Implementing the protocol on the weekend has been a challenge due to staffing issues and the dedication of staff to the process. These issues continue to be addressed by the team as they arise.

Measures of success:
Compared to the six months before implementation, ICU length of stay during the first five months after implementation dropped by 1.5 days. For ventilator patients, the mortality deviation rate went from 9.7 to 3.2, representing 13 lives saved. The morbid complications deviation rate went from 14.3 to 9.2. These clinical outcomes are all based on comparisons of the top 15% of best practice hospitals across the United States. Financial savings were about $3,000 per ventilator patient, resulting in a total savings for 201 ventilator patients of $610,635. The protocol also saved an average of 8.4 days in recovery time per patient.

Going forward:
The physical therapy and nursing departments have now developed a mobility maintenance protocol to help keep patients moving after they are transferred to the floors. ■

The Best of THE REST

The following teams were selected for their innovation and applicability to other facilities around the country.

Very Special Deliveries

Who:
Children's Hospital of Philadelphia

What:
The Special Delivery Unit (SDU)

Where:
Philadelphia, PA

Team members:
Fetal surgeons, neonatologists, anesthesia, obstetrics, cardiac, nursing, respiratory care services, and engineers.

Team objective:
To plan the physical layout and train team members for the opening of a new special delivery unit for mothers and children who require pre- and postnatal interventions for birth defects.

Why it was established:
Locating this special unit in the children's hospital would improve the care of newborns with known birth defects.

Who leads the way:
Leadership is shared among the multidisciplinary team members. The core team in the SDU consists of the medical director and the assigned SDU physician, clinical nurse specialist, and NICU respiratory clinical specialist, along with an anesthesia clinician.

Special Delivery Unit team at Children's Hospital of Philadelphia

Very Special Deliveries

Organizational support:
The board of directors, hospital administration, and medical staff working for the Center for Fetal and Diagnostic Testing.

Who does what:
Physicians worked on consensus guidelines for various anomalies; and respiratory therapists and nurses worked on teamwork, equipment/supply, and organization of the facility.

Training/Development:
Since different team members had different levels of experience in the delivery room, training encompassed both didactic instruction and simulation training. Each discipline shared knowledge from its area of specialization, and company representatives provided in-services on the equipment. They developed a standard communication system and adapted it to the unique needs of the team.

Barriers:
One challenge the team faced was the initial lack of experience among the health care providers at this children's hospital that included delivery room resuscitation of infants who have known birth defects. Equipment such as the panda resuscitation bed and transport system were new to the staff. The communication system used to share reports, coverage, and reporting systems presented another barrier.

Measures of success:
The design of the building and the education of the personnel were both completed and the unit opened in June of 2008. The team is measuring its success using questionnaires, birth data, graphs, simulation training, and reunion parties.

Going forward:
The team meets every Friday to discuss and plan for new opportunities, and it continues to address challenges and discuss ways to improve and utilize recertification simulation training. ■

Lowering Length of Stay and Costs for COPD Patients

Who:
St. Luke's Episcopal Hospital

What:
The Pulmonary Lean Team

Where:
Houston, TX

Team members:
Respiratory therapists, nurses, social workers, and pharmacists.

Team objective:
To provide alternatives to ICU care for COPD patients.

Why it was established:
The hospital wanted to address length of stay (LOS) and cost concerns for its COPD patients, specifically those who fall into DRGs 88 and 89, through the development of an acute pulmonary unit (APU).

Who leads the way:
The respiratory care department director and clinical nurse specialist.

Organizational support:
Hospital administrative staff.

Who does what:

Nursing and respiratory care are responsible for keeping the patient's care on track according to the care plan. Social workers start planning for discharge needs upon patient admission. Pharmacists review and suggest medications for patients who have other needs not met by the order set. The team also resulted in the development of a new role for the respiratory therapist as a respiratory clinical specialist (RCS). The RCS educates patients and coordinates their care, as well as follows up with patients by phone after they leave the hospital to ensure they are receiving the help and support they need.

Training:

Training sessions included lectures by nursing, respiratory care, pharmacy, and social workers. The care plan was finalized in about six months, and another two months were spent identifying the designated APUs and disseminating the information to the pulmonary physicians, emergency department, and bed control.

Barriers:

Getting patients admitted to the APUs. If there are no beds available on the units, patients must be admitted to other units where they can still be followed by the RCS, but with the possibility of less efficiency.

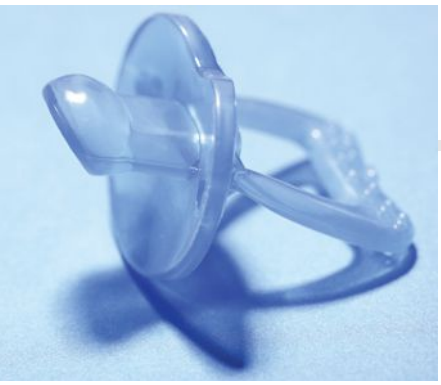
Measures of success:

In a comparison of DRG 88 patients seen before and after the program went into operation, LOS decreased by 9% in non-ICU patients and by 27% in ICU patients, and average net margin/care improved by 33%. Readmission rates remained unchanged.

Going forward:

The team continues to improve and expand the services of the pulmonary units. ■

Pulmonary Lean Team from St. Luke's Episcopal Hospital in Houston, TX



Improving Pediatric Airway Safety

Who:
Children's Hospital of Philadelphia

What:
NEAR-4-Kids Pediatric Emergency Airway Registry

Where:
Philadelphia, PA

Team members:
Nursing, respiratory care, critical care medicine, residency trainees, nurse practitioners, and research coordinators.

Team objective:
To create a pediatric tool comparable to the National Emergency Airway Registry.

Why it was established:
Emergency airway care is a procedure with moderate volume and risk for harm.

Who leads the way:
Leadership is shared among the team members.

Organizational support:
Critical care medicine and respiratory care services.

Who does what:
Team members share in patient preparation and documentation; physicians are responsible for tube placement. RTs analyze team dynamics and trigger team debriefing after tube placement.

Training:
Application of "just in time" simulation training for airway placement.

Barriers:
No barriers were encountered.

Measures of success:
Clinical outcomes are being measured, with plans to examine cultural and operational measures as well. Success is being measured by successful tube placement, absence of adverse events including tracheal intubation-associated events, and full team participation and engagement.

Going forward:
Plans are underway for multicenter participation, the development of additional indicators for culture and communication, RC training to assist therapists in leading debriefing discussions and evaluating team dynamics, and an evaluation of the feasibility of identifying a benchmark for successful pediatric advanced airway management. ■

High Performance Team members at Vail Valley Medical Center

Smoothing the Way for Home Oxygen Patients

Who:
Vail Valley Medical Center

What:
Vail Valley Medical Center
Oxygen Kaizen Event

Where:
Vail, CO

Team members:
Registered nurses, respiratory therapist, patient care technician, RN discharge planner, RN clinical IT, physical therapist, RN management, VP of quality, and an outside consultant.

Team objective:
To create an efficient and seamless process for discharging patients home with oxygen by using the medical center's "Lean" initiative.

Why it was established:
An assessment determined that there were many problems related to discharging patients on home oxygen. Home oxygen delayed discharge on many occasions, and the process also caused staff and physician frustration.

Who leads the way:
The VP-level team champion.

Organizational support:
The executive team.

Who does what:
The event champion provided support to the team and participated in every aspect of the weeklong effort. A team leader selected the team members, worked with the event champion on the scope and objectives of the team, and assisted the team during the development process. Team members brought their clinical expertise to bear on the process and provided a reality check about the current state of affairs.

Training/Development:
The team was able to determine that many of the problems associated with discharging a patient home on oxygen were related to the lack of a weaning and titration process during admission. The team worked with stakeholders and members of the medical staff to create a protocol for early detection of oxygen needs, early intervention with advanced therapies, and overall weaning.

Barriers:
The organization was newly embarking on Lean at the time, and many staff felt this was an initiative to cut jobs. The team initially grappled with these concerns as well. However, as the week progressed and the team interacted with the executive team, these fears subsided.

Measures of success:
The ultimate goals are to have 45% of all patients on the pulmonary care unit (PCU) discharged home prior to 11 a.m., 67% of PCU patients discharged with home oxygen to home prior to 11 a.m., a Four Star Avatar rating for patient satisfaction related to the discharge process, and 100% room air saturation documentation available to all disciplines after charting. The room air saturation is now 100% available to all disciplines once documented. The percentage of patients discharged with home oxygen prior to 11 a.m. has increased from 23% to 41%. The overall percentage of patients discharged prior to 11 a.m. has increased from 23% to 37%.

Going forward:
The team continues to meet on a monthly basis and round on the units at least once a month, joined once a quarter by the executive sponsor. Metrics are being reported at 60 and 90 days. The team will coach other staff new to the process and look for ways to improve their outcomes on an ongoing basis. ■

Asthma Clinic Meets Unmet Needs

Team members from St. Alexius Medical Center in Bismarck, ND

Who:
St. Alexius Medical Center

What:
St. Alexius Regional Children's Asthma Clinic

Where:
Bismarck, ND

Team members:
Pulmonary physician, pediatric physician, respiratory therapists, pharmacists, and nurses. All patient education staff members hold the AE-C credential.

Team objective:
To decrease asthma symptoms and severity of symptoms and enable patients to have optimal lung function on as little medication as possible through the establishment of a once-a-month asthma clinic.

Why it was established:
Results for North Dakota children under the age of 18 show 9.3% have asthma and 15.4% have had an asthma attack within the last 12 months.

Who leads the way:
The clinic operates in a team atmosphere.

Organizational support:
The clinic is funded by a grant from North Dakota's Children's Special Health Services (CSHS) and meets a St. Alexius Medical Center Administrative Council goal to explore ways to expand respiratory therapy services to the outpatient setting. Thanks to the grant, services are offered free of charge.

Who does what:
The physician takes the medical history and performs the physical examination. The respiratory therapist conducts pulmonary function testing and provides asthma education and the asthma action plan, collects outcomes data and patient/ family satisfaction data, schedules clinic appointments, and performs home assessments. The pharmacist provides medication education. The nurse handles influenza vaccinations and the completion of growth charts. The patient sees all of the team members during the visit; and at the end of the clinic day, the team meets to discuss each patient, classify the child's disease according to the National Institute of Health's guidelines, discuss the plan of care, and decide whether further recommendations are necessary. An educational DVD mailed to patients prior to their appointment helps to keep clinic appointments to a reasonable length.

Training/Development:
The asthma clinic applies six components of disease management to the pediatric asthma population: population identification; evidence-based practice guidelines; collaborative practice models that include physician and support-service providers; patient self-management education; process and outcomes measurement, evaluation, and management; and a routine reporting/feedback loop.

Barriers:
Since the clinic is limited by grant funding, it has been difficult to reach all patients in need or explore new avenues of asthma care, such as exhaled nitric oxide and impulse oscillometry. Also, the lack of nationally reported indicators for quality of life has made it difficult to convince third-party payers of the value of the clinic.

Measures of success:
Measures include, but are not limited to, the number of patients seen in new and follow-up visits, classification of asthma severity, third-party payer information, number of patients receiving asthma action plans, and pulmonary function data.

Going forward:
The current contract with CSHS ends in June, at which time the clinic may explore the possibility of fee-for-service reimbursement to expand the number of patients served. ■

Using Respiratory Therapists in a Primary Care Model

Who:
Crouse Hospital

What:
Crouse Lung Partners

Where:
Syracuse, NY

Team members:
Respiratory care medical director, administrative director, managers, and supervisors; staff respiratory therapists; nurses; educational services; pharmacy; information technology; nutritional services; physical therapy; hospitalist, psychiatric, and pulmonary physicians; care coordination; senior services; heart failure transition coaches; and a master's level quality improvement analyst.

Team objective:
The Lung Partners team was formed to develop an inpatient primary respiratory care model that would bring traditional disease management responsibilities into the hospital setting.

Why it was established:
COPD patients were mainly being cared for by hospitalists; and with each readmission, the hospitalist would likely be different. The discharge planning process was also fragmented. It was felt that respiratory therapists could play a key role in managing the burden of COPD in a primary care model that followed the National Asthma Education and Prevention Program's asthma guidelines.

The Lung Partners Team
from Crouse Hospital in Syracuse, NY

Who leads the way:
A professor in the Whitman School of Management at Syracuse University, who is implementing it as a major Six Sigma project.

Organizational support:
Syracuse University and Crouse Hospital administration.

Who does what:
Respiratory therapists are the transition coaches for COPD patients. The transition coach administers the patient's treatments, provides needed education, and performs assessments for COPD-related problems (anxiety, depression, mobility, nutritional issues, etc.) to address those problems. The coach also helps to coordinate the discharge plan, calls the patient at home in the first 24 hours, and visits the patient at home in the first 72 hours. Other team members supported the training and development of the therapists to take on this role and provided infrastructure support to the program as a whole.

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Taking a Sedation Holiday

Who:
Maury Regional Medical Center

What:
Spontaneous Awakening Trial/
Spontaneous Breathing Trial (SAT/SBT)

Where:
Columbia, TN

Team members:
Respiratory therapists, nurses, and critical care physicians.

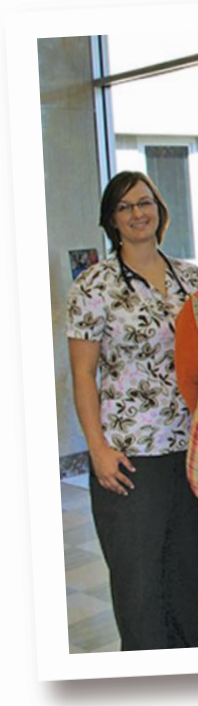
Team objective:
To help ventilator patients get off the ventilator sooner.

Why it was established:
Due to increased risk of infection, the need was seen to wean ventilator patients at the earliest possible moment.

Who leads the way:
The team was initiated and is led by critical care physicians.

Organizational support:
Physicians and senior leadership.

Who does what:
Pulmonary/critical care physicians actively encourage all patients to be weaned from sedation and mechanical ventilation as quickly as possible and base their decision for extubation on the recommendations of the other team members. The nurse assesses the patient each morning at 7:30 and initiates the protocol based on established criteria. Patients who pass the SAT screening will have sedation turned off by 8 a.m. Patients are then monitored by the nurse for tolerance to sedation reduction and results are communicated to the respiratory therapist. Once the patient meets the established criteria, the RT will place him/her on a ventilator rate of 0 with a pressure support of 5 cm H_2O and PEEP of 5 cm H_2O. The RT and nurse closely monitor the patient. If he/she does not tolerate the SBT, the patient is placed back on the previous ventilator settings and the physician notified. These patients are reassessed in 24 hours for the SAT/SBT protocol. If the patient meets the criteria for continuation of the SBT, the respiratory therapist will perform weaning parameters and, following approximately one hour of acceptable spontaneous



Common Principles for the **Hospital Care**

1. The Hospital Care Collaborative (HCC) believes that health care is a team effort with respect and recognition for the knowledge, talent, and professionalism of all team members.
2. It supports clear delineation of team roles and responsibilities with an emphasis on a collaborative and non-hierarchical model.
3. It believes in patient-centered care, rather than provider-centered care, and that the health care team members should involve the patient, family, and caregiver in developing care plans and goals of care.
4. The HCC holds that collaboration of the health care team can lead to improved systems and processes that provide care more efficiently and result in better patient outcomes. Examples include strategies for implementation, improved workflow, and the utilization of evidence-based processes.
5. All members of the team within their licensure and scope of practice have a role to play in establishing organizational policy, and directing and evaluating clinical care.
6. In a system that involves many team members, all health professionals should work to create safe care transitions and handoffs within the hospitalization and post-hospitalization episodes of care.
7. All team members must be as proficient in communication skills as in clinical skills.
8. Appropriate capacity and staffing of the entire team is a requirement for providing the best care.
9. All team members are accountable for their individual performance as a health care provider, as well as the performance of the entire team. While this may be defined by statute or regulation, this also relies on the clinical judgment of each member of the team.

SAT/SBT team from Maury Regional Medical Center

breathing, obtain an arterial blood gas sample. The physician is updated on the patient's condition and the test results. If all criteria are met, the team recommends extubation to the physician.

Training/Development:

In-depth education of both nurses and RTs occurred prior to implementing the protocol.

Barriers:

Initial reluctance to the rapid decrease in sedation and ventilator settings, which declined once staff observed the positive effects of the protocol, along with some communication problems between shifts that were resolved with re-education.

Measures of success:

A comparison of 131 ventilator patients on the SAT/SBT protocol (Group 1) to 118 ventilator patients not on the protocol (Group 2) found the critical care LOS deviation was 7.2 days for Group 1 versus 11.8 days for Group 2. The mean ventilator days for Group 1 was 6.0 compared to 7.1, and the geometric cost deviation (in $1,000) was 6.2 versus 7.0.

Going forward:

The team will continue to employ the SAT/SBT protocol in the critical care units. ■

Collaborative

10. The HCC understands that to improve quality of care, standards and measurement of performance are important. The measurement should be of the outcomes of the team rather than of any individual member of the team.

11. To provide the best care possible, appropriate information must be readily available to all team members, at the right point of decision making, and in a format that allows for ongoing updating and communication to the team.

12. The current undergraduate and postgraduate professional education of team members is inadequate to promote true team functions. The HCC calls on the training institutions for health professionals to adopt new curricula and experiential models that foster the competencies and the culture that support team-based care. It also calls on the professional associations to likewise function in a team-based manner and develop creative approaches to "teaching" the professionals they represent, as well as modeling for other health care professionals, the skills to be a functioning member of a health care team. Professional associations should foster research that demonstrates the effectiveness of team-provided care.

13. The HCC recognizes that today's hospital cultures do not foster true teams of health care professionals. It calls on all stakeholders (e.g., payers, providers, administrators, patients) to work together to create a new hospital culture that nurtures and rewards high-performing teams. ■

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Crouse Hospital
Using Respiratory Therapists in a Primary Care Model

Training/Development:
Respiratory therapists earmarked as transition coaches received training in a wide variety of areas in order to fulfill their responsibilities.

Barriers:
Since the respiratory therapy department is paper based and financial constraints prohibited the acquisition of a commercially available information system to manage the department, the team worked with the information technology department to build Lung Partners into the mainframe system and develop a clinical data management process to support the primary RC function. Relative value units (RVUs) also had to be defined and a productivity model based on these RVUs developed. Scheduling was also a challenge because RTs now have a patient load, and their patients are on different floors. To be compliant with the timing constraints of medication delivery times, a new scheduling process had to be developed to allow the treatment time to be individualized and married to the workflow.

Measures of success:
Metrics include LOS, cost per case, 30-day readmission rates, medication error rates, need for stat treatment rates, patient satisfaction, RT satisfaction, functionality as measured by the SF-36, and timeliness of treatments.

Going forward:
The team hopes to continue working together to model a successful disease management program and to continue its relationship with the Whitman School of Management at Syracuse University. ■

Marketplace

Featuring information on products and equipment from manufacturers

▶ Press releases and photos on new products are welcome. Send to Marsha Cathcart, *AARC Times* editor, at cathcart@aarc.org.

Industry Watch

Discovery Labs receives orphan designation for surfactant CF treatment

According to Discovery Laboratories Inc., the FDA's Office of Orphan Products Development has granted orphan drug designation to the company's KL4 surfactant for the treatment of cystic fibrosis. Orphan designation provides for up to seven years of U.S. market drug product exclusivity for the designated indication following marketing authorization.

Discovery Labs' COO Dr. Thomas F. Miller notes, "Previous preclinical and exploratory clinical studies suggest that surfactant may improve mucociliary clearance, thereby potentially preventing further compromise of lung function. Our preclinical and recent clinical experience suggests that CF may be a viable therapeutic target for our aerosolized KL4 surfactant technology."

Joint Commission center establishes leadership council

The Joint Commission Center for Transforming Healthcare has established a Leadership Advisory Council to guide the progress of the center as it develops solutions to improve health care quality and patient safety. The council will meet three times a year and includes executives from among the center's major sponsors and CEOs representing participating hospitals.

The members will use a systematic approach to analyze specific breakdowns in care, discover their underlying causes, and develop targeted solutions. Center projects include hand hygiene, wrong-site surgery, hand-off communications, and the reduction of surgical site infections following colorectal surgery. Future projects are expected to focus on preventable hospitalizations, medication errors, and other aspects of infection control.

Pharmaxis presents data on CF drug

Pharmaxis recently presented the results of pooled data from two large-scale six month Phase III trials of Bronchitol (inhaled mannitol) in people with CF. Additional results from the second trial were also released to supplement the top-line results reported in June of last year. "The number of exacerbations in the two studies was fairly low, reflecting the aggressive treatment with antibiotics that is now common practice in the clinic," says Pharmaxis CEO Dr. Alan Robertson. "Despite this, Bronchitol produced a clinically relevant reduction in exacerbations in patients completing the study, and together with recent data showed sustained benefit in lung function out beyond 18 months."

In other news, the company announced it has received FDA approval to market its ARIDOL™ (mannitol inhalation powder) Bronchial Challenge Test Kit.

Cleveland Clinic teams up with Covidien to develop Risk Stratification Index

Working with Covidien, Cleveland Clinic researchers have developed a Risk Stratification Index they believe will help patients, regulators, and hospitals compare patient outcomes and quality of care. The tool was developed and tested using 35 million CMS records, and validity was confirmed by applying it to more than 100,000 Cleveland Clinic records. The system is statistically stable to as few as 5,000 patients, making it useful for small as well as large hospitals, and hospitals can also adjust for their patients' baseline level of illness and the risk associated with various procedures using only standard billing records, thus permitting outcomes such as mortality to be fairly compared among hospitals. The tool is available in the public domain to any hospital that would like to use it.

Novartis drug linked to reduced mortality in CF patients with common infection

A new analysis of data from more than 12,000 people with CF and *Pseudomonas aeruginosa* lung infection in the Cystic Fibrosis Foundation's Patient Registry found the use of Novartis' TOBI® (Tobramycin Inhalation Solution USP) was associated with a 21% reduction in mortality in the following year. The finding held true even

after the results were adjusted to take into account CF disease severity and use of other CF treatments.

Inspire Pharmaceuticals presents positive results from CF drug studies

Inspire Pharmaceuticals, Inc. recently presented data on denufosol tetrasodium, an investigational therapy for CF. Data from TIGER-1, Inspire's first Phase III clinical trial with denufosol (a novel inhaled ion channel regulator), suggest that denufosol has the potential to benefit adolescent patients and those on minimal concomitant therapies. Additionally, Inspire's research suggests that denufosol inhibits sodium absorption, stimulates chloride secretion, and has the potential to target the small airways of the lungs where CF lung disease begins.

Invacare sponsors bike trip to raise awareness of COPD

Invacare Corporation sponsored a bicycle expedition to raise awareness of COPD and inspire oxygen users to live active lives last fall. Cyclist Mark Junge used the company's XPO_2™ Portable Oxygen Concentrator and $SOLO_2$® Transportable Oxygen Concentrator on a 792-mile trip that began in Charleston, SC, in early October and ended up in Key West, FL, in mid-November. A retired historian, writer, and photographer from Cheyenne, WY, Junge has blood clots in his lungs that cause him to be oxygen-dependent. He uses supplementary oxygen daily to maintain his active lifestyle. This was his sixth bike trip to raise awareness of COPD.

Newport Medical Instruments receives government contract

HHS's Biomedical Advanced Research and Development Authority has awarded a $6.7 million contract to Newport Medical Instruments for the development of domestically manufactured, low-cost, user-friendly, and flexible next-generation ventilators that can be used to provide respiratory support for large numbers of severely ill patients in the event of a severe influenza pandemic or other public health emergency. The contract calls for the ventilators to be priced at less than $3,000 each.

United Business Media acquires Canon Communications

United Business Media has acquired Canon Communications, publisher of 24 industry magazines and the producer of 45 websites and more than 100 e-newsletters pertaining largely to the medical device design and manufacturing and electronics engineering markets. The company produces more than 40 tradeshows in the U.S., Asia, and Europe every year as well.

Teva announces new study results for asthma drug

Teva Pharmaceutical Industries Ltd. recently announced the publication of results from a real-life observational study of the General Practice Research Database (GPRD). It revealed that asthma patients treated with QVAR® (beclomethasone dipropionate HFA), either as initial therapy or with an increase in dose, had a similar or better chance of achieving asthma control as patients who were treated with fluticasone propionate. Asthma control was also achieved at lower doses in the QVAR population versus the fluticasone propionate population. The findings were published in the September issue of the *Journal of Allergy and Clinical Immunology*.

Omni Bio Pharmaceutical begins AAT trial in type 1 diabetics

According to Omni Bio Pharmaceutical, Inc., the first patient has been infused in its FDA-cleared Phase I/II human clinical trial of alpha-1 antitrypsin (AAT) in recently diagnosed type 1 diabetics. The trial is evaluating the potential of AAT to halt or reduce the deterioration of islet beta cells that causes type 1 diabetes. AAT is an FDA-approved, off-patent drug with an almost 20-year safety track record as an approved treatment for emphysema in AAT-deficient patients.

Provista Life Sciences, Radient Pharmaceuticals, announce lung cancer test results

Provista Life Sciences and Radient Pharmaceuticals Corporation have announced validation study results of a blood test for early detection of lung cancer. Data generated by the study, which included men and women between 20–76 years of age, proved consistent with previous findings and produced positive clinical performance marks of 87% sensitivity, 95% specificity, and an ROC Accuracy of 0.97. The study will serve as the cornerstone to Provista's efforts to introduce a new lung cancer detection assay branded LC Sentinel™ to market. The company says it expects to seek FDA registration for LC Sentinel this year.

Brief submissions and photos for this column may be sent to Marsha Cathcart, *AARC Times* editor, at cathcart@aarc.org. ■

RC Currents

IN THE NEWS

RC Week 2010 Was a Big Hit Across the Country

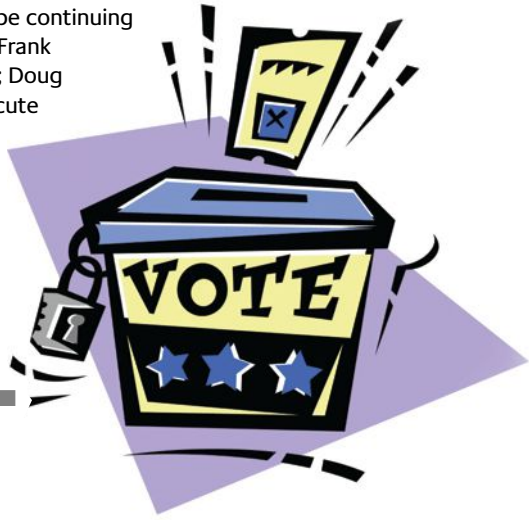
AARC members celebrated National Respiratory Care Week in late October. From hosting luncheons and dinners honoring RTs, to organizing in-services to provide much-needed education to staff and colleagues, to sponsoring events to raise awareness of lung health, your colleagues rose to the occasion and made sure RC Week 2010 was a big success. The photos running along the bottom of these pages tell the story. Take a look at the proud members of your profession and how they made the most of our national week. ■

AARC Members Choose New Leaders

AARC elections concluded in early November, and the following will be joining incoming AARC President Karen Stewart, MSc, RRT, FAARC, in Association leadership this year: George W. Gaebler, MSEd, RRT, FAARC, vice president for external affairs; Susan Rinaldo-Gallo, MEd, RRT, FAARC, vice president for internal affairs; Linda I. Van Scoder, EdD, RRT, FAARC, secretary-treasurer. The directors-at-large are Denise Johnson, BS, RRT; Camden J. McLaughlin, BS, RRT, FAARC; and Harold Frederick (Fred) Hill, Jr., MA, RRT.

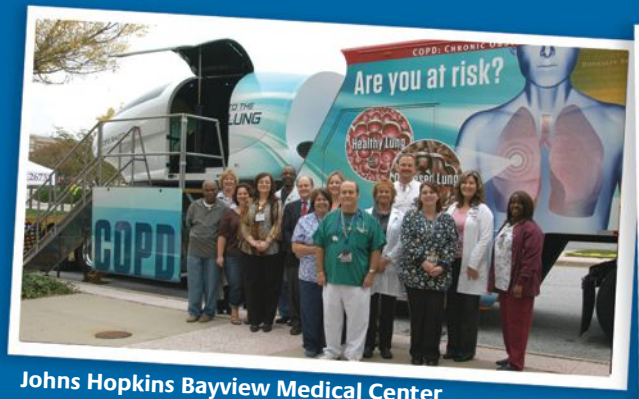
They will be joining those directors who will be continuing or beginning to serve out their terms. They are: Frank Salvatore, BS, RRT, FAARC; Debbie Fox, MBA, RRT; Doug McIntyre, RRT; Michael Hewitt, RRT-NPS (Adult Acute Care), Tony Stigall, MBA, RRT, RPSGT (Sleep); Greg Spratt, RRT, CPFT (Home Care); and Lynda Goodfellow, EdD, RRT, FAARC (Education).

Five Specialty Sections also held elections this year. Elected were: Adult Acute Care, Keith D. Lamb, RCP, RRT; Diagnostics, Matthew J. O'Brien, BA, RRT, RPFT; Education, Joseph G. Sorbello, MSEd, RRT; Management, Bill Cohagen, BA, RRT, FAARC, and Neonatal-Pediatrics, Cynthia C. White, BA, RRT-NPS, AE-C. ■



RC WEEK 2010

AARC members celebrated big last October, and we have the pictures to prove it!



Johns Hopkins Bayview Medical Center, Baltimore, MD

Forrest Bird Halloween Party

Education Section Call for Abstracts for Summer Meetings

The 2011 AARC Summer Forum, scheduled for July 18–20 (Monday–Wednesday) in Vail, CO, offers an excellent opportunity for participants to share their scholarly activities with education colleagues through a research abstract. The submission deadline is March 15, 2011. For more information, log on to www.aarc.org/resources/summer_forum/index.asp. To request a mentor, volunteer as a mentor, or for questions about the education research abstracts, contact: Weissman@palmbeachstate.edu, (561) 207-5068. ■

AARC Leaders Attend Meetings

Throughout the year, AARC leaders and members of the Executive Office staff attend meetings of the Association's state societies as well as other special meetings. In addition to making AARC representatives available for speaking engagements at meetings, the Association funds a special program to help some state societies partially pay for the travel costs of the speakers. Below are some activities AARC representatives are involved in:

Sam Giordano, AARC Executive Director

- Participating in an oxygen conference with the National Association for Medical Direction of Respiratory Care

Thomas J. Kallstrom, AARC COO and Associate Executive Director

- Representing the AARC at an EPA Asthma Workshop in Washington, DC

AARC Times Is Looking for Medical Mission Stories

We know many AARC members have reached out beyond our borders to help people in need of respiratory care treatments and education. Now we're hoping you'll agree to share your stories with the rest of us through an article here in the "Respiratory Care Currents" section of *AARC Times*, as we are actively seeking articles from AARC members.

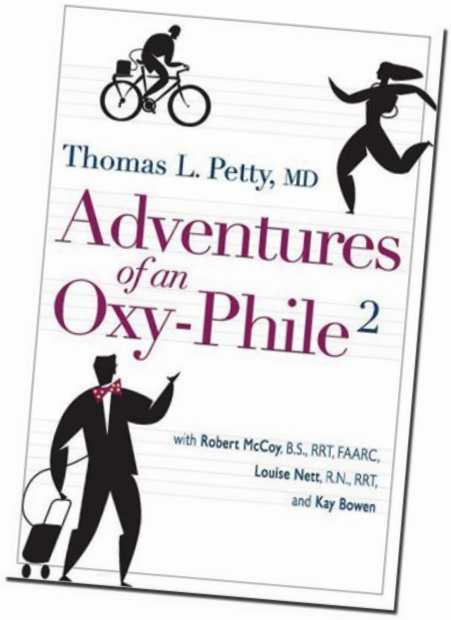
If you have a medical mission story to tell, contact *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org and place "Medical Missions" in the subject line. ■

Promise Regional Medical Center, Hutchinson, KS

University of Missouri, Columbia, MO

West Virginia University Hospital, Morgantown, WV

New Book a Labor of Love



When Thomas L. Petty, MD, FAARC, passed away in December of 2009, he was in the middle of editing a sequel to his popular "Adventures of an Oxy-Phile," a book he wrote for people living with supplemental oxygen.

After his death, his long-time associate, Louise Nett, RN, RRT, FAARC, decided the best way to honor his memory would be to finish what he had started. "Adventures of an Oxy-Phile2" was published in mid-2010 and has garnered rave reviews from the patient and provider communities. In the following interview, Nett explains what went into the book and why.

AARC Times: "Adventures of an Oxy-phile2" is a sequel to Dr. Petty's first book on oxygen users, "Adventures of an Oxy-phile" — why do you think he decided to do another book, and what were his hopes for the publication?

Nett: Dr. Petty wanted to do another Oxy-phile book because he thought there was a lot of new information that oxygen patients would like to know about. The advances in personal oxygen concentrators powered by newer battery technology would be of interest to many. The renewed interest in transtracheal oxygen is another.

Tom was a believer that all patients on oxygen should have a personal oximeter. All the patients know that to be true for themselves and are users. He also wanted the patients to expand their stories of life as an oxyphile. We think they did a good job of telling it like they live life.

Dr. Vlady Rozenbaum explains some of the challenges of international travel with oxygen. It is possible to do, but one must plan ahead. Edna Fiore, a patient advocate, works tirelessly to represent COPD patients at meetings — especially at national meetings, conferences, and in Washington, DC. I think that almost all patients will identify with the chapter by Dr. Gene Schwarz titled, "Living with COPD." He is an accomplished writer and has authored two fiction books.

Lynn Cole, Mike McBride, and Mark Junge break the mold telling their stories of adventuring forth with their trusty oxygen supply. Their stories of marathons, mini-marathons, ALA 47 flight stair climbs, and biking across the United States while on oxygen are more than what most "normal" people will ever be able to tell.

Linda Watson, the current president of EFFORTS (Emphysema Foundation for Our Right to Survive), was first diagnosed with emphysema at age 38. Her struggle to find information has made her a patient advocate. Canadian Chris Wigley learned the value of rehabilitation, not from pulmonary rehab but because he had a cardiac condition. He soon learned about the value of oxygen in his exercise program.

Respiratory therapists will recognize their peers Bob McCoy, John Goodman, and Mark Mangus as proponents of patient education. They believe a knowledgeable patient is the best member of the health team. Mary Burns, famous for her work with patient support groups and pulmonary rehab, talks about her work in California, including their mission to establish that oxygen-using patients are safe travelers on cruises.

The chapters from friends Dr. Jan Zielinski from Poland, Dr. Italo Brambilla from Italy, and Kozui Kida from Japan will let U.S. and Canadian patients know that oxygen therapy is now an international therapy as well.

Some parts of the first Oxy-phile book that Dr. Tom wrote are included in this book. He also writes about his need for oxygen therapy due to four

Draeger Medical, Inc.

Spartanburg Community College, Spartanburg, SC

Read more about RC Week 2010 at www.AARC.org.

heart surgeries. Dr. Rich Casaburi writes about the need for new research in long-term oxygen therapy.

AARC Times: Dr. Petty passed away before being able to finish the book. Why did you and your colleagues decide to take on the project and bring it to fruition?

Nett: We knew we had to finish the book because so many people had invested energy and time to write their chapters. And many people had heard about the book and were looking forward to seeing more information for patients receiving oxygen therapy. We felt we had to complete what Dr. Petty started because he always worked as a team leader. When the team leader can't finish the job, the rest take over.

AARC Times: The book features real oxygen users who share their stories — some of them quite amazing — about living well despite the need for supplemental oxygen. How did you recruit them to write chapters for the book, and what was their reaction to sharing their stories in this fashion?

Nett: Dr. Petty had talked or written to all the authors in early fall of 2009. To a person, they were enthusiastic about being part of this book. Some of the authors were well known in patient circles for their contributions. Dr. Petty knew many of the authors on a personal level and some through communication with them by e-mail.

AARC Times: The authors talk about everything from what daily life is like on oxygen to how they've accomplished feats like completing the Boston Marathon. What do you think these stories say about supplemental oxygen users and what they are able to accomplish?

Nett: These stories tell of patients overcoming their emotions when learning of the need for oxygen. Instead of feeling sorry for themselves, they decided to make the best of a tough situation. First they learned as much as they could from books, the Internet, and health care providers. They then looked into pulmonary rehab programs and adopted all the advice of the group leader or other patients. They found that exercise was beneficial to their condition. The more they exercised, the better they felt. With the support of their loved ones and friends, they started a new life.

And that is what supplemental oxygen can do — give new life. They began to take charge of their lives and their disease. It did not control them; they became the controller. They learned about their medications and became the most important member of their health team.

We can all learn something from these patients who overcame adversity and are living new lives as oxy-philes. They will all say that walking marathons, stair climbing, or biking across the United States are definitely not for everyone. They know they are unusual, but they say everyone can do a little more. They encourage other patients to make an effort to move — walk a little today, walk a little more tomorrow, and then keep it up until you get to the level you are satisfied with.

AARC Times: How do you believe the book can help both oxygen users and the clinicians who care for them better understand oxygen therapy and what people can accomplish despite using it?

Nett: The book is written for patients, but their health care providers will learn a lot about the ability of a determined patient. Oxygen is not a hindrance unless one lets it be so. For individuals with a focus on living life to the fullest, this book will be an inspiration. The patient authors have contributed so much to our knowledge of what is possible on oxygen.

AARC Times: What do you think Dr. Petty would say about "Adventures of an Oxy-Phile2" if he were here to see it today?

Nett: He would say that is what we were supposed to do — i.e., finish the book. Tom was a dedicated worker all his life. He always said, "finish what you start." Since he couldn't finish the book, it fell to us, his friends, to complete the project. I am sure he is looking down and thanking all who participated in the book. And he continues to inspire us to learn more about this magnificent drug. He is pushing us to tell others about this book so that it can be an inspiration to others who feel devastated by the

(continued on page 55)

Rock Valley College, Rockford, IL

San Joaquin Valley College, Bakersfield, CA

Medical University of South Carolina, Charleston, SC

"Aha" Moments That May Save Babies Around the World

Robert DiBlasi displays the ventilation devices he and his colleagues believe could help resource-limited nations provide better care for infants with respiratory distress syndrome.

Surviving respiratory distress syndrome in the United States is the norm rather than the exception. But for more than a million infants born each year in resource-limited nations, the outcome isn't so promising. Those infants succumb to the condition because their countries can't afford the high-tech mechanical ventilators and CPAP devices we take for granted — and even if they could, they don't have enough medical professionals trained in their use to make it a viable treatment option in most places.

At Seattle Children's Hospital up in Washington state, Robert DiBlasi, RRT-NPS, FAARC, is part of a unique project aimed at building a ventilator just for this setting, and he's being led in the effort by none other than his hospital CEO. It turns out Thomas Hansen, MD, is also a neonatologist and pulmonologist, and when he took on the CEO role in 2005 it was only with the understanding that he would still be able to pursue his passion for research. His goal was to save hundreds of thousands of infants every year who are born in countries with limited access to ventilator care.

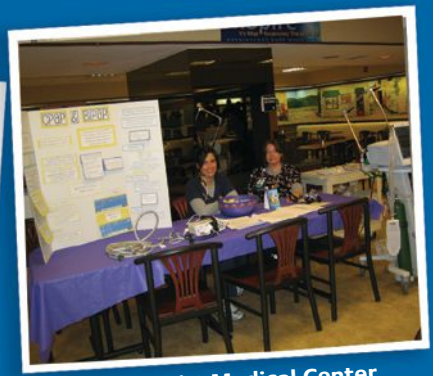
"Dr. Hansen has always had a goal to build a neonatal-specific ventilator for resource-limited settings," says DiBlasi. "At the time that we began designing this ventilator, Tom and I were doing some clinical research on ventilated babies. He approached me and two engineers and literally said, 'make me an inexpensive ventilator that works as well as a microprocessor-driven vent.'"

So that's what they did. Working closely with Dr. Hansen, DiBlasi and his colleagues came up with a high-amplitude bubble continuous positive airway pressure (HAB-CPAP) device capable of providing respiratory support substantially greater than that which is provided by bubble CPAP (B-CPAP) used in modern NICUs. Experiments conducted in spontaneously breathing, lung-lavaged juvenile rabbits showed HAB-CPAP lowered work of breathing and increased PaO_2 levels when compared to treatment with B-CPAP at identical mean airway pressures.

"The device achieves inflation using a small water bath and a compressor or gas cylinder," explains DiBlasi, an AARC member. "During this process, my colleague and I made the discovery that by tilting the gas outlet of a standard B-CPAP system, the pressure oscillations created by gas en-

Montana State University, Great Falls, MT

Saline Memorial Hospital, Benton, AR



Advocate Christ Medical Center, Oak Lawn, IL

tering the water column created a pressure waveform similar to a high-frequency ventilator. This was our first 'aha' moment."

From there, Dr. Hansen had the idea to add a second piece of tubing in the water column to control inspiratory pressure for intermittent mandatory ventilation (IMV) breaths. "He added a simple pinch valve to control rate and I-time, and *voila*, we had a ventilator." The inexpensive, simple-to-operate device — officially called the bubble intermittent mandatory ventilator but known familiarly as the "Hansen Ventilator" — functions much like first-generation infant ventilators used in the United States in the 1970s and 1980s.

In addition to providing IMV, the gas bubbling through the water creates oscillations in airway pressures during the exhalation cycle. In tests, the Hansen Ventilator outperformed other modern mechanical ventilators when ventilating paralyzed, lung-lavaged juvenile rabbits at identical ventilator settings, says DiBlasi.

"The interesting thing is that the ventilator combined with HAB-CPAP has the ability to provide bubble CPAP, conventional ventilation, and a form of high-frequency ventilation that can be applied to assist spontaneously breathing infants noninvasively using prongs, or invasively with an ET tube," explains DiBlasi. "I never thought that we would be able to capture the energy created by water to ventilate a very sick preemie's lungs, but we have done it!"

DiBlasi, Dr. Hansen, and their colleagues published a paper on the HAB-CPAP device in the June issue of *Pediatric Research* and another on both devices in the Sept. 1 Epub edition of the same publication. DiBlasi has also traveled to Vietnam and India to identify sites to continue the clinical research. The team is applying for a grant to study the devices in India. ■

(continued from page 53)

knowledge that they need oxygen. Oxygen can be the beginning of the first day of the rest of their lives.

AARC Times: You received the Thomas L. Petty Invacare Award for Excellence in Home Respiratory Care during the Awards Ceremony at the AARC International Respiratory Congress in Las Vegas, NV, this past December. What did you think about winning the first of this award to be renamed for Dr. Petty?

Nett: I was pleased to hear about the Thomas L. Petty MD Invacare Award for Excellence in Home Respiratory Care last summer. However, I was shocked to hear I was the recipient. It is quite amazing that work done in the 1960s and early 1970s is being remembered today.

The award really should go to all the early pioneers in home care. I am just one of the people who advocated for getting people out of the hospital and into their homes. Rehabilitation was the key, and oxygen was a significant tool in home care. Tom Petty and I learned a lot about home care from our friends, Drs. Alvin Barach from New York, and Rueben Cherniak, then in Winnipeg, Canada. We looked to them for ideas and help as we established our program of care. We are all benefiting from their pioneering work in home care.

We had a lot of fun in the early days making home visits all over the greater Denver area. The patients taught us so much. They are the ones who really deserve the award. I am thankful for this honor. I know Tom would be pleased to learn that his memory is preserved in this home care award.

To order a copy of "Adventures of an Oxy-Phile2," visit www.drtompetty.org. ■

Journal Issues Call for Open Forum Abstracts

A simple and convenient way for you to submit abstracts online for the Respiratory Care Open Forum for the AARC International Respiratory Congress is at http://aarc2011.abstractcentral.com. Easy online instructions will guide you through properly submitting abstracts for Respiratory Care 2011 in Tampa, FL, Nov. 5–8. The deadline for submitting Open Forum abstracts is June 1.

The Open Forum is your opportunity to gain national and international recognition for your work in cardiorespiratory care. Plus, accepted abstracts will be published in the October 2011 issue of Respiratory Care and will automatically be considered for research fellowships from the American Respiratory Care Foundation. ■

Saint Luke's Northland Hospital, Kansas City, MO

Carroll Hospital Center, Westminster, MD

Mt. Evans Ascent — the Ultimate Lung Challenge

by Roxlyn G. Cole

I don't think any respiratory therapist or doctor would suggest this ultimate lung challenge; but my fellow COPD friend did, and I was amazed once I decided to do it. I have always been grateful for respiratory professionals setting me on the pulmonary rehab path, and everyone needs to know it *really* works — but few would expect something like this is possible.

If a patient has the desire to do more, every encouraging word from medical staffers, oxygen providers, and respiratory manufacturers is so appreciated, and it helps more than any could imagine.

Perhaps Mike McBride (who has moderate/severe COPD) decided he needed a bigger challenge since having completed the Boston Marathon while pulling his oxygen cart — maybe he could go back and give another try at mountain climbing. Maybe writing about his climbs in the recently published, "Adventures of an Oxy-Phile2" made him decide to take this stupendous challenge. This book was written by Thomas L. Petty, MD, FAARC, and a selection of other authors, including respiratory professionals and eight patients, and offers hope and encouragement for patients. For more information about the book, go to www.drtompetty.org. I believe it is informative for professionals, patients, and caregivers.

After considering Mike a bit crazy, I thought why not? At age 72, my COPD is mild, mostly defective diffusion. I can walk half-marathons downward from 10,880 feet of altitude, so why not a slow upward walk? My husband was a great help doing multiple test drives up Mt. Evans (a very scary hairpin, no guard rails drive) to plot out where we would start and where on the narrow road he could pull off and be ready to supply us with new oxygen tanks without going over the edge. Gradually, we gained interest from a few others. Nine adventurers participated, with the age range from 18–78, and we all had a great, if somewhat breathless, time in the thin air at the ultimate 14,264 feet.

Caire/Chart Industries sent representative Crystal Wolf with extra LOX portables. John More, from American Medical Sales & Repair also brought portables, some two-way radios (cell phones don't work up that high), and he even had his daughter Lindsay to help with the driving. Apria sent Lisa Tilson up to take some photos. Last but not least, two friends, Curt Huber and Andy Mirdik, took the real trail, unencumbered with oxygen tanks. They cheered us from above with the walkie-talkies.

Starting from 12,830 feet at Summit Lake, four of us walked the road

Baptist College of Health Sciences, Memphis, TN

NY DART Symposium

Baxter Regional Medical Center, Mountain Home, AR

for 5.3 miles to the top parking lot at 14,130 feet. Then we finally had to hand-carry oxygen up a rough trail, instead of towing them on oxygen carts.

The total distance was about 6 miles. Several drove, Lindsay waited at the top to run down for potential emergencies, and my husband Lou followed within sight behind us with our next oxygen tanks. We weren't sure how long 15–16 L/min would last us, because we couldn't guess our walking speed. It turned out to average about 2 mph. Both Mike and I have TTO oxygen (transtracheal oxygen delivery in the neck), and I additionally used Oxy-view glasses to add 4 liters to my oxygenation with 12 liters via the TTO.

For information on TTO from the patient's perspective, folks can write to me "Lyn" (Roxlyn G. Cole at roxlyngcd@comcast.net) in Littleton, CO. My "Pulmonary Rehab & After" blog has more of our adventures at http://pulse.yahoo.com/_KIEVF7SMPEV62PAF7LWHN3HEWU/blog. ■

Respiratory Care Education Annual Call for Papers

The AARC will publish Volume 20 of the Respiratory Care Education Annual in the spring of 2011, and the Education Section invites educators to submit papers for consideration. Deadline for submission is Feb. 15, 2011. Papers should be approximately 6 to 10 pages in length with abstracts less than 120 words. For more information on style and format, contact Dennis Wissing at dwissi@lsuhsc.edu or visit www.rcjournal.com/guidelines_for_authors/ to follow author guidelines used for Respiratory Care Journal. ■

Nominate an AARC Member for "Success Stories" or "Interesting People"

Do you know an AARC member who would be a good choice for one of our "people" features in "RC Currents"? If so, provide this information to the editor at the address below: the member's name, job title, place of work, city, and state; why you think they should be featured; and their contact information. Send to: Editor Marsha Cathcart, cathcart@aarc.org with "Success Stories" in the subject line. ■

Read the Rest of the Story at AARC.org

- Second group of Fall Bulletins online — www.aarc.org/headlines/10/11/bulletins.cfm
- AARC endorses warning label strategy — www.aarc.org/headlines/10/11/tobacco_labels/
- Benchmarking requirement added to QRCR hospital criteria — www.aarc.org/headlines/10/11/qrcr/
- CMS final rules show positive gains for pulmonary rehab — www.aarc.org/headlines/10/11/cms_rules.cfm

University of California, San Diego Medical Center, San Diego, CA

Self Regional Healthcare, Greenwood, SC

Mid-State Technical College, Marshfield, WI

Transitions

Lauri L. Leadley, CRT, RPSGT, recently opened her fifth sleep center in Arizona under the Valley Sleep Center name. The Chandler clinic joins clinics in Scottsdale, Mesa, Phoenix, and Glendale. (Photo 1)

Lionel Machado is participating in a leadership class established by the Tulare, CA, Chamber of Commerce to train community leaders of tomorrow. Machado works at Tulare Regional Medical Center and also serves as an assistant football coach for the Tulare Youth Athletic Association.

Paul T. Treffeisen, BS, RRT, has been appointed deputy commander for the National Disaster Medical System, Disaster Medical Assistance Team for South Carolina, by Dr. Kevin Yeskey, deputy assistant secretary and director in the Office of Preparedness and Emergency Response at the Department of Health and Human Services. Shown here on a 2010 deployment to Haiti, Treffeisen is the respiratory care manager for the Greenville Hospital System in Greenville, SC. (Photo 2)

Gloria Morris, RRT-NPS, recently completed the Healthcare Emergency Management training program offered by the Center for Domestic Preparedness in Anniston, AL. The center is operated by the Department of Homeland Security's Federal Emergency Management Agency. Morris is a respiratory therapist at Bridgton Hospital in Bridgton, ME.

Karen Chambly, RRT, has been named director of respiratory therapy and neuro-sleep services at La Porte Regional Health Systems in La Porte, IN. She has been with the hospital since 1997. (Photo 3)

Carol Canter is the new director of clinical services for the Solcum-Dickson Medical Group in New Hartford, NY. Canter has been with the group since June of 2009, coming to the position from Mohawk Valley Home Care in nearby Utica, where she was executive director for more than 15 years.

Robert L. Wilkins, PhD, RRT, FAARC, passed away in September after a long battle with lymphoma. He served on the cardiopulmonary science faculty at Loma Linda University in Loma Linda, CA, from 1979 to 2006 and was a clinical professor in the respiratory care program at the University of Texas Health Science Center at San Antonio at the time of his death. He wrote several well-known respiratory care textbooks during his long career.

We welcome news about AARC members. Submit job changes, awards, and death notices online at www.AARC.org/transitions. ■

Members, Send Us Your Human Interest Stories

Have you been active in a ventilator-dependent kids' summer camp? Have you helped an elderly patient in need? Have you saved a life outside of a health care facility? *AARC Times* is always searching for stories from AARC members that relate special experiences.

If you have a human interest story to share with our readers, please contact *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org. ■

Catawba Valley Community College, Hickory, NC

Laurel Business Institute, Uniontown, PA

"Green" Doesn't Mean "Fragrance Free"

Respiratory patients who are sensitive to scents won't be avoiding them by purchasing products that claim to be "green." A new study out of the University of Washington on 25 commonly used scented products found these products emitted an average of 17 chemicals each, and most of them were not listed on the label.

While the scientists drew no conclusions as to the effect of these chemicals on a person's health, previous national surveys found about 20% of respondents reported adverse health effects from air fresheners and about 10% reported adverse effects from laundry detergents. People with asthma were twice as likely to report these problems.

The study was published in the October issue of *Environmental Impact Assessment Review.* ■

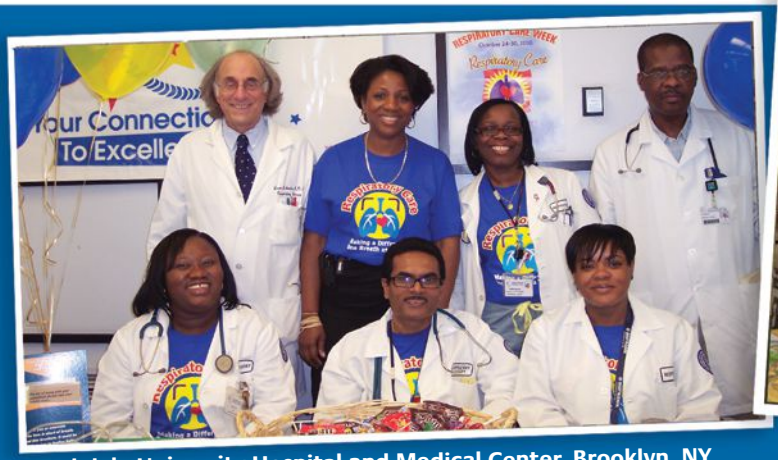
Contribute to Writer's Corner

AARC Times is currently considering essays and short stories from AARC members for publication in the Writer's Corner section of "RC Currents." Submissions should be under 500 words and contain a cover letter with the member number, contact information such as phone and fax numbers, and e-mail address. Send submissions to cathcart@aarc.org with "Writer's Corner" in the subject line. ■

Study Points to High OSA Risk in Hospital Patients

Loyola University Hospital researchers presenting at the recent CHEST 2010 conference found 81% of hospitalized patients are at high risk for obstructive sleep apnea (OSA). The study was conducted among 195 patients who were screened using the eight-question STOP-BANG questionnaire. Among that number, 157 answered "yes" to at least three questions, placing them in the high-risk category. Despite this risk, however, only 41 of the patients reported having been evaluated in an overnight sleep lab. Thirty-one of those patients had been diagnosed with OSA, but only 18 were being treated.

"Undiagnosed obstructive sleep apnea may be associated with increased risk of complications in hospitalized patients," noted study author Dr. Sunita Kumar and her colleagues. "Screening and evaluation for obstructive sleep apnea in high-risk patients should be considered as it may help reduce the burden of undiagnosed obstructive sleep apnea." ■



Brookdale University Hospital and Medical Center, Brooklyn, NY

Mott Community College, Flint, MI

▶ Strange But True

Tick Tock: Scientists have long known time passes faster at higher elevations, such as in a high-flying rocket, but now researchers from the National Institute of Standards and Technology have found the phenomenon occurs even a foot off the ground. While the difference is way too small to be measured by your wristwatch, the investigators believe the finding could have practical applications in geophysics and other fields.

DNA Crimestopper: Police in London are providing a DNA spray to small businesses to help catch thieves. If a business owner is being robbed, he simply presses a concealed button that both calls police to the scene and releases a fine mist that coats everything in the room. The synthetic DNA contained in the mist lodges in the robber's nose and other body cavities and can help identify him as the perpetrator.

Babies Boost Brainpower: Some people believe motherhood turns a new mom's brain into mush. However, a researcher at the National Institute of Mental Health has found childbirth to actually increase the size of the brain in areas linked to motivation and behavior.

No Sponge Left Behind: University of North Carolina at Chapel Hill researchers are working on radio frequency tags that can be implanted into surgical sponges. Why? The tags can alert surgeons ready to close up that a sponge still needs to be retrieved.

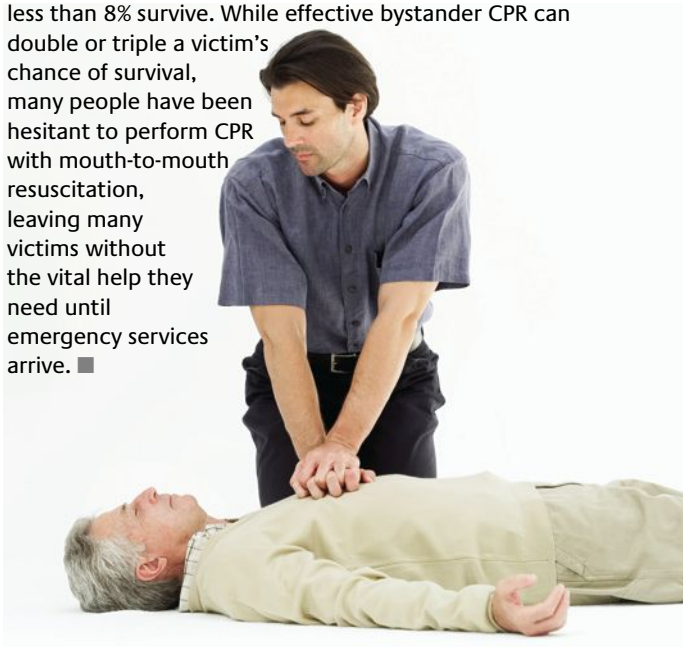
Healthy Choices: A new video game for smart phones is helping people make better dietary choices. Georgia Institute of Technology investigators who tested "Order Up!" in a group of 12 volunteers found playing the game over a three-week period led to healthier eating when dining out.

Stormy Weather: Being exposed to a hurricane while in utero can significantly increase the risk of fetal distress after birth, report Colorado State University researchers who compared pregnant women exposed to Hurricane Andrew with similar women not exposed. Exposure upped the risk by 20% in the second trimester and 26% in the third trimester. ■

New Guidelines Focus on Compressions-Only CPR

The American Heart Association (AHA) has issued new cardiopulmonary resuscitation (CPR) guidelines that forego mouth-to-mouth resuscitation and instead recommend chest compressions as the key component of CPR. The recommendation is based on a landmark study published in the Oct. 6 issue of JAMA that showed hands-only CPR applied by bystanders boosted the survival rate from 18% to 34% and increased the number of people willing to initiate CPR from 28% to 40%. The guidelines recommend applying chest compressions to a depth of about two inches at a rate of 100 per minute.

According to the AHA, the changes are sorely needed because less than a third of out-of-hospital sudden cardiac arrest victims receive bystander CPR and less than 8% survive. While effective bystander CPR can double or triple a victim's chance of survival, many people have been hesitant to perform CPR with mouth-to-mouth resuscitation, leaving many victims without the vital help they need until emergency services arrive. ■



Eastern New Mexico University–Roswell, Roswell, NM

Charleston Area Medical Center, Charleston, WV

Where There's Smoke, There May *Not* Be Fire

It doesn't take a fire in the neighborhood to expose your respiratory patients to the ill effects of smoke. New research on the way smoke travels suggests the culprit could be thousands of miles away instead.

The phenomenon has its roots in weather patterns. Scientists have long known that large wildfires can create or strengthen thunderstorms, but now they are learning that the clouds generated by these storms — called pyrocumulonimbus clouds — can also boost smoke from the fires far into the stratosphere where it can then be picked up by jet streams and carried to remote sites. Late last summer, for example, a dusky shroud hanging over Alaska and Western Canada was found to originate not in the wildfires that usually strike the area at that time of year but in massive blazes that occurred 9,000 kilometers away in Russia in July.

A report on the phenomenon was published in the Nov. 6 edition of *Science News*. ■

Diabetes Hurts the Lungs Too

Could diabetes be the next condition linked to lung impairment? Maybe, report Dutch researchers publishing in a recent issue of CHEST. They looked at pulmonary function data from 40 studies involving 3,182 people with diabetes but no overt lung disease who were compared to 27,080 healthy controls. Results showed diabetes was associated with a modest yet statistically significant impairment in pulmonary function in a restrictive pattern.

The researchers believe diabetes-related microvascular damage in the lungs and/or stiffening of the thorax and lungs due to glycation may be to blame. "Since our results apply to the diabetic subpopulation free from overt pulmonary disease, it would next be interesting to investigate the potential clinical implications in those patients with diabetes who carry a pulmonary diagnosis, such as COPD or asthma," write the authors. ■

Human Growth Hormone May Benefit CF Patients

A new study conducted by Connecticut investigators and funded by the Agency for Healthcare Research and Quality (AHRQ) finds human growth hormone increases height and weight and may improve lung function and strengthen the bones of patients with cystic fibrosis. Some evidence also indicates the treatment can reduce the need for hospitalization. However, no evidence was found to suggest the therapy prolongs life or improves health-related quality of life, and use of the treatment was found to raise blood sugar, which could put patients at risk for diabetes.

The comparative effectiveness review was based on an analysis of 53 previous studies on the effect of human growth hormone on CF patients and is included in the AHRQ's Effective Health Care Program. ■

Illinois Central College, East Peoria, IL

North Central State College, Mansfield, OH

Dayton Children's Hospital, Dayton, OH

Chronic Disease Manager

(continued from page 7)

needs and care of patients with chronic diseases. Now is the time for practicing respiratory therapists to become comfortable with disease management. It is likely that our future practice will encompass this on an even larger scale. Are you ready? ■

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Ventilation for Life

(continued from page 9)

while avoiding the complications of mechanical ventilation. Newer technology such as the portable SenTec digital transcutaneous carbon dioxide ($TcCO_2$) monitor has potential implications in transport monitoring, as it stabilizes in about one-fourth the time of conventional $TcCO_2$ monitors and has been shown to be very accurate in the ICUs.

The utilization of neonatal specialty teams has been common practice since the 1970s; and since those early days, respiratory therapists have been important members of these specialty teams. In 1985 the American Academy of Pediatrics (AAP) published "Guidelines for Air and Ground Transportation of Pediatric Patients." This document was the AAP response to provide standardized guidelines for transporting critically ill and injured children.[11] These guidelines have been revised twice, in 1993 and again in 2006.[12,13] In all three of these documents, respiratory therapists are mentioned as common members of transport teams bringing their knowledge and skill to the patient's bedside. Just this year the Commission on Accreditation of Medical Transport Services (CAMTS) released the eighth edition of their standards. This edition is important in that it now lists advanced credentials such as RRT, NPS, and C-NPT — again recognizing the contributions respiratory therapists make to the transport of critically ill children.

As enhanced technology and knowledge in managing critically ill newborns is applied in the transport arena, the level of care in this mobile environment may reach new standards. Acquiring a foundation of knowledge about newborn pathologies and new technology will only enhance the need for respiratory therapists who continue to be valuable members of transport teams. ■

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Sleep Waves

(continued from page 11)

Their study compared anatomical features among 22 obese OSAS patients and 22 obese controls. Compared to the controls, the OSAS patients had a smaller oropharynx and larger adenoids, tonsils, and retropharyngeal nodes. The size of the lymphoid tissues correlated with severity of OSAS but was not modified by the BMI Z-score.

OSAS subjects also had larger parapharyngeal fatpads and abdominal visceral fat, but the size of these tissues was not correlated with severity of OSAS or modified by the BMI Z-score.

"Upper airway lymphoid hypertrophy is significant in obese children with OSAS," write the researchers.

"The lack of correlation of lymphoid tissue size with obesity suggests that this hypertrophy is caused by other mechanisms."

Study looks at sleep and driving in the elderly

Yale University investigators who collected self-reported driving patterns and sleep questionnaire results for 430 older people who reported driving a median of 17 miles per day find little evidence that common sleep problems affected their driving ability.

Overall, 26% of the participants reported insomnia, 19.3% reported daytime drowsiness, and 19.9% were deemed at high risk for OSA. However, none of these factors were associated with increased risk for a composite I or II driving event over a two-year period.

The authors note other studies have shown that older drivers tend to self-regulate driving practices. They suggest future studies should look at whether sleep disturbances are "more important as a mechanism that underlies driving cessation rather than compromising driving safety." The findings appeared in the October issue of the *Journal of the American Geriatrics Society*.

Study explores PH patients with SDB

Sleep-disordered breathing (SDB) is common in patients with pulmonary hypertension (PH) and cannot be predicted by sleep apnea symptoms or diurnal rest and exercise SaO_2. That's the key finding from New York researchers who conducted right and left heart catheterization and polysomnography on 28 patients referred for dyspnea on exertion and elevated pulmonary arterial pressure >30 mm Hg on echocardiography who were not pre-selected for symptoms of SDB.

Thirty-two percent of the patients were diagnosed with idiopathic PH and 68% with PH associated with other diseases. Most were classified as World Health Organization Functional class II or III, and the mean pulmonary arterial pressure (mPAP) was 40.9 ± 15.1 mm Hg. Diurnal resting and SaO_2 were 94.9 ± 3.7% and 88.3 ± 8.9%. Among the results:

- The mean apnea-hypopnea index (AHI) was 11.4 ± 19.8/h.
- 50% had an AHI ≥ 5/h.
- 30.6 ± 36% of total sleep time was spent with SaO_2 < 90% (T90%).
- 66% with an AHI ≥ 5/h reported snoring.
- 60% noted daytime somnolence but only 29% had an Epworth Sleepiness Scale ≥ 10.
- Right atrial pressure and mPAP were significantly correlated with AHI and T90%.
- The best predictive model relating PH severity to metrics of SDB was a highly significant association between mPAP and a linear combination of AHI and T90%.

The study was published in the Oct. 7 Epub edition of *Sleep & Breathing*. ■

Government Advocacy

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maintained his seat and won a third term in the Senate. Sen. Crapo is also a founder and co-chair of the Congressional COPD Caucus.

Repeal of Medicare DMEPOS competitive acquisition program — Congressman Kendrick Meek (D-FL) introduced a bill (H.R. 3790) to repeal the Medicare competitive bidding program. While there is strong support in the House of Representatives to repeal the competitive bidding law altogether, a companion piece in the Senate has not been introduced. AARC has submitted letters to Congressman Meek supporting the Congressional effort to repeal the competitive bid program. Also be aware that Congressman Meek ran unsuccessfully for the Florida Senate seat and will not return to Congress in January. The bill will have to be re-introduced with a new primary sponsor.

Repeal of Medicare's 36-month cap on home oxygen therapy under the DME benefit (H.R. 2373) — This legislation was introduced by Representatives Tom Price (R-GA) and Heath Shuler (D-NC) and would repeal the law that now limits rental payments for Medicare home oxygen equipment and supplies to 36 months. Forward movement on this legislation has been stalled while the HME industry determines a way to offset the costs of repeal (i.e., how to "pay for" the bill). The AARC opposed the initial legislation that created the 36-month rental cap that eventually became law. Without "pay for" provisions, it becomes extremely difficult to move the legislation through Congress any time soon.

Conclusion

2010 was a very active year for the AARC government affairs staff as we continued to advocate for the advancement of the respiratory profession through state and federal legislation and regulations. ■

AARC Representative Update

(continued from page 19)

community settings. Emphasis is on Guidelines Implementation Panel (GIP) messages and closing the disparity gap. The NAEPP selected and funded 13 demonstration projects around the United States to assist in fulfilling this goal.

What's next?

Looking toward the future, the NAEPP will be supporting programs and research that help to fill some of the evidence gaps that currently exist. One recognized need is to develop core asthma outcome measures, including a validated instrument for measurement to assist in the standardization of surveillance across all states so that data can be compared nationwide.

The "Healthy People 2020 Report" continues to focus on asthma. We're placing emphasis on gathering information on EPR guidelines compliance (conducted by the Centers for Disease Control and Prevention) and guiding an asthma severity survey (conducted by the National Center for Health Statistics). The results of these surveys will assist the NAEPP in strategic planning to determine where to go next to ensure appropriate diagnosis and treatment of asthma and to continue to move toward reducing the burden of asthma.

The AARC has been an active member of the Education and Schools Subcommittee of the NAEPP, which identified a need for asthma information in schools that gave birth to the AARC Peak Performance USA (PPUSA) program. PPUSA has reached out to more than 500 elementary schools and touched over 34,000 children with asthma. As this program grows, we encourage more AARC members to take an active role in their community and enlist a local elementary school into this program. ■

Acute Chest Syndrome and Sickle Cell Disease in the Pediatric Patient

(continued from page 21)

Finally, patients with sickle cell disease should receive comprehensive medical care and follow-up on a regular basis. This will help to prevent and stay on top of new viruses, infections, and changes in clinical symptoms. Some of this care may include prophylactic antibiotics such as penicillin, utilized to prevent the incidence of infections.[3]

The future holds promise for physicians to be able to predict the development of ACS earlier in its course and prior to the manifestation of clinical symptoms.[3] Earlier treatment and identification may help to further improve outcomes. ■

EDITOR'S NOTE

This article was previously published in the Fall 2009 issue of the AARC Neonatal-Pediatrics Section *Bulletin*.

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The Emergence of Novel Nicotine-based Products, Foods, and Beverages

(continued from page 24)

products may sustain nicotine addiction and tobacco use or even serve as a gateway to tobacco use. ■

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Revised May 2010

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American Respiratory Care Foundation

Every year the American Respiratory Care Foundation (ARCF) joins with sponsors from the health industry to award up to $29,000 to respiratory therapists and physicians through its education recognition, fellowships, grants and awards programs.

Award Programs

For more information, or to apply for one of these awards, contact the ARCF Executive Office, 9425 N. MacArthur Blvd., Suite 100, Irving, TX 75063-4706, (972) 243.2272, fax (972) 484-2720, e-mail arcf@aarc.org.

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Grants, Awards, and Fellowships

Undergraduate Student Awards
The ARCF has several award programs available to students currently enrolled in accredited respiratory care education programs.

Postgraduate Student Awards
Two award programs are available to respiratory therapists who hold a Baccalaureate degree and seek an advanced degree.

Research Fellowships/Abstract Awards
Fellowships are awarded to researchers having quality abstracts accepted for presentation at the AARC International Respiratory Congress.

Achievement Awards
The ARCF presents these prestigious awards to professionals in recognition of their dedication and commitment to respiratory care.

Literary Awards
All papers submitted in the science journal RESPIRATORY CARE are automatically considered for these awards.

Research Grants
Research funds are available to qualified investigators in the field of respiratory care.

International Fellowships
Sponsored by the ARCF, fellowships are available from the AARC to health care professionals from outside the U.S. who exhibit a profound interest in respiratory care.

Community Grants
Community grants are made from funds raised through the annual Ventilator 5K events. These support a wide variety of community events to raise awareness of lung diseases, educate the public and assist patients.

Other Funding Sources
These are sources that we are aware of that also offer funds and grants to researchers and students.

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- COPD is the third most frequent reason for hospital readmissions.[1]
- Research shows that supportive palliative care can reduce rehospitalization and increase patient satisfaction.[2]
- There is a quality deficit in routine care of COPD patients, suggesting that increased focus on routine management of COPD care is warranted.[3]
- By teaching patients self management, the clinician can help to decrease the number of readmissions and emergency department visits.[4]

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. N Engl J Med 2009;360:1418-28.
2. Brumley R, Enguidanos S, Jamison P, et al. Increased satisfaction with care and lower costs: results of a randomized trial of in-home palliative care. J Am Geriatri Soc 2007;55:993-1000.
3. Mularski RA, Asch SM, Shrank WH, Kerr EA, et al. The quality of obstructive lung disease care for adults in the United States as measured by adherence to recommended processes. Chest 2006; 130;1844-1850.
4. Rice KL, Dewan N, Bloomfield HE, Grill J, et al. Disease management program for chronic obstructive pulmonary disease: a randomized controlled trial. Am J Respir Crit Care Med. 2010 Jan 21.

"The speakers were excellent and very engaging. The introduction by actual patients was great. This will be a course that will be offered to my staff." – Kimberly S. Wiles, BS RRT

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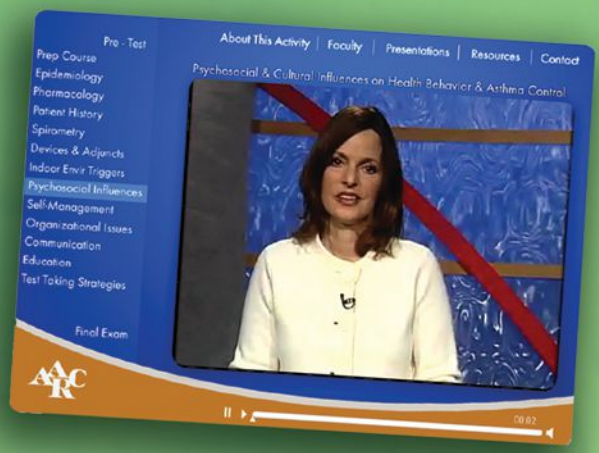

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Vail, CO
AARC Summer Forum
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

October 23–29
Respiratory Care Week
Contact AARC, (972) 243-2272, www.aarc.org

October 26
Lung Health Day
Contact AARC, (972) 243-2272, www.aarc.org

November 5–8
Tampa, FL
AARC International Respiratory Congress
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

Other Meetings

May 13–18
Denver, CO
American Thoracic Society International Conference
Contact ATS International Conference Department at (212) 315-8658 or conference@thoracic.org

Submissions for the next available issue are due Jan. 24.

For information on submitting calendar events, contact: Beth Binkley, AARC Times
9425 N. MacArthur Blvd, Suite 100, Irving, TX 75063-4706
(972) 243-2272
Fax (972) 484-2720
E-mail binkley@aarc.org

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A Salute to our 2011 Corporate Partners

Since 1947, the AARC has been leading the effort to advance the respiratory care profession and promote quality respiratory health care. Working with our 50 state organizations, we have successfully advocated for the profession at the federal, state and local level.

The link between the respiratory profession and manufacturers is clear. If respiratory practice expands, so too does the economy for our industry partners.

As health care budgets shrink and patient care becomes increasingly complex, our mutual challenges become greater. The synergy of the corporate partner concept is an effective way to address those needs utilizing our combined skills and resources.

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[1] Shah N et al. *Anesthesiology.* 2006;105:A929. * Some 2011 Radical-7 features not FDA 510(k) cleared.