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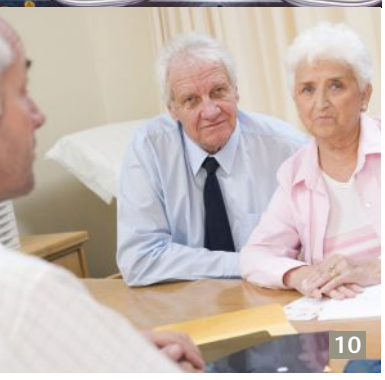

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AARC Strategic Plan

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

- Refine and expand the scope of practice for respiratory therapists in all care settings.
- Advance the knowledge base and educational preparation of respiratory therapists to ensure competent patient care and to foster patient safety initiatives.
- Support research and scientific inquiry to strengthen the scientific foundation and promote best practice for patient care.
- Establish professional standards and outcomes supported by scientific evidence.
- Advocate for federal and state health care policies that enhance patient care, patients' access to care and professional practice.
- Partner with governmental agencies, community organizations, third-party payers, professional societies and the public to promote healthy behaviors and prevent cardiopulmonary disease.
- Broaden consumer and health care providers' knowledge and understanding of the value of respiratory therapists in providing safe, competent and cost-effective care.

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

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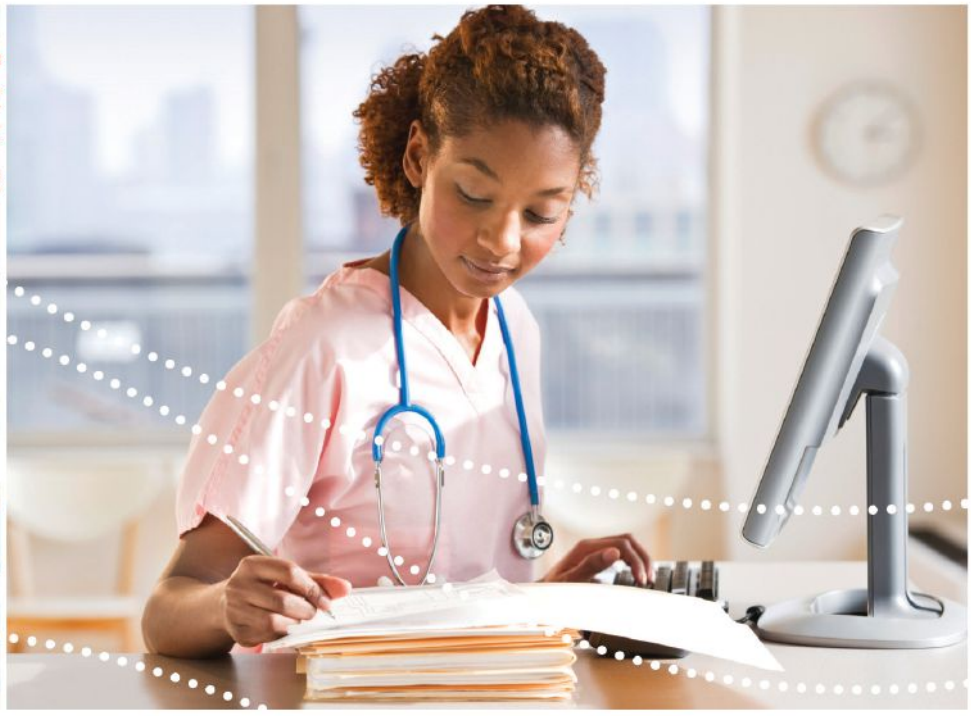

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Ventilation for Life

Neonatal Volume-targeted Ventilation Tricks of the Trade

by Brandon Daigle, MBA, RRT-NPS

Adult volume-control ventilators were the first devices used in the newborn intensive care units. When neonatologists began mechanically ventilating infants in the early 1970s, ventilators were incapable of delivering tidal volumes that could be accurately measured.[1] Time-cycled, pressure-limited ventilation became the method widely used to mechanically ventilate neonates. A peak inspiratory pressure was set to reflect what the clinician thought was appropriate based on the physical assessment, primarily consisting of the patient's chest rise and gas exchange. It was discovered that pressure-limited ventilation delivered inconsistent tidal volumes due to:

- Changes in lung compliance
  - Waxing and waning respiratory effort
  - Surfactant administration
  - Changes in chest wall compliance from positioning, bundling, or edema
- Changes in resistance
  - Secretions in the endotracheal tube (ETT) or airway
  - Biofilm within or lumen integrity of the ETT
- Patient asynchrony.

With no accurate way to measure tidal volumes, it became an afterthought in mechanical ventilation until newer generation ventilator manufacturers decided to incorporate flow sensors that were capable of monitoring such small tidal volumes.

Volutrauma occurs when large tidal volumes are delivered that overstretch alveoli and the distal airway. This has been a concern of clinicians since reliable methods of tidal volume measurement became available. Volume-targeted ventilation has the ability to deliver consistent tidal volumes breath to breath, thereby reducing the risk of ventilator-induced lung injury. A recent Cochrane review looking at nine randomized controlled trials provides insight that the application of volume-targeted ventilation can significantly reduce the incidence of bronchopulmonary dysplasia, pneumothorax, and Grade 3 and 4 intra-ventricular hemorrhage.[1,2] Perhaps these positive outcomes are associated with more consistent minute ventilation or precise tidal volume delivery.

Why have we encountered resistance to using a volume-targeted strategy in neonates? Is it the neonatal respiratory therapist, neonatologist, equipment limitations, or a combination of factors? If you have been in the field for a few years, it is likely that you have heard the concerns expressed by all parties on both sides of the volume-targeted ventilation debate. For the sake of brevity, we will cover only a few.

about the author...

Brandon Daigle, MBA, RRT-NPS, is a respiratory clinical manager in the neonatal ICU at Children's Medical Center in Dallas, TX.

Accuracy

Advances in ventilator sensors, response times, and microprocessor technology have opened a new world of volume-targeted ventilation. Many ventilators can accurately deliver tidal volumes as low as 2 mL with +/- 10% accuracy. Although it is impossible to control two variables (pressure and volume) at the same time, many neonatal ventilators offer volume-control ventilation and volume-targeted pressure control ventilation. Limited data exists concerning whether either mode is superior; however, volume-targeted ventilation may offer the comfort of pressure control while maintaining a tidal volume-targeted breath sequence by servo-controlling pressure.

Why have we encountered resistance to using a volume-targeted strategy in neonates? Is it the neonatal respiratory therapist, neonatologist, equipment limitations, or a combination of factors?

Patient issues

Patients presenting with a partially open system (excessive ETT or chest tube leaks) are difficult to manage. Depending on the situation and/or the ventilator utilized, there may be no other option than to switch to a pressure-control mode of ventilation for mechanical reasons. Clinicians must weigh the pros and cons of upsizing the ETT of a neonate. Monitoring and managing tidal volumes may save the patient from future injury.

Inconsistent respiratory effort by the patient can drastically change their lung compliance. If a patient is becoming stronger and can assume the work associated with breathing spontaneously, this is a positive. However, if a patient's increased work of breathing is associated with a metabolic acidosis, the ventilator algorithm lowers support and inappropriately shifts all work associated with breathing to the patient. If a patient is hyperventilating associated with pain or withdrawal symptoms, the ventilator may lower support and once again shift the work of breathing over to the patient. This may add insult to injury if a patient has a good reason to need support throughout their illness. Most ventilators' volume-targeting algorithms change over time or over several breaths. Some will not allow the delta pressure to go below or above a set pressure of 2–5 cm H_2O to assist with the concern that patients could be essentially weaned to continuous positive airway pressure or no support. It is important to know how the ventilator functions in a given scenario and what to expect in those situations.

Equipment issues

Ventilator manufacturers monitor and manage tidal volumes differently in volume-targeted ventilation. It all starts with a test breath to measure dynamic and/or static compliance. The following breaths will be augmented by increasing or decreasing the delta pressure based on the targeted tidal volume and the results of the previous breath. Some ventilators adjust this pressure based on the inspiratory tidal volume while others adjust the pressure based on the expiratory tidal volumes.

Additionally, some ventilators measure the tidal volumes proximally to the patient wye while others measure distally within the internal components of the ventilator. A distal flow sensor built within the ventilator can be larger, reusable, and protected from secretions. However, these internal-flow sensors are susceptible to leaks and must compensate for volume loss within the ventilator circuit. Flow sensors designed to sense airflow proximal to the ETT appear to be favorable in the neonatal population and can accurately measure tidal volumes closest to the patients with ease.[3] Unlike its distal counterparts, proximal flow sensors present some disadvantages. The proximal sensor adds dead space and weight to the airway. Because it is close to the airway, it is susceptible to being negatively affected by humidity and secretions, often needs frequent cleaning or calibration, and requires the clinician to break the circuit to address these issues.

Patient synchrony

Modes of ventilation are defined by how they interface with the patient's spontaneous breathing efforts. Ventilation can be flow or pressure triggered. With the capability to measure flow accurately, flow trigger tends to be the most widely used and acceptable form of

patient-ventilator interaction. When patients interact and synchronize with the ventilator, there is better distribution of ventilation, improved oxygenation, improved compliance, decreased incidence of ventilator-induced lung injury, decreased use of sedation, and reduced time spent on mechanical ventilation.

Until recently there were only two ways a patient could trigger the ventilator. The clinician sets the sensitivity level, but this can commonly lead to the ventilator autocycling breaths, especially in neonates. Neurally Adjusted Ventilatory Assist (NAVA®), a proprietary mode of mechanical ventilation by Maquet, incorporates a unique patient triggering system that relies on a specialized nasogastric tube lined with electrodes that uses the electromyographic signal from the diaphragm to trigger assisted mechanical ventilation. In theory, this form of triggering and support is particularly useful for patients with gas trapping and automatic positive end-expiratory pressure who have a high work of breathing due to triggering. Leaks or secretions do not affect this form of triggering; therefore, auto-cycling and hypocapnia in newborns can virtually be eliminated. This modality does require the invasive placement of a gastric tube and is not a volume-targeted mode of ventilation. A recent study published by Toledo Children's Hospital conducted a retrospective study of 52 neonates weighing less than 1,500 grams. This is the largest study published to date looking at the use of NAVA in neonates. When comparing NAVA to the pressure-controlled synchronized intermittent mandatory ventilation mode, patients on NAVA had statistically lower blood gas parameters (lower arterial carbon dioxide tension, higher pH).[4]

Tidal volumes

What are the appropriate ranges of tidal volumes that we should target for neonates? A randomized controlled trial by Lista et al examined tidal volume delivery of 3.5 mL/kg and 5 mL/kg to examine inflammatory effects of ventilation on the lung. Patients in the 3.5 mL/kg group showed an increase in cytokine levels and subsequently had prolonged mechanical ventilation (9.2 days versus 16.8 days). Clinical trials of volume-targeted ventilation for neonates typically target tidal volumes of 3–8 mL/kg. Lista et al also compared a volume-targeted ventilation mode with a 5 mL/kg target tidal volume to high-frequency oscillatory ventilation (HFOV) and discovered that the HFOV group exhibited higher cytokine markers and longer oxygen dependence. Currently, a strategy of 4–6 mL/kg targeted tidal volumes seems most beneficial in current clinical trials, but more research is needed to validate and confirm these results.[5]

RTs need to comprehend patient factors

Volume-targeted ventilation is an important component of neonatal mechanical ventilation, but accomplishing its primary objective continues to be a challenge. There are many factors that make mechanical ventilation a success or failure. Understanding individual patient factors that influence the efficiency of volume-targeted ventilation is essential. Paying attention to pressure or tidal volume selection is vitally important. This type of technology available at an institution plays a key role and drives clinical practice. Not all ventilators function the exact same way; therefore, each machine and modality must be properly understood in order to help the clinician provide excellent care. ■

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Chronic Disease Manager

Educating the Elderly with Asthma

by Rhonda Vosmus, BS, RRT-NPS, AE-C

Asthma is a complex disease, most simply defined as a chronic inflammatory disease that appears in episodes affecting patients of all ages. In the past 40 years, asthma incidence rates have increased across all age groups, including adults 65+ years of age.[1,2] Prevalence of asthma in adults over 65 is 4%–8%.[3] Despite having similar incidence across age groups, asthma in the elderly is underdiagnosed, undertreated, and underprescribed as it relates to guideline recommendations for inhaled corticosteroids. Older adults with asthma have a higher rate of allergic sensitivity, decreased lung function, and a significantly reduced quality of life compared to older adults without asthma. In many cases, educating the elderly can present challenges not dissimilar — but somewhat unique — to all ages of patients with asthma.[4]

The May 2012 report from the Centers for Disease Control and Prevention states that 25 million Americans have asthma.[5] There is a major economic burden to the health care system. Undertreatment of asthma can result in suboptimal asthma control and even a potential cost increase for the elderly asthma patient. Cost is not the only disproportional burden for the elderly patient with asthma; there is also a higher morbidity rate for asthma inclusive of unscheduled ambulatory visits, emergency department visits, and hospitalizations.[3,6,7]

Environmental triggers

Environmental factors such as aeroallergens, irritants, and environmental tobacco smoke (ETS) exposure are recognized as strong risk factors for the development of asthma in all age groups. Although elderly patients with asthma have a high rate of sensitization to inhaled allergens (75%), evidence is lacking to define the relationship between aeroallergen exposure and asthma morbidity in this understudied patient population.[7] In adults, a positive association exists between smoking and asthma exacerbations and impaired lung function. Up to 50% of older adults with asthma are current or former smokers.[8,9] Current smokers with asthma are less responsive to treatment with oral corticosteroids during acute exacerbations than non-smoking patients with asthma. Passive or secondhand ETS exposure in the elderly as it relates to asthma control and exacerbations has not been adequately studied. Air pollution is an additional contributing irritant, though not just in the aged population. Ozone levels may also be a contributing factor to the development of asthma in the elder population because repeated exposure to irritants and pollutants can contribute to increased airway hypersensitivity. The adult patient's sensitization to aeroallergens such as dust mites, cat and dog dander, and aspergillus mold has been associated with a reduction in the forced expiratory volume in first second (FEV_1) and increased asthma symptoms.[10]

about the author...

Rhonda Vosmus, BS, RRT-NPS, AE-C, is an asthma educator specialist at Maine Medical Center in Portland, ME. She is also the asthma educator of AH! Asthma Health.

Medication management and adherence

Medical management of the elderly asthma patient is similar to that of all other age groups. Inhaled corticosteroids are considered front-line therapy for persistent disease by the National Heart, Lung, and Blood Institute's (NHLBI) guidelines which state a multi-pronged approach to reducing known allergic triggers is deemed helpful, and smoking cessation is recommended for the asthma patient who smokes.[11] Because beta-2 receptor responsiveness may decline with age while anticholinergic responses remain intact, elderly asthma patients often respond best to a combination therapy with beta-2 agonist and anticholinergic inhaled therapies.[12]

Comorbid conditions such as gastroesophageal reflux disease, congestive heart failure, COPD, as well as sinusitis and the potential for medication interactions need to be assessed and evaluated in the elderly asthma patient. Obesity has also been suggested as a possible risk factor for asthma in older women more so than for older men.[13]

Improving diagnosis and management of asthma in older people is reliant on more widespread use of spirometry — the gold standard for diagnosing and managing asthma. Absence of airway obstruction does not rule out asthma, especially if the patient is not symptomatic at the time of testing. The NHLBI has published evidence-based guidelines identifying normal ranges for FEV_1 and FEV_1/FVC for asthma diagnosis and management. It is important to note that there is a natural decline in lung function as one ages.[11]

As with all chronic illnesses, diagnosis is essential to appropriate treatment and management. Older people may also present to medical professionals for treatment less frequently for asthma-related symptoms. Breathlessness is a symptom for up to one-third of older people and is often attributed to age-related physiological changes. Cognitive impairment, social isolation, and the knowledge and beliefs of older people may also prevent diagnosis or lead to physicians/health care providers underestimating the severity of the disease or acute exacerbation.[14,15]

Even when asthma is properly diagnosed and managed, there may still be barriers to quality of life in the older population. One such barrier to adherence may be medication cost. Also affecting the level of asthma control in the elderly and across all age groups are cognitive and mental fitness, adherence, and health literacy — which is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."[16]

Cognition and mental fitness

A patient's ability to appropriately manage their disease may be affected by cognitive status, functioning hand strength, eyesight, and self-confidence. For example, a study of 117 asthmatics aged 65–102 found that adherence to asthma therapy was affected by the levels of both cognitive impairment (measured by the Mini-Mental State Examination) and depression. Inadequate timing of actuation and inhalation from a metered-dose inhaler (MDI) is the most frequent error made. The majority of elderly patients are unable to properly use MDIs even after proper instruction.[17] Objective measures show that only about 60% of all asthma patients take their medications as prescribed.

Elderly patients are not different. In fact, van Eijken et al have claimed adherence in this population varies from 26%–59%.[17] Self-management interventions that promote self-monitoring, regular visits to the physician, and active use of a personalized asthma action plan consistently have been shown to lead to improvement in numerous health indicators. Not all patients wish to, or have the capacity to, self-manage their asthma. Elderly patients, in particular, may not be open to the idea of self-management and may thus need to be encouraged and educated to take on a more active self-management role.[15,17]

Programs that are established to identify barriers of asthmatic patients and facilitate targeted interventions have demonstrated positive patient outcomes. The AH! Asthma Health Program at Maine Medical Center in Portland, ME (the first certified Asthma Self-Management Education Program by the AARC), provides one-on-one

Affecting the level of asthma control in the elderly and across all age groups is health literacy — which is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."

Table 1. Process and Outcome Measures of the AH! Asthma Adult Study (Ages 19+) for the Maine Medical Center, Cohort #11

Baseline (n=68) to 6-month Follow-up (n=38): 55.9% Response

Measure (yes)	Baseline (T1)		6-Month (T2)	
	n	%	n	%
Controller medication used for persistent asthma	30	78.9	27	71.1
Emergency department visits in past 6 months	16	42.1	1	2.6*
Hospital admission in past 6 months	9	23.7	0	0.0*
Bursts of corticosteroids in past 6 months	22	57.9	3	7.9*
Missed school/work days in past 6 months	24	63.2	16	42.1
Asthma Action Plan in place	12	31.6	33	86.8*

*Change from T1 to T2 is statistically significant (McNemar p<.01)

education and self-management training to all age groups, including the elderly. We celebrate our successes with positive patient satisfaction surveys and outcome data that support direct and indirect reduction in health care costs across ages.[18] See Table 1.

AH! has observed that working with the elderly asthma patient brings similar challenges as working with any age group. Using motivational interviewing has set the stage for more open dialog, allowing the patient to set goals at the initial visit. Each visit is initiated with, "How can I be helpful to you today?" We have discovered that when we discuss what the patient wants to talk about first, there is more interest and time to deliver key messages throughout the visit. Volume of speech, cadence, and basic terminology are keys to a successful asthma education session as well as a demonstration of how to use devices and perform return demonstration. Additionally, a written and pictorial plan is key to asthma self-management plans.

More research needed

Appropriate recognition of asthma and prescribing medications by primary care providers can improve outcomes, reduce direct and indirect health care costs, and improve quality of life across all ages.[19] Additional studies are needed to better understand reasons for undertreatment and poor adherence in the elderly. Future studies may be designed to look at interventions and approaches with this age population, asthma self-management education, and the potential improvement of quality of life in the elderly patient with asthma. ■

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Empowering Our Patients

by Thomas J. Kallstrom, MBA, RRT, FAARC

We often easily assume that our patients have the same level of health literacy (HL), but in actuality nothing could be further from the truth. Our patients' level of understanding varies widely for a number of reasons, and it is up to us to determine what their HL level is and then teach to that level of cognitive capacity. For successful self-management of chronic lung disease, patients must possess a heightened level of ownership of the management of their chronic lung disease; and it becomes our responsibility to impart the requisite knowledge so that the patient and family can adequately assimilate it.

The first thing we need to do is to define the term "literacy." According to "Healthy People 2010," health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make an appropriate health decision.[1] This is a relatively new term but one that is key to ensuring that anything we teach our patients must be provided with the patient's cognitive capacity in mind.

Understanding health literacy

It is also important to try to understand the influences of why the patient may have lower HL. Many factors come into play, some of which include cultural beliefs, past experiences, depression, as well as their level of cognitive capacity.

When we look at this from the perspective of chronic lung disease, it is even more important to realize that limited HL is often associated with poor health care outcomes. There are recent studies that indicate that lower levels of HL are associated with greater COPD severity; and as a result, these patients are more likely to have an unplanned emergency intervention (emergency room visits and hospitalizations).[2] Plus, by contrast, patients with higher levels of formal education are likely to experience better health outcomes because of an ability to better self-manage their disease and to navigate the health care system.[3]

It is estimated that one in three adults in the United States has low health literacy.[4] There are even more startling data that indicates it may be more like half of all American adults who have low HL.[5] In fact, 36% of America's adult population cannot perform daily activities that require basic reading, writing, and numeric skills.[6] It is this problem that may be at the core of why patients with COPD and other chronic diseases readmit to the hospital so often. If they are not initially taught proper self-management skills at a level they can understand, they may be unable to adequately manage their disease. We will be faced with this problem on a much larger basis as the baby boomers age and try to manage their chronic lung disease.

about the author...

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

Enabling our patients

Empowering our patients with the skills they need must be part of the counseling that we provide to our patients. First, we need to understand that we may be part of the problem. As we educate them, we may find ourselves using medical jargon that is just not discernable for patients and their families. This is something we need to avoid. Physicians have been noted to be somewhat deficient in this area, and this conclusion is likely to be said for most other clinical disciplines.[7]

When teaching patients and caregivers, there are some reasonable considerations that we need to remember when educating patients.

- Do not use medical jargon.
- Use drawings and photos to help enhance the point you are trying to make.

- Limit the education to brief periods of time (less than 10 minutes).
- Have the patient recap what has been taught so that you can be assured that they understood.
- When asking questions, make them open-ended questions, not yes and no response questions.
- Be supportive and nonjudgmental.

The AARC has developed many educational materials specifically for patients. They are all written at a fifth grade reading level, which is the suggested level for any patient education. If you are preparing patient-specific education, I suggest you look at the materials we have prepared or check out the U.S. Department of Health and Human Services, which has developed the "Quick Guide to Health Literacy and Older Adults."[8] This guide provides the reader with the basics of what should be understood in health literacy. It also includes techniques for improving HL; and while directed at the older population, much of this is useful for all ages.

If we are to be effective teachers, we need to ensure that our message is clear and that we take the time to understand the patient's level of health literacy.

As respiratory therapists, we know we are an essential part of the self-management education for patients with chronic lung disease. If we are to be effective teachers, we need to ensure that our message is clear and that we take the time to understand the patients' level of HL. ■

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I'm Sorry

by Anthony L. DeWitt, JD, RRT, FAARC

One of the fundamental things children are taught at the earliest age is that it is possible to hurt someone's feelings and that when you do, the appropriate thing to say is "I'm sorry." Apologies are supposed to make a person who's been hurt by something feel better because the person apologizing is expressing remorse. Apologies are good for both the victim and the perpetrator because they are aimed at ending hurt feelings and converting negative emotions into positive ones. But for years, lawyers advised clinicians never to apologize.

This is because while an apology, like a confession, "cleanses the soul," under the law an apology was an "admission" and had the ability to cleanse a person's bank account as well. While having such a rule of law was frankly good for lawyers, it was bad public policy because it encouraged people to hold grudges and, sometimes, to act on those grudges.

Admission of fault

In nearly every state now there is a law on the books that says that an apology is not an admission of fault. A list of those statutes can be found at the American Society for Healthcare Risk Management's website (www.ashrm.org). As one example, California's Evidence Code provides:

(a) The portion of statements, writings, or benevolent gestures expressing sympathy or a general sense of benevolence relating to the pain, suffering, or death of a person involved in an accident and made to that person or to the family of that person shall be inadmissible as evidence of an admission of liability in a civil action. A statement of fault, however, which is part of, or in addition to, any of the above shall not be inadmissible pursuant to this section.

California's statute is remarkably clear. It tells clinicians apologizing is OK but that admitting fault is not. So, how does one draw the line? When does "I'm sorry" become an expression of a general sense of benevolence, and when is it an admission of fault?

Words matter and, of course, so do intentions. The law in most states has always been that if a person has a car accident and jumps out and says "I am sorry, this was all my fault," that the admission of fault comes in even if the "I'm sorry" does not. The theory was that when people are excited, and in the immediate grip of whatever accident has befallen them, they tend to speak the truth to others.

An apology takes the form of "I am so sorry…" followed by a description about what the person is sorry about. "I am so sorry for the loss of your husband" is an expression of general sympathy protected by the statutes in most states.

"I am so sorry we screwed up the ventilator settings," on the other hand, is not an expression of general sympathy; it is instead an admission that you did something wrong. That statement is likely admissible in court.

Sorry Works!

There is a lot of research that supports the idea that patients who receive a sincere and complete apology tend to be less willing to sue than patients who receive either a lukewarm apology or no apology at all.[1] Another problem is that an apology without an explanation is sometimes worse than no apology. One organization that seems to have figured out the proper sequencing and methodology for apologies in health care is called Sorry Works![2] Their website, www.sorryworks.net, con-

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.

tains a great deal of material about their program. It is worth your time to read the contents of the website. It basically lays out a three-step process for disclosing a medical error.

The first thing that happens when there is a medical event with an unexpected or improvident outcome is to make a heartfelt apology to the family. This takes the form of "we are so sorry that your loved one passed away in the ICU today." The apology stops there. It does not admit fault. Rather, it expresses a feeling of general sympathy.

The second step is to investigate the nature of the medical event that occurred to determine if there is either medical error or real medical fault. Clinicians sometimes have a real problem with this because they assume that if there is medical error, there must be medical fault. But the best analogy is that of running a stop sign. If you run a stop sign and hit another car, you are not only negligent, you have caused harm. But if you run the stop sign and don't cause any damage, you may well be negligent, but you haven't caused any harm. So just because a treatment is missed, an incorrect drug is given, or a patient experiences a mucous plug, that doesn't mean the error or untoward event is actual fault or the kind of thing for which a jury would award damages.

The investigation is best done by people who don't have an interest in the outcome and who can exercise independent judgment. A hospital attorney should be involved and should direct the process. Medical and nursing opinion should be sought from persons who did not provide care. For example, if the issue of fault involves a failure by nursing to act on certain symptoms, then nurses from another unit with similar experience should be asked to evaluate the facts and make a decision on whether there is fault.

There is a lot of research that supports the idea that patients who receive a sincere and complete apology tend to be less willing to sue than patients who receive either a lukewarm apology or no apology at all.

Sorry Works! believes that if there is fault, then fault should be admitted and some reasonable compensation should be paid to the family, along with a detailed explanation of how the hospital will prevent the error from occurring in the future. Similarly, if there is no fault, Sorry Works! describes their system as "compassion with a backbone"; and if there is no fault, then no compensation will be offered and any lawsuit will be defended.

Of course, if fault is admitted and the family doesn't want to accept the compensation the hospital offers, they can get an attorney and file a lawsuit. So it might appear that the Sorry Works! approach carries with it a great deal of risk. But actually, quite the opposite is true. If a hospital makes full disclosure and admits fault, then a jury will likely have to determine damages. What drives damages higher in medical negligence cases is refusal to admit error and covering up the incident. If the hospital has been honest up front about what happened, the kind of emotion necessary to generate a large damage award is often absent. Compensation tends to be fact driven rather than emotionally driven.

Decision needed at facility level

Whether to adopt the Sorry Works! approach or not is a decision for each hospital, but certainly the evidence is that it reduces claims and improves the hospital's image in the community.[1] ■

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The Correlation Between Pediatric Sleep Apnea and Comorbidities

by Sheri Tooley, BSRT, RRT-NPS, FAARC

Is there a correlation between pediatric sleep apnea and comorbidities such as obesity, failure to thrive, asthma, attention deficit hyperactivity disorder (ADHD), and primary nocturnal enuresis? While many of these conditions coexist, studies showing a cause-and-effect relationship are few. A review of the literature gives us little but a renewed sense of the need for further study.

The facts

Sleep is an important part of pediatric wellness. Decreased or restless sleep causes a wide variety of negative outcomes. Among these is an increase in accidental injuries, reduced academic performance, obesity, and increased parental stress. Sleep-disordered breathing (SDB) encompasses snoring and apnea. Habitual snoring is the hallmark of an increase in upper airway resistance with up to 27% of children being affected.[1] The underlying pathophysiology of SDB includes increased airway resistance, inflammation, sleep architecture changes, and gas exchange abnormalities.

Obstructive sleep apnea (OSA) prevalence is estimated to be 2%–3%, affecting 2 million American children.[2] OSA is most common in young children between the ages of two to eight years. The two major determinants are enlarged tonsils and adenoids (T&A) and obesity. More that 530,000 tonsillectomies are performed annually on children below 15 years of age with a primary diagnosis of SDB.[3] OSA can lead to morbidities affecting the central nervous system, cardiovascular and metabolic systems, and growth, reducing quality of life.

about the author...

Sheri Tooley, BSRT, RRT-NPS, FAARC, is the respiratory care education supervisor at Rochester General Hospital in Rochester, NY.

The studies

Obesity — As with adults, obesity appears to have the strongest correlation in pediatric OSA. The prevalence of childhood obesity is increasing worldwide. With pediatric obesity on a sharp rise over the last 20 years, sleep centers have seen a marked rise in referrals for testing because these obese children are at higher risk of developing sleep-disordered breathing.[4] The studies showed an increase in the prevalence of all types of SDB, specifically snoring, OSA, and central sleep apnea. The central apneas were found to be followed by severe oxygen desaturations. Associations between obesity and SDB prevalence appear to be more severe among children of certain ethnicities. This is most notable with African-American children but also may include Asian and is thought to be related to anatomic and/or physiologic differences. The limited account of literature concludes that SDB may put obese children at even greater risk of inflammation, hypertension, and cardiovascular disease through common inflammatory pathways with obesity.[4] Obese children with OSA also report the lowest quality of life among children who are obese and comparatively as low as children with cancer. A 2007 study published in the *Journal of Pediatrics* concluded that "insulin resistance in obese children is associated with short sleep duration and OSAS," as shown in Table 1.[5]

Asthma — Studies have also shown that OSA is highly prevalent among children with mild-to-moderate asthma. Treatment of OSA with T&A surgery appears to reduce the number of asthmatic exacerbations requiring beta-agonist inhaler use, steroids, and emergency room visits. This suggests

Table 1. Disorders Associated with Childhood Obesity

Cardiovascular
Hypertension
Left ventricular hypertrophy
Atherosclerosis

Pulmonary
Asthma
Obstructive sleep apnea

Skeletal
Blount disease
Slipped capital-femoral epiphysis

Metabolic
Insulin resistance
Dyslipidemia
Metabolic syndrome
Type 2 diabetes

Gastrointestinal
Non-alcoholic fatty liver disease
Gastrointestinal reflux

Other
Polycystic ovary syndrome
Pseudotumor cerebri

an association between upper airway inflammatory processes and lower airway inflammation and asthma. T&A surgery — rather than continuous positive airway pressure — is the first line of treatment in pediatric OSA and is curative in 75%–100% of the cases.[6] Despite this finding, it is still not known if OSA treatment changes the course of asthma in these patients.

ADHD — Several studies looking at the correlation of ADHD and related behavioral abnormalities fail to show a direct cause-and-effect relationship. While studies report that OSA contributes to behavioral problems through sleep fragmentation and hypoxia, no study has shown a conclusive causal relationship between ADHD and OSA. The only case control study available cited its small sample size (n 28) as a limiting factor for drawing a firm conclusion. They did recommend that children being treated for ADHD continue to be evaluated for SDB and suggested that reducing or eliminating the need for stimulant medications in these children is sometimes achieved by addressing their SDB.[7]

Nocturnal enuresis — Nocturnal enuresis (NE), or bedwetting, affects approximately 12% of children between the ages of five and 15. Some studies site NE in T&A patients at around 35% with an improvement after surgery of up to 76%. Enuresis can be caused by a nervous system maturation delay, anomalies in the urinary tract, inadequate antidiuretic hormone, and psychological factors. Recent associations with OSA have been suggested. The limited number of studies available concluded that OSA should be considered in NE.[8]

More research needed

Pediatric sleep apnea continues to pose more questions than answers with respect to the correlation of comorbidities. Obesity has the strongest evidence of a cause-and-effect relationship, but there are still a number of obese children who do not have OSA or SDB. Unlike adult treatment, tonsilloadenoidectomy appears to be the treatment of choice, based on the references below. Relationships exist within these morbidities, but it remains unclear if there is a causal relationship or if the apnea exacerbates the comorbid conditions. All studies reviewed identified significant limitations; studies need to be done in the field of sleep-disordered breathing and apnea. ■

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Respiratory Care in the U.S. Department of Veterans Affairs

by Larry Conway, BS, RRT, FAARC

Some of you may know me from over the years, as I have been engaged in respiratory care for more than 35 years in most all imaginable types and sizes of facilities. In early 2009, I joined the Veterans Affairs (VA) hospital here in Washington, DC, and thus began my first experience as a government employee. Working for the government is different. Working in the VA — with its military heritage — is even more different. But the VA offers lots of opportunities and advantages for respiratory therapists, and I was invited to share some information about respiratory care in the VA with you.

Generally, respiratory care in the VA is little discussed, but hundreds of respiratory therapists are employed by the VA. To clarify, medical centers are part of the Veterans Health Administration, one of three divisions of the Department of Veterans Affairs. There are unique factors about working in the VA. For example, you may be surprised to know that the VA as a system does not require licensure of respiratory therapists. As a system, it requires credentials from the National Board for Respiratory Care (NBRC). However, many/most of the individual VA medical centers do now require licensure. Also surprisingly, unlike non-VA hospitals, a valid license from any U.S. jurisdiction can allow you to work in any VA medical center (if it requires a license) in the United States provided you are also NBRC credentialed. Theoretically, the VA, like the military, must be able to move personnel "as needed where needed," and that need trumps state laws. This removes lots of the cost and time hassles of relocating from one state to another. For example, I work in DC with a Pennsylvania license obtained when I worked there briefly.

about the author...

Larry Conway, BS, RRT, FAARC, is the chief of respiratory care at the Washington DC Veterans Affairs Medical Center and also serves as the facility's coordinator of the controlled substance inspection program that monitors medication management.

Respiratory therapists are considered unionized in the VA. They are eligible for membership in the union but are not required to join.

VA opportunities

There are opportunities for new or expanded roles within the VA as RTs undertake new responsibilities. They can remain in the acute clinical setting, move to the home care environment in the home oxygen and/or telehealth programs, or focus on long-term care issues in the community living centers that are attached to lots of medical centers. Respiratory therapists can move into management at the department level or higher. Some medical centers have respiratory therapists functioning as case managers for respiratory patients, and some RTs have transitioned into levels above or outside the respiratory service, such as Administrative Officer of the Medical Service. Other medical centers have RTs working in community-based outpatient centers. It is not unusual for former chiefs of respiratory to transition to positions that are beyond or outside of their prior specific expertise based upon capabilities and performance.

The scope of practice for RTs varies from facility to facility as needed. In some, respiratory therapists insert arterial lines and perform intubations outside of the operating room. In some, respiratory therapy provides care in all units and service areas of the facility, while in others RTs are focused in just critical care units. In some facilities, respiratory care includes pulmonary function, the bronchoscopy lab, and the blood gas laboratory; while in others these are separate, reporting through different physicians. The old saying, "If

you've seen one, you've seen them all" definitely does not apply to VA Medical Centers!

In Fiscal Year 2010 the VA adopted the patient-centered medical home (PCMH) model, which has since become known as Patient Aligned Care Team, or PACT. This program is intended to transform the VA health care delivery system into one providing more patient-centric care. The long-term goals are to provide superb access to primary care (including alternatives to face-to-face care), seamless coordination of care between VA and non-VA providers, and a redesign of primary care practices and team roles to better focus on the patient. PACT focuses on team-based care and coordinated care among team members, which can offer RTs opportunities for expanded involvement.

Base pay in the VA is not usually the highest in a given market; but the VA does have something called locality pay, which compensates to some degree for the difference in costs of living in widely divergent areas of the country. For example, the locality pay for Washington/Baltimore is one of the highest because the cost of living is high here. This locality pay is added to base pay and is not always included in the quoted salary ranges. Sometimes special pay scales are created for exceptional market pay issues. The federal government has some of the best benefits and retirement packages.

An opportunity to consider

In this era of high unemployment, uncertainty in hiring in health care, and growing licensure costs, the VA is an opportunity to consider. Perhaps like me and hundreds of other respiratory therapists, you want to help fulfill President Abraham Lincoln's promise "To care for him who shall have borne the battle and for his widow, and his orphan" by serving and honoring the men and women who are America's veterans. For additional information, log on to www.VAcareers.va.gov or www.USAjobs.gov/. ■

EDITOR'S NOTE

Author Larry Conway, BS, RRT, FAARC, is not acting as a representative of the Department of Veterans Affairs or the federal government in preparing this article.

by Jeremy Parks, BS RRT

An Inside Look into the Life of a CFer

My name is Jeremy. I'm a respiratory therapist, and I have cystic fibrosis (CF).

Being a CF patient and an RRT gives me a unique perspective of the respiratory care profession. I have given several presentations titled "An Inside Look into the Life of a CFer," which addresses the various struggles CF patients face, how important respiratory therapy is in our care, and what it's like to be a patient.

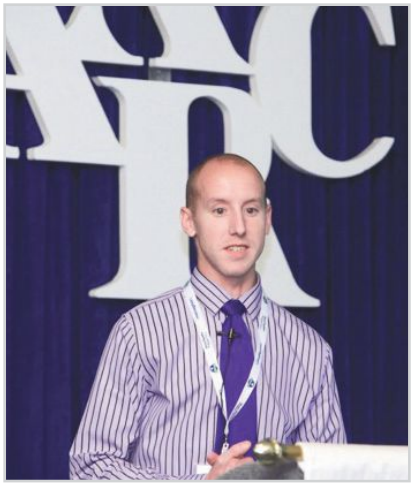
I was unofficially diagnosed with CF at birth and officially diagnosed at two years of age. I had an older sister, Christa, whom my parents lost when she was eight months old to CF and sepsis. Christa was the first in my family tree to be diagnosed with CF, and it was because of her that the doctors knew to test my younger sister Kara and me. Kara does not have CF.

As respiratory therapists, you know that cystic fibrosis is a hereditary disorder affecting the exocrine glands. It causes the production of abnormally thick mucus, leading to the blockage of the pancreatic ducts, intestines, and reproductive tracts and bronchi. It often results in respiratory infection. Now, if you were to tell someone with CF (a CFer) that they have a disease called cystic fibrosis and rattled off that definition, you would most likely get a resounding "WHAAAAT?!?!" The textbook definition of CF means nothing to CFers.

So what does CF mean to us?

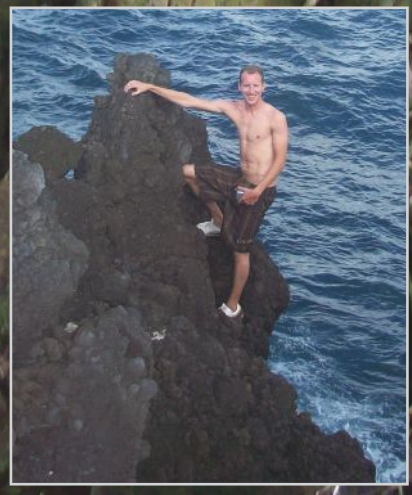
What cystic fibrosis means to us is determined by how it affects our daily lives. For example, from birth until around 13 years of age, CF meant virtually nothing to me. It was a label I carried. CF meant I had to take treatments (that I never took). I had to go to the doctor and have breathing tests, chest x-rays, blood draws, and was asked to cough something into a cup, which I could never do. I could outrun every kid I knew. I played soccer, baseball, and basketball. I wasn't affected, which to this day is still a phenomenon we do not understand. I have the DDF508 gene, the most common CF mutation. There are others with the same genetic mutation who have been hospitalized three to four times a year since they were born. Why do I have such a mild case? No one knows the answer to that yet, but hopefully someday we'll understand why there is such a variance in severity.

Then, between the ages of 14–17 I noticed I kept getting "colds" twice a year when the seasons would change, and I had to take antibiotics. Each year they seemed to last longer and longer. I wondered if they might be related to my "CF" but brushed it off as a coincidence. At 17, I made the mistake to beat all mistakes: I started smoking. I enjoyed the buzz from it and liked blowing the smoke. I was cool. I was very under-educated about cystic fibrosis and its effects on the lungs. I blame myself. My parents and physicians tried to educate me and get me to take treat-



Jeremy Parks, BS, RRT, is a staff therapist at Barnes-Jewish Hospital in St. Louis, MO.

My wife gave me a new reason to fight the disease.
My goal now is to live as long as I can for her.



To all the RTs reading this, I would like to thank you on behalf of the CF community.

ments. I didn't listen because I didn't notice anything was wrong. Subsequently, at age 18 I had my first hospital admission. Another admission followed a year later. Having to be hospitalized scared me to death. From that age on, I began taking better care of myself as I watched the disease affect me more and more.

Learning to cope with a "lifestyle disease"

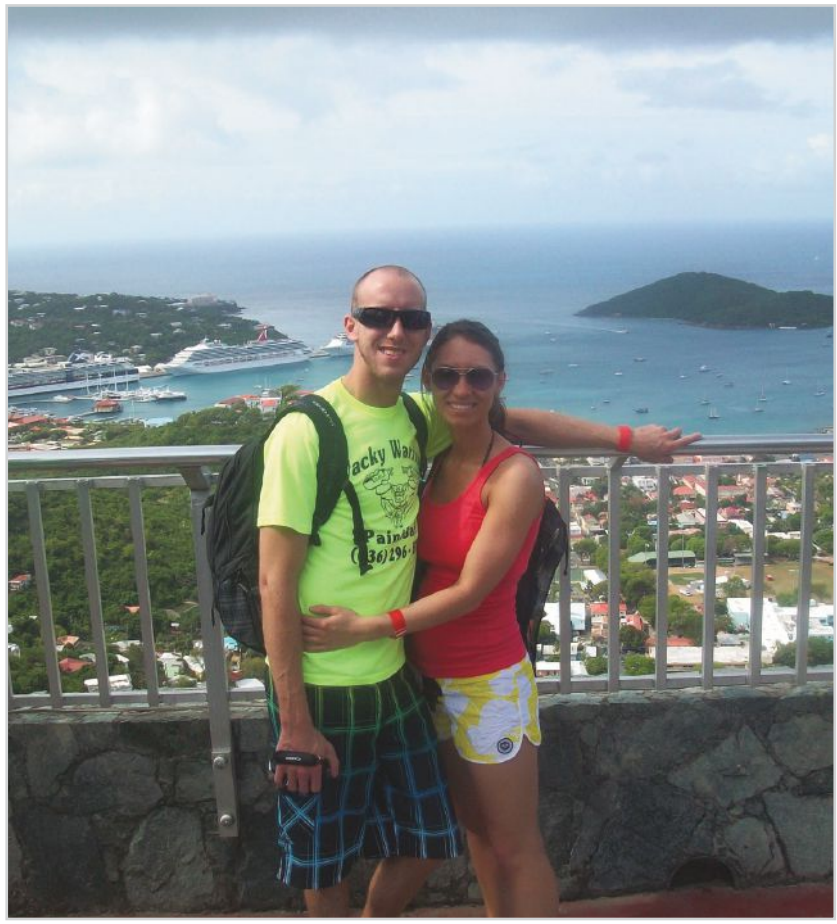
Now, each year my view of CF changes as it progresses. I did a research project in a college composition class about cystic fibrosis. I thought it would earn me a sympathy "A." It worked! However, at the same time I learned a great deal about CF, which is a lifestyle disease. By that, I mean our lifestyle has to be molded around the disease. This is crucial because if we are unable to do this, we will not cope with the disease and will struggle, be much sicker, and die faster.

I have several ways I cope. I work eight-hour shifts. Most people would rather work 12-hour shifts; but when I worked 12-hour nights, I never took treatments on the days after I worked — I was too tired. Eight-hour shifts work for me. They give me plenty of time to do my treatments when I get home and still have a life. I try to get eight hours of sleep a night. My doctors stress that I need eight hours because my body is constantly fighting infection and burning energy.

I take pills with every meal, every day. CFers are deficient in the vitamins A, D, E, and K, which are fat-soluble vitamins. Due to our pancreatic insufficiency, for which we take enzymes, we cannot absorb those vitamins and must supplement them.

I take two sets of treatments for a total of around two hours minimum every day. I get up at 5 a.m. before work and do a set, then I do another set when I come home. In the morning set, I take albuterol, 7% hypertonic saline, whatever inhaled

(Continued on page 26)



Why I Became a Respiratory Therapist

by Jeremy Parks, BS, RRT

I started my college career as an engineering major but realized my first year that it was not for me when I discovered that I don't like math or physics enough to be an engineer.

I was torn as to which direction to choose until my mother recommended respiratory therapy. I visited St. Louis Community College – Forest Park (Missouri) and looked into it. After realizing it was something I could really enjoy, I applied.

My initial motivation for becoming a respiratory therapist was to work at Cardinal Glennon Children's Medical Center, as that is where I grew up going to clinic and where I had my first two admissions. I wanted to work with CF kids and use myself and my story as a motivator. I wanted to try and get them to start taking care of themselves early in life and not make bad life choices, such as smoking, like I had.

However, right before graduating I realized this would not be a possibility, as CFers are not supposed to have contact with one another for fear of spreading bacteria. However, I have found that living with a respiratory disease gives me a way to connect with the patients I see daily. Hopefully, I can motivate them to look beyond their disease and live their lives taking care of themselves.

My wife and I also have a blog we run to inspire others at jeremyparks.blogspot.com, and we try to stay connected with the CF community to be an inspiration as well. ■

antibiotic I am on that month (I alternate between aztreonam one month and tobramycin the next month), and use my chest percussion therapy vest for 30 minutes. The afternoon treatment set is the same except for adding dornase alfa to the mix.

I exercise daily. With CF, exercise is a necessity. If I don't exercise and do two sets of treatments a day, my PFTs will drop. I have seen it happen when I am slack on my routine.

Ultimately, CF does not have to limit the *quality* of our lives; although at the end of the disease process, we know it will. CF is mentally, physically, and emotionally draining. Sometimes I get tired of having to take treatments, especially when there's something going on with my family or friends and I have to show up late because of taking treatments. I get tired of coughing. When I get sick or have an exacerbation, I cough like crazy. According to my physician, Daniel Rosenbluth, MD, the average CFer coughs around 600 times a day when they are not sick.

We also get tired of facing the mental and emotional struggles. Movies like "P.S. I Love You," where the lead character dies young and leaves his young wife a widow, are reality checks for us. CF is a terminal illness that fights constantly to destroy our bodies. There are no timeouts or breaks. We have to fight often and fight hard. We just get tired. Also according to Dr. Rosenbluth, the average CFer walks around with 2.5 million CFUs (colony forming units) of *Pseudomonas* in their lungs when they are "healthy" and around 10 million CFUs when they are having an exacerbation. Our body is constantly burning energy, trying to eliminate the infection — which is a never-ending battle.

Coping with self-pity

Lastly, we know someday, no matter how hard we fight, we will lose the battle.

There is a phase I think every CFer goes through — the self-pity (or "pity-party") phase. Some of us will live our entire lives in this phase. It is important, though, to accept the disease for what it is and understand that we cannot change it. We have to make the decision to fight the disease or let it kill us. At first, my decision was the latter. Then I met my wife. She changed my mind. When I made my decision the first time, I was not bitter. I had accepted cystic fibrosis for what it was: terminal. I didn't want to give up my limited time fighting a battle I knew I would lose. A lot of CFers make this decision for the same reason I did, and sadly, a lot of them never change their mind. My wife gave me a new reason to fight the disease. My goal now is to live as long as I can for her — to give her the best life I possibly can for choosing to love me in spite of my CF. Later this month, I will have two more reasons to fight, as my wife Monica is pregnant with twin boys via *in vitro* fertilization!

CF spouses face many struggles of their own. It takes an extremely special and dedicated person to marry someone with CF. They have no idea how long they will have with us. The median life expectancy is still only in the mid-upper 30s, according to the Cystic Fibrosis Foundation. CF spouses will also face numerous financial burdens from medicine, hospital admissions, and (if you're lucky enough) a lung transplant.

I mentioned earlier that CF is a label I carry. As CFers, we carry labels with us everywhere we go. People say we are contagious, we can't have children, and we will all die before we turn 20. I have witnessed all of these labels. The worst was when the surgeon repairing a bowel obstruction I had in my early 20s deliberately did not reattach nerves to my stomach muscles or have plastic surgeons stitch me up because he labeled me as having "a poor prognosis of life" in his operative note. He was uneducated about the truth of my health at the time and about the advances in CF care. Because of this, I was left with stomach muscles that I still cannot tighten and a rough-looking scar (though I like to think it makes me look tough).

You are important to us

It's important to us that you take the time to care. After all, it's in the name of our profession, respiratory *care*. As an RT, you are the most important person in the care of the CFer. Make the most of your time with your patients. You could make a difference in their lives. You could be the reason they start taking care of themselves — all because you took the time to get to know them beyond their disease and care.

I have my own real-life hero. I have several really, but one is a guy named G.W. He was one of my RTs at my first hospital admission. He later became my supervisor for awhile. He has since become a lifelong friend. From the first time we met, he took the time to care. He invested his time into getting to know me and has been there through the years to encourage me, motivate me, and give me the "kick in the butt" I sometimes need. You could be someone's G.W.!

To all the RTs reading this, I would like to thank you on behalf of the CF community. Thank you for tolerating our unusual behaviors, our CF quirks, for beating on us, for taking the time to get to know us beyond our disease, and for caring! We really do appreciate it (even though we may not always show it). *Thank you!* ■

AARC Summer Forum

July 15-17

Concurrent Sessions for Managers and Educators

Pre-Summer Forum Sessions

July 14

- NBRC-Sponsored Item Writing Workshop
- CoARC Meet the Commission
- New Special Session - Clinical Preceptor and Inter-Rater Reliability Workshop

Here is a preview of what the AARC Summer Forum has to offer*:

Pre-Summer Forum Session

Clinical Preceptor and Inter-Rater Reliability Workshop: Clinical PEP (Practices of Effective Preceptors)

Standardizing clinical evaluations of students and staff is vital to the success and comprehension of new clinical responsibilities. This 4-hour interactive workshop will reinforce Practices of Effective Preceptors with emphasis on adult learning, mentoring, and evaluating learner performance. Perfect for program directors, DCEs and hospital-based clinical preceptors looking to improve the teaching quality in RT programs and respiratory departments.

Education Section

DR. FRED HELMHOLZ EDUCATION LECTURE SERIES

Teaching Students How to Stay Up-to-Date on Mechanical Ventilation Issues

Technological advances in mechanical ventilation are constantly evolving, creating unique challenges for program instructors. Teaching through a revolving door of new information is surely difficult, but how do educators stay competent with these advances and what techniques are best suited to optimize student learning? Susan Pilbeam answers these and other questions.

JIMMY A YOUNG MEMORIAL LECTURE

Unveiling the New Therapist Multiple Choice Examination

In 2012, the NBRC detailed the history, rationale and thought process for rolling out a combined written examination for the CRT/RRT credential. Now, they'll share results of the 2012 Job Analysis and Content Outline for the exam. Don't miss out on the opportunity to hear this information as well as other operational changes that will occur. Leadership from the NBRC will present and answer your questions.

Management Section

View From the C-Suite: Consultant Symposium

A lecture/workshop combination that first educates RT managers on the role of consultants, why they're engaged by hospitals, and the consultants' perception of the RT department. An interactive 2-hour workshop follows that prepares managers on what to do before, during and after a consultant comes to their department. Symposium will be led by a professional healthcare consultant from Galloway Consulting Company.

View From the C-Suite: High Reliability Symposium

The healthcare industry is developing a stronger understanding that safety is truly a science. Because safety is a "dynamic non-event", everyone must have a unified role in creating and maintaining a high reliability, safe culture. This symposium is a lecture/workshop combination that first educates RT managers on high reliability safety principles, followed by an interactive 2-hour workshop in which managers learn how to hard-wire these principles into daily practice. Symposium will be led by a professional healthcare consultant from HPI Consulting.

* Topics are subject to change.

Most sessions at the AARC Summer Forum are approved for CRCE® contact hours.

AARC Summer Forum is an educational meeting of the American Association for Respiratory Care.

For more details and to register now, visit the website at

AARC.org/education/meetings

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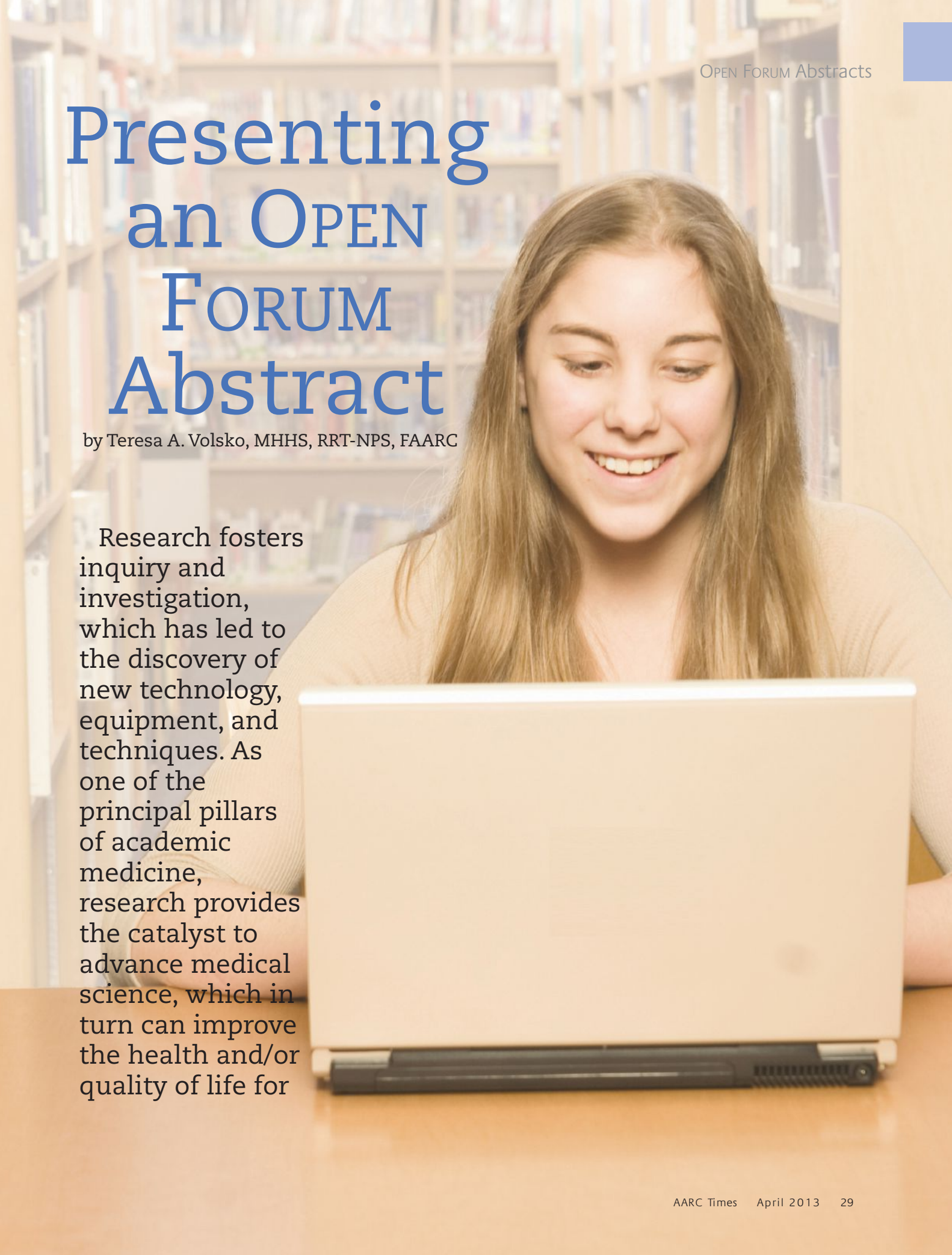
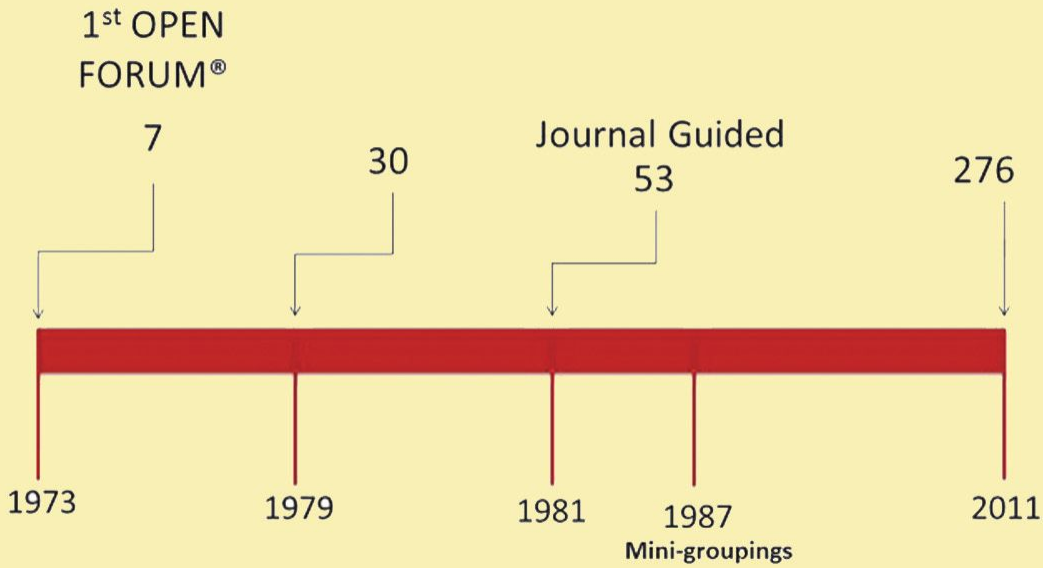
Presenting an Open Forum Abstract

by Teresa A. Volsko, MHHS, RRT-NPS, FAARC



Research fosters inquiry and investigation, which has led to the discovery of new technology, equipment, and techniques. As one of the principal pillars of academic medicine, research provides the catalyst to advance medical science, which in turn can improve the health and/or quality of life for

Figure 1. Historical Overview of Open Forum Presentations



NOTE: The timeline begins with the commencement of research presentations at national AARC-sponsored meetings.

the patients we serve. Respiratory care research is very important to our profession. This structured process provides a mechanism for respiratory therapists to test new ideas, investigate practices, and evaluate equipment and technology, as well as develop and refine processes to improve clinical outcomes.

Overview of the Open Forum

The AARC Congress provides several sessions (or Open Forum symposia) in which clinicians, students, educators, and managers share their research. This idea to provide a forum where research related to respiratory care could be presented and discussed was conceived more than 40 years ago. Seven abstracts were presented at the first Open Forum symposia, held at the 1973 annual convention of what was then named the American Association for Respiratory Therapy.[1,2] As shown in Figure 1, the number of abstracts accepted for presentation grew exponentially over the years. Today, research presented at the Open Forums can be divided into three broad categories: original research, case reports, and method or device evaluations.

At AARC Congress 2012, there were 300+ abstracts presented in 20 Open Forum symposia and published in Respiratory Care.[3] Table 1 shows the

Table 1. Breakdown of the 20 Open Forum Sessions Conducted at AARC Congress 2012

Aerosols & Drugs: Parts 1 & 2
Airways Care
Case Reports
Monitoring/Equipment: Parts 1 & 2
Homecare/O_2 Therapy
Asthma/Pulmonary Disease
Neonatal/Pediatric: Parts 1–3
Ventilation & Ventilators: Parts 1–3
Management: Parts 1 & 2
Education: Parts 1–3
Diagnostics/Sleep/Pulmonary Rehabilitation

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FOR COMPLETE DESCRIPTIONS, VISIT WWW.AARC.ORG/STORE

- **Medicated Aerosol Therapy – New Drugs and Devices**
  By Douglas S. Gardenhire, EdD RRT-NPS and Tom Kallstrom, MBA RRT FAARC
  Sponsored by monaghan™
- **Humidification During Mechanical Ventilation – A Review of the Literature**
  By Richard Branson, MSc RRT FAARC and Tom Kallstrom, MBA RRT FAARC
  Sponsored by Teleflex®
- **Caring for Patients with Chronic Critical Illness**
  By Shannon Carson, MD and Neil MacIntyre, MD FAARC
- **Cystic Fibrosis - A 21st Century Perspective**
  By Elliot Dasenbrook, MD MHS and Timothy R. Myers, MBA RRT-NPS FAARC
- **Optimizing Patient-Ventilator Synchrony**
  By Robert Kacmarek, PhD RRT FAARC and Tom Kallstrom, MBA RRT FAARC
  Sponsored by Dräger
- **Airway Clearance**
  By Timothy R. Myers, MBA RRT-NPS FAARC and Richard Branson, MSc RRT FAARC
- **VAP to VAE: Implication for the Respiratory Therapist - Ventilator Associated Events**
  By Dean Hess, PhD RRT FAARC and Kathleen Deakins, MHA RRT-NPS FAARC
  Sponsored by CareFusion
- **Oxygen Therapy in the Hospital**
  By Keith Lamb, RRT and Dean Hess, PhD RRT FAARC

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It is essential for researchers to follow the ethical policies established for clinical research.

specialty sections (or groups) of research presented at the 2012 Open Forum, as well as how the abstracts spanned the continuum of care — from transport and pre-hospital, to acute and critical care, to home care, rehabilitation, and long-term care. Some groups, such as neonatal/pediatrics or mechanical ventilation, had so many abstracts accepted for presentation that the session type was repeated on another day to accommodate all of the presentations.

Finding inspiration for research

Respiratory therapists interacting at the bedside, reading literature published in refereed journals, or finding use for new and/or novel devices are rich sources for potential research projects. Before any study is initiated, it is essential for researchers to follow the ethical policies established for clinical research involving human or animal subjects. The International Committee of Medical Journal Editors provides guidelines for investigating and reporting of research.[4] Respiratory Care also provides guidance for those interested in research. The October 2010 Journal provides an overview of respiratory care research,[5] information on the research design and methodology,[6] and the technical aspects of writing an effective abstract.[7] It is impossible in this article to highlight all of the exceptional abstracts presented at the 2012 Open Forum. However, the following provides an example of the type of research that is conducted, submitted for consideration, and accepted for presentation in the three main research categories: case report, original investigation, and method/device evaluation.

Uncommon clinical cases or a new or improved method of management or treatment of a particular disease process may serve as inspiration for a case report. Seventeen case reports were presented at the 2012 Open Forum.

Stephanie Bailes, RRT-NPS, from Akron, OH, was among those presenters. She reported her experience in treating atelectasis in a ventilator-dependent infant with bronchopulmonary dysplasia.[8] The abstract describes how atelectasis and respiratory infections can develop in the presence of an airway clearance regimen. This case report presented the use of an airway clearance device as a viable option for a population that was not previously described in the literature.

Abstracts describing original research or clinical investigations were also presented at the Open Forum. Melinda Shuler, BSBA, RRT, AE-C, from Asheville, NC, reported on the clinical and financial outcomes derived from the development and implementation of a regional asthma disease management program.[9] The implementation of this program provided better access to children in rural areas of North Carolina with poor access to health care. The Open Forum provided these researchers an opportunity to discuss how access to appropriate medical management and education improved health by reducing school absences, hospitalizations, and emergency room visits due to asthma exacerbations, as well as overall cost of asthma care.

There are times when it may be prudent to test the novel use of a device before it is used on patients. Method and/or device evaluations provide researchers with the ability to critically evaluate the risks and benefits of a process, tech-

After the clinical study or device evaluation is complete, authors submit a brief synopsis of the important elements of the research.

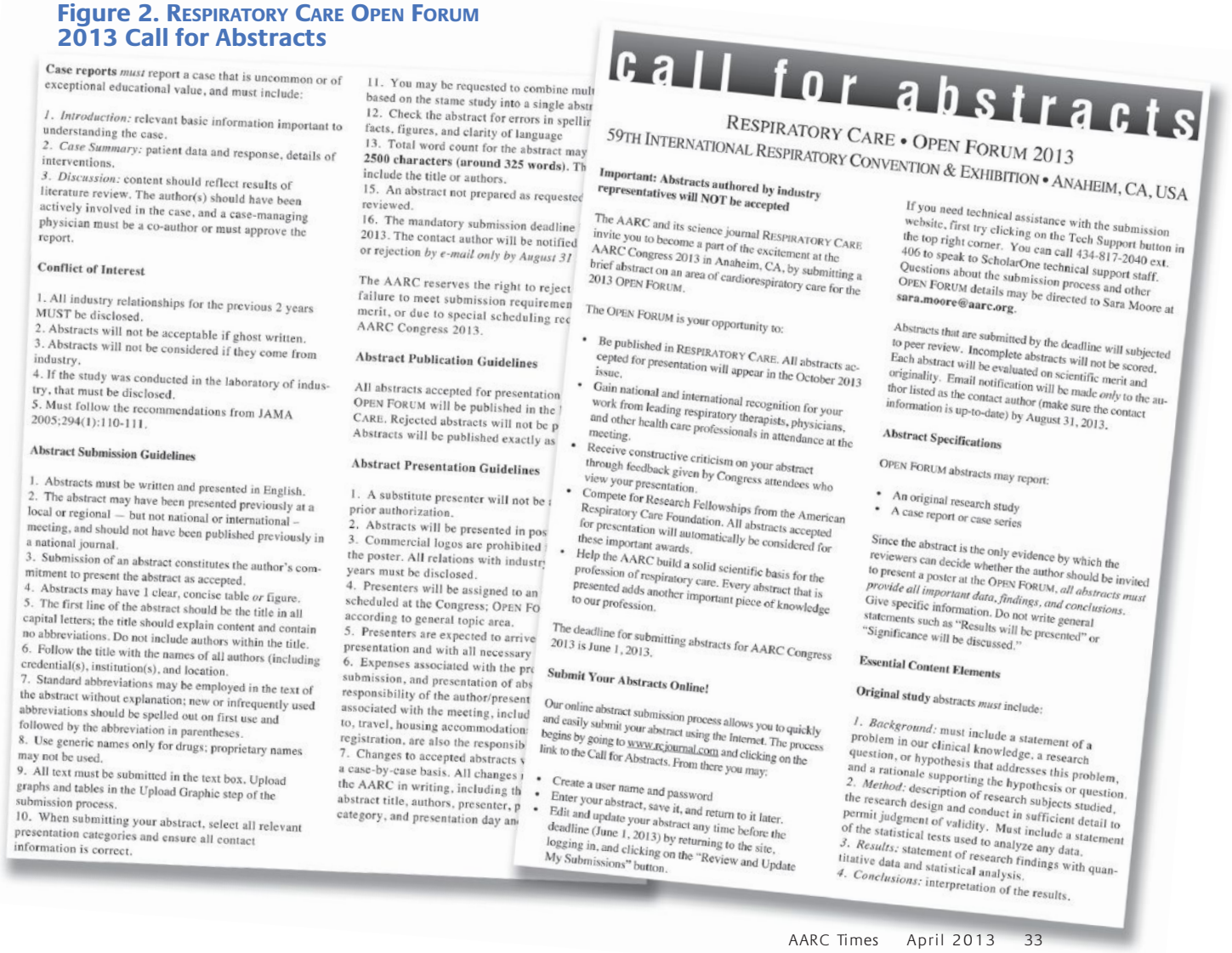
nique, or piece of equipment without the potential for patient harm. Arzu Ari, PhD, RRT, FAARC,[10] and colleagues used a simulated neonatal lung model to evaluate the effect high-flow cannula interfaces had on aerosol deposition. The researchers reported which flow rates would maximize dose efficiency with the high-flow nasal cannula and what interface to use with noninvasive ventilation. The authors concluded that one device was more efficient than another in their simulated model.

Writing and submitting an abstract

After the clinical study or device evaluation is complete, authors submit a brief synopsis of the important elements of the research. The abstract is a concise description of the investigation's purpose, design, findings, and implications. These elements are identical to those found in scientific papers published in peer-reviewed journals, such as Respiratory Care, only in a very condensed manner. The authors submit their abstracts electronically through Abstract Central, which can be accessed on the Respiratory Care website at http://rc.rcjournal.com/site/open_forum/2013.xhtml. This link also provides submission guidelines and other miscellaneous helpful information (see Figure 2).[11] Each abstract submission has a character limit of about 250–300 words. Abstract Central automatically tracks the number of words and characters the author enters online and provides feedback with a hard stop preventing submission of

Authors submit their abstracts electronically through Abstract Central.

Figure 2. Respiratory Care Open Forum 2013 Call for Abstracts



call for abstracts

Respiratory Care • Open Forum 2013

59th International Respiratory Convention & Exhibition • Anaheim, CA, USA

Important: Abstracts authored by industry representatives will NOT be accepted

The AARC and its science journal Respiratory Care invite you to become a part of the excitement at the AARC Congress 2013 in Anaheim, CA, by submitting a brief abstract on an area of cardiorespiratory care for the 2013 Open Forum.

The Open Forum is your opportunity to:

- Be published in Respiratory Care. All abstracts accepted for presentation will appear in the October 2013 issue.
- Gain national and international recognition for your work from leading respiratory therapists, physicians, and other health care professionals in attendance at the meeting.
- Receive constructive criticism on your abstract through feedback given by Congress attendees who view your presentation.
- Compete for Research Fellowships from the American Respiratory Care Foundation. All abstracts accepted for presentation will automatically be considered for these important awards.
- Help the AARC build a solid scientific basis for the profession of respiratory care. Every abstract that is presented adds another important piece of knowledge to our profession.

The deadline for submitting abstracts for AARC Congress 2013 is June 1, 2013.

Submit Your Abstracts Online!

Our online abstract submission process allows you to quickly and easily submit your abstract using the Internet. The process begins by going to www.rcjournal.com and clicking on the link to the Call for Abstracts. From there you may:

- Create a user name and password
- Enter your abstract, save it, and return to it later.
- Edit and update your abstract any time before the deadline (June 1, 2013) by returning to the site, logging in, and clicking on the "Review and Update My Submissions" button.

If you need technical assistance with the submission website, first try clicking on the Tech Support button in the top right corner. You can call 434-817-2040 ext. 406 to speak to ScholarOne technical support staff. Questions about the submission process and other Open Forum details may be directed to Sara Moore at **sara.moore@aarc.org**.

Abstracts that are submitted by the deadline will subjected to peer review. Incomplete abstracts will not be scored. Each abstract will be evaluated on scientific merit and originality. Email notification will be made *only* to the author listed as the contact author (make sure the contact information is up-to-date) by August 31, 2013.

Abstract Specifications

Open Forum abstracts may report:

- An original research study
- A case report or case series

Since the abstract is the only evidence by which the reviewers can decide whether the author should be invited to present a poster at the Open Forum, *all abstracts must provide all important data, findings, and conclusions.* Give specific information. Do not write general statements such as "Results will be presented" or "Significance will be discussed."

Essential Content Elements

Original study abstracts *must* include:

1. *Background:* must include a statement of a problem in our clinical knowledge, a research question, or hypothesis that addresses this problem, and a rationale supporting the hypothesis or question.
2. *Method:* description of research subjects studied, the research design and conduct in sufficient detail to permit judgment of validity. Must include a statement of the statistical tests used to analyze any data.
3. *Results:* statement of research findings with quantitative data and statistical analysis.
4. *Conclusions:* interpretation of the results.

Case reports *must* report a case that is uncommon or of exceptional educational value, and must include:

1. *Introduction:* relevant basic information important to understanding the case.
2. *Case Summary:* patient data and response, details of interventions.
3. *Discussion:* content should reflect results of literature review. The author(s) should have been actively involved in the case, and a case-managing physician must be a co-author or must approve the report.

Conflict of Interest

1. All industry relationships for the previous 2 years MUST be disclosed.
2. Abstracts will not be acceptable if ghost written.
3. Abstracts will not be considered if they come from industry.
4. If the study was conducted in the laboratory of industry, that must be disclosed.
5. Must follow the recommendations from JAMA 2005;294(1):110-111.

Abstract Submission Guidelines

1. Abstracts must be written and presented in English.
2. The abstract may have been presented previously at a local or regional — but not national or international — meeting, and should not have been published previously in a national journal.
3. Submission of an abstract constitutes the author's commitment to present the abstract as accepted.
4. Abstracts may have 1 clear, concise table *or* figure.
5. The first line of the abstract should be the title in all capital letters; the title should explain content and contain no abbreviations. Do not include authors within the title.
6. Follow the title with the names of all authors (including credential(s), institution(s), and location.
7. Standard abbreviations may be employed in the text of the abstract without explanation; new or infrequently used abbreviations should be spelled out on first use and followed by the abbreviation in parentheses.
8. Use generic names only for drugs; proprietary names may not be used.
9. All text must be submitted in the text box. Upload graphs and tables in the Upload Graphic step of the submission process.
10. When submitting your abstract, select all relevant presentation categories and ensure all contact information is correct.
11. You may be requested to combine mult
based on the stame study into a single abstr
12. Check the abstract for errors in spellir
facts, figures, and clarity of language
13. Total word count for the abstract may
2500 characters (around 325 words). Th
include the title or authors.
15. An abstract not prepared as requested
reviewed.
16. The mandatory submission deadline
2013. The contact author will be notified
or rejection *by e-mail only by August 31*

The AARC reserves the right to reject
failure to meet submission requiremen
merit, or due to special scheduling rec
AARC Congress 2013.

Abstract Publication Guidelines

All abstracts accepted for presentation
Open Forum will be published in the
Care. Rejected abstracts will not be p
Abstracts will be published exactly as

Abstract Presentation Guidelines

1. A substitute presenter will not be
prior authorization.
2. Abstracts will be presented in pos
3. Commercial logos are prohibited
the poster. All relations with industr
years must be disclosed.
4. Presenters will be assigned to an
scheduled at the Congress; Open Fo
according to general topic area.
5. Presenters are expected to arrive
presentation and with all necessary
6. Expenses associated with the pr
submission, and presentation of abs
responsibility of the author/present
associated with the meeting, includ
to, travel, housing accommodation
registration, are also the responsib
7. Changes to accepted abstracts
a case-by-case basis. All changes
the AARC in writing, including th
abstract title, authors, presenter, p
category, and presentation day an

About the Author
Teresa A. Volsko, MHHS, RRT, FAARC, is director of respiratory care and transport at Akron Children's Hospital in Akron, OH.

Acceptance letters provide additional information regarding the session date and time the poster will be presented.

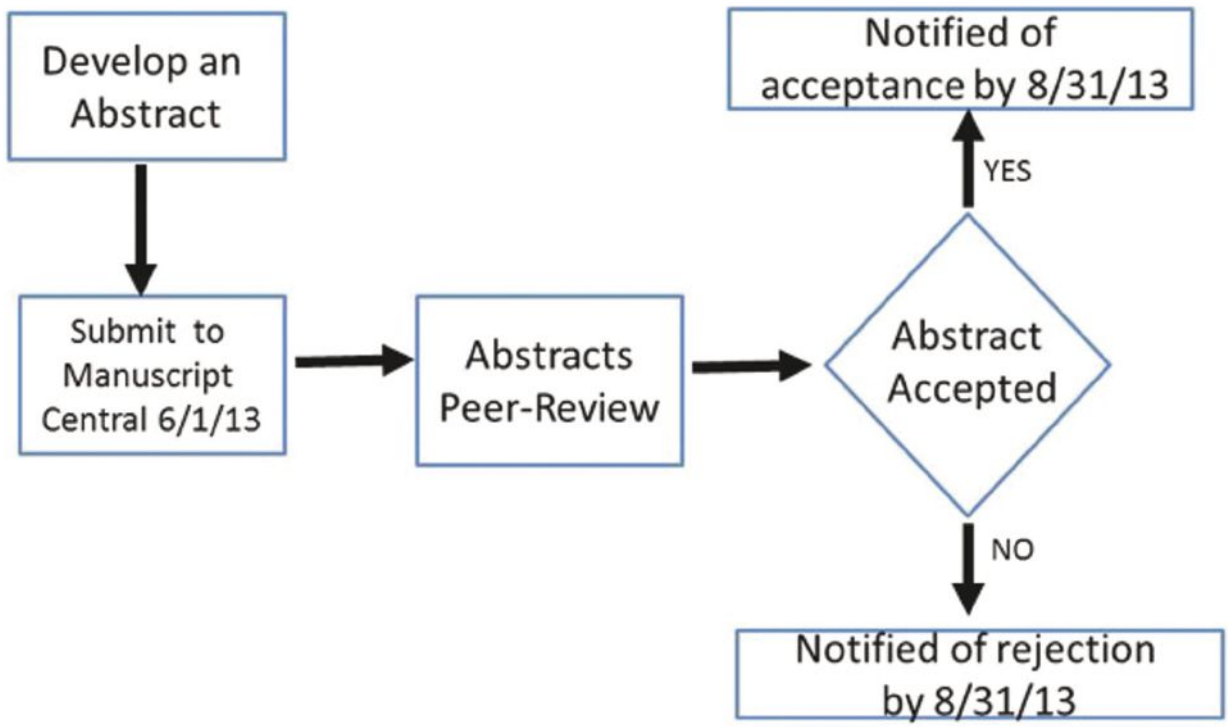
the work if the abstract is too lengthy. Through the electronic submission process, authors report co-authors and affiliations, acknowledge adherence with ethical research principles, disclose potential conflicts of interest, and divulge funding sources. Figure 3 shows the review process of an abstract submitted through Abstract Central.

The Respiratory Care website (www.rcjournal.com/abstracts) has past Open Forum abstracts from 1995–2012 available for your review, which makes it easy to visualize how to write yours.

After three experts review the abstract independently, then it is either rejected or accepted for presentation. The Journal emails authors of the decision and provides them with constructive feedback from the reviewers. Reviewer comments provide authors with suggestions to strengthen the presentation of their written work. Often authors are so vested in the work that it is difficult to see where clarification may be needed. Authors can use this feedback to help them create a more effective poster presentation and/or manuscript.

Acceptance letters provide additional information regarding the session date and time the poster will be presented. International authors are reminded in the acceptance letter to schedule an appointment with their embassy as soon as possible to secure the necessary visas for their visit to the United States.

Figure 3. The Review Process for Abstracts Submitted Through Abstract Central



Creating a poster for presentation

The poster is a more elaborate version of the abstract. It contains a more detailed description of all of the components of the abstract: the background, methods, results, and conclusions (see Figure 4). If the authors are creating a single sheet, the poster should be no more than six feet wide and four feet high. The top of the poster contains a header that lists the abstract title, authors, and affiliations. The text, which follows, typically begins with a reprint of the abstract that was accepted for presentation. The Introduction follows and in one to three paragraphs clearly defines the research topic. In this section, the study rationale, significance of the study, research questions, and/or hypotheses tested are described.

The Methods section details the procedures the researchers followed. This section of the poster includes enough detail for the attendees to judge the study validity and describes the subjects studied (subject selection, assignment or randomization process, blinding procedures), study protocol, outcomes measured, and analytical plan (statistical tests used and the significance level chosen for any statistical tests). Often figures are used to show the set-up for apparatuses used for the experiment or the process for enrolling subjects.

The Results section describes the outcome or the facts that were realized from conducting the experiment or study. Tables and figures are frequently used to present the data. This section does not contain any interpretation of the data. Rather, interpretation of the significance of the study, or the "take-home message," is described in the Conclusions section.

Presenting the poster at Open Forum

Each Open Forum symposium is approximately 90 minutes in length. The Open Forum is divided into a group poster viewing area in which the attendees and the session moderators can view and

The poster contains a more detailed description of all of the components of the abstract.

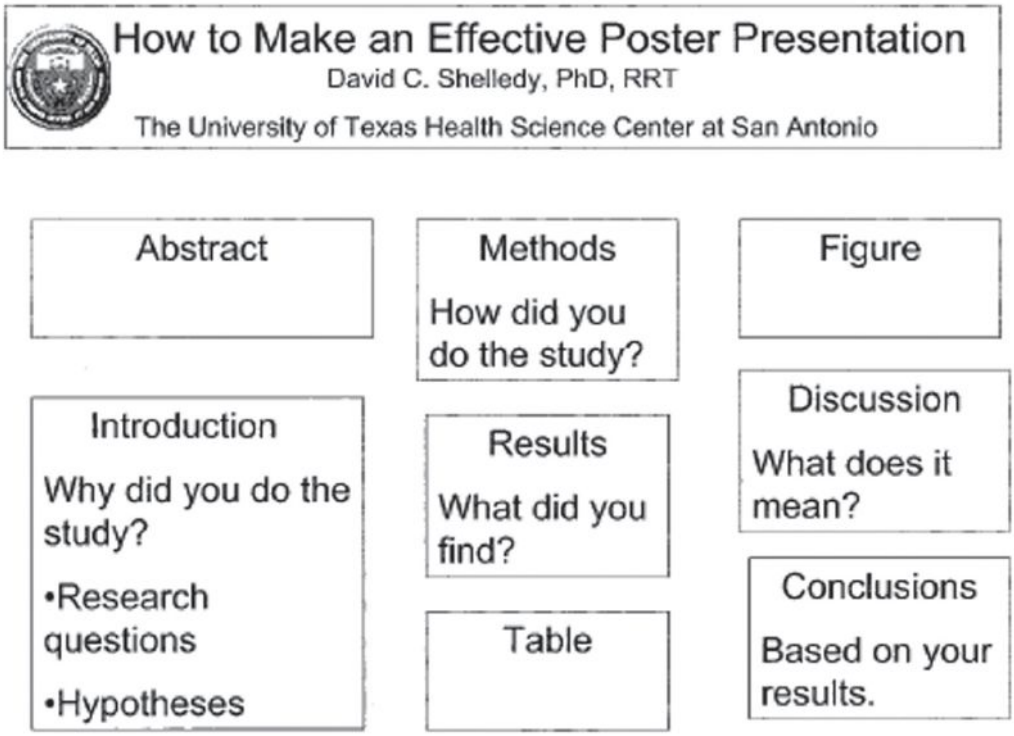


Figure 4. The general layout of a poster presentation.

SOURCE: Shelledy DC. How to make an effective poster. Respir Care 2004; 49(10):1213–1216.

discuss the research presented on the poster with the authors (see Figure 5). The moderators will then call to order the podium presentation portion of the Open Forum. Attendees are asked to be seated while each presenter is called individually to the podium to briefly describe the motivation for the study, the shortcomings or limitations, importance of the results, and the next steps for the research.

The presenters must summarize and present their take-home message in three minutes or less. For many, this portion of the session may be anxiety producing; however, with planning and practice, a successful presentation can be delivered.[12] The moderators keep this portion of the session flowing by soliciting comments and discussion from attendees and often providing insightful comments.

Valuable opportunity for presenters and attendees alike

In this venue, AARC Congress attendees interact with the investigators and discuss the findings of new and cutting-edge research that may impact our profession and shape future practice of respiratory care. The AARC Open Forum provides this unique opportunity to seasoned and novice researchers alike. Each year nearly one-fourth of the abstracts accepted for presentation are from first-time presenters. The AARC provides resources at the Congress to assist first-time presenters or those with a future interest in participating at a research forum. The AARC hosts "Presenting an Open Forum" on the first day of the Congress. This interactive session introduces the neophyte research presenter to the customs, roles, and experience of presenting

Figure 5. Authors Interacting with Attendees and Session Moderators During Poster Viewing

at an Open Forum session. Videos are used to illustrate the Open Forum experience from a novice's eyes and include short vignettes of researchers setting-up the poster, interacting with the moderators, presenting at the podium, and participating in moderated audience discussions. Perhaps the most rewarding aspect of the Open Forum is to see first-time presenters return to future congresses to present additional work and/or take those next steps in the process and submit a manuscript to Respiratory Care journal for peer review. ■

EDITOR'S NOTE

This article summarizes a lecture presented by Teresa A. Volsko at AARC Congress 2012.

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Suggested Reading

The October 2004 issue of Respiratory Care (http://rc.rcjournal.com/content/49/10.toc) was dedicated to respiratory care research and has several excellent articles on presenting at the Open Forum.

Volunteer members of the AARC and the Colorado Society conduct a DRIVE4COPD screening event with a Pepsi bottling plant in Denver, CO.

DRIVE4COPD
A CAMPAIGN OF THE COPD FOUNDATION

Adopt-a-Company Is BACK!

AARC launches revitalized campaign this month

by Jason Moury, BS, RRT

Our successful DRIVE4COPD initiative to screen people for COPD in the workplace is gearing back up, with the goal of making every AARC member a "driver" in the battle to ensure more people are diagnosed in the earliest and most treatable stages of the disease.

The national DRIVE4COPD campaign was launched in February of 2010 with the ambitious goal of screening 1 million people for the condition over one year's time using a simple, five-question risk screener developed and validated by experts in our profession. People with scores of five or more were advised to see their physicians for further diagnostic testing.

In order to showcase the campaign in the media, campaign organizers partnered with celebrity spokespeople such as Danica Patrick, Patty Loveless, Bruce Jenner, Michael Strahan, and Jim Belushi, each of whom had a personal connection with COPD and was willing to share their own

Workplace the right place

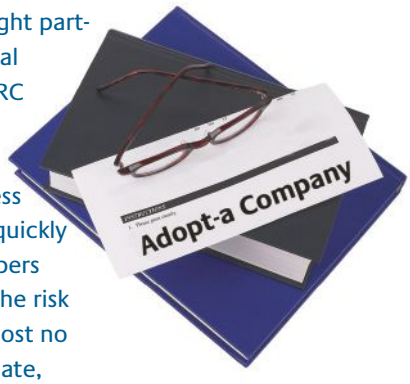
Passing that major milestone was a huge accomplishment. But this campaign was just getting started. With 12 million of the estimated 24 million Americans suffering from COPD still undiagnosed, campaign partners knew much more work remained to be done; and each organization began making plans to take its screening efforts to the next level.

The AARC decided to tap what it believes to be the single largest demographic when it comes to people with undiagnosed COPD: working Americans in their 40s, 50s, and 60s. Mostly in the early stages of the disease, these folks live active lives that generally don't leave much room for attending health fairs or, in some cases, even making annual visits to their physicians. But they do get up and go to work every day, so the AARC decided the workplace was the right place to connect with them and deliver the COPD message.

story and emphasize how important it is to be screened for the condition.

The campaign also sought partnerships with other medical organizations, and the AARC played a significant role. Always a strong supporter of efforts to raise awareness of COPD, the Association quickly began educating its members about the campaign and the risk screener. AARC members lost no time stepping up to the plate, hosting DRIVE4COPD events in communities all over the United States. It was with the support of the AARC Board of Directors and House of Delegates that we were able to make the campaign successful.

By February of 2011, the campaign had met its goal of screening 1 million people, and much of that success was attributed to you — AARC members — who contributed more screens to the 1 million total than any other partnering organization.



Adopt-a-Company was born in the spring of 2011, and AARC members were once again enlisted to serve as foot soldiers in the mission to raise awareness of COPD and screen those at risk for the condition. The premise was simple: contact a local company and offer to provide COPD risk screeners and information about COPD for its employees.

As they did in the initial campaign, AARC members rose to the occasion, partnering with local businesses and, in many cases, their own hospitals to get the word out about COPD and the need for early detection and treatment. Last year, almost 200 companies were adopted by AARC members who sent information to, and in some cases held screenings for, their companies.

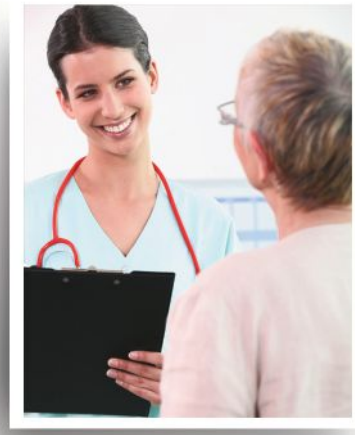
Adopt-a-Company II

That was then, as they say. This is now. And despite the fact that we've made a lot of progress, the war against undiagnosed COPD rages on. Indeed, when the national DRIVE campaign first launched back in 2010, COPD was the nation's fourth leading killer. Today it is No. 3, behind only heart disease and cancer. Clearly, the need to raise awareness of COPD and ensure more people are diagnosed early in the disease process when treatments and lifestyle changes can have the most impact is more important now than ever before.

Luckily, DRIVE4COPD is still on the case; and with an enhanced partnership between the AARC and the COPD Foundation, the AARC is as involved as it ever was. The AARC is getting back in the saddle this month with an updated Adopt-a-Company campaign that will once again recruit AARC members who are willing to reach out to local companies and offer COPD education and screening.

Here's what you need to know:

1



The task: We are asking all AARC members to become "drivers" of the campaign by adopting at least one business in their own communities. This business doesn't have to be a large Fortune 500 company; you can target anything from the local manufacturing plant, to the "mom and pop" hardware store down the street, to your favorite restaurant. No one knows your community better than you do, and that makes you the best person to make the initial call and get the dialogue started.

2

The time commitment: We know how busy you are with your own jobs and families. But if you would screen a small business with 15 employees or less, it should take no more than one to two hours. In some cases, you may be able to get the bulk of the job done through email or other electronic communications. If your hospital supports outreach activities, you may also be able to do some of the work on hospital time, so be sure to check with your supervisor to see if the opportunity exists. Preparing for the event will be easy too, because we are providing all of the materials you will need to contact the business, raise awareness of the condition, and screen employees in our Adopt-a-Company Toolkit on the AARC website *(see the toolkit sidebar on page 42).*

3

The payoff: There is something to be said for taking pride in your community and sharing your respiratory expertise, but everyone who gets involved in Adopt-a-Company is eligible to win some great prizes too, ranging from free AARC online classes to the grand prize of two VIP tickets to the Daytona International Speedway's DRIVE4COPD 300 race in February 2014.

What goes around, comes around

There's also one more big payoff for all of us — as we raise awareness of COPD and the need for early detection and treatment, we just naturally raise awareness of respiratory therapists and our respiratory care profession. Everyone from the business owners we talk with to set up the COPD screening, to the employees we screen, to the media who may cover our event will come away from the experience with a newfound knowledge of what RTs do and why we do it. The impact on your own community will be immediate. The impact on our overall public image will depend on how many of us get involved.

So I urge all of you to take a few moments to check out the DRIVE4COPD page (www.aarc.org/drive4copd/) and consider how *you* can do your part to make sure potential patients get the medical screening they need before their COPD becomes hard to manage. Do it for your patients. Do it for your profession. And do it for yourself, because there is no better feeling than letting the world know that "respiratory care cares." ■

Jason Moury, BS, RRT, is combining his respiratory care background with his public health degree to help AARC members raise awareness about COPD.

About the Author

Jason Moury, BS, RRT, came on board as AARC COPD coordinator last November and believes the national DRIVE4COPD campaign is a prime example of how health professional organizations like the AARC can reach out to the public.

The Association's latest DRIVE4COPD initiative, the Adopt-a-Company campaign, is expected to greatly increase the number of working Americans who are diagnosed with COPD in its earliest and most treatable stages. But Moury's plans to improve COPD care reach much further. COPD is the third leading cause of death in the United States; and across the country it is treated a little differently, he explains. "We want to get all of the members of the AARC on the same page when it comes to treating and diagnosing the disease." ■

Everyone who gets involved in Adopt-a-Company is eligible to win some great prizes, ranging from free AARC online classes to the grand prize of two VIP tickets to the Daytona International Speedway's **DRIVE4COPD 300 race.**

What's in the Adopt-a-Company Toolkit

Cold calling a local business and asking if they'd like their employees to be screened for the nation's third largest killer may seem like a daunting task, but with all of the materials available in our Adopt-a-Company Toolkit, nothing could be further from the truth. Here's what you'll find in it.

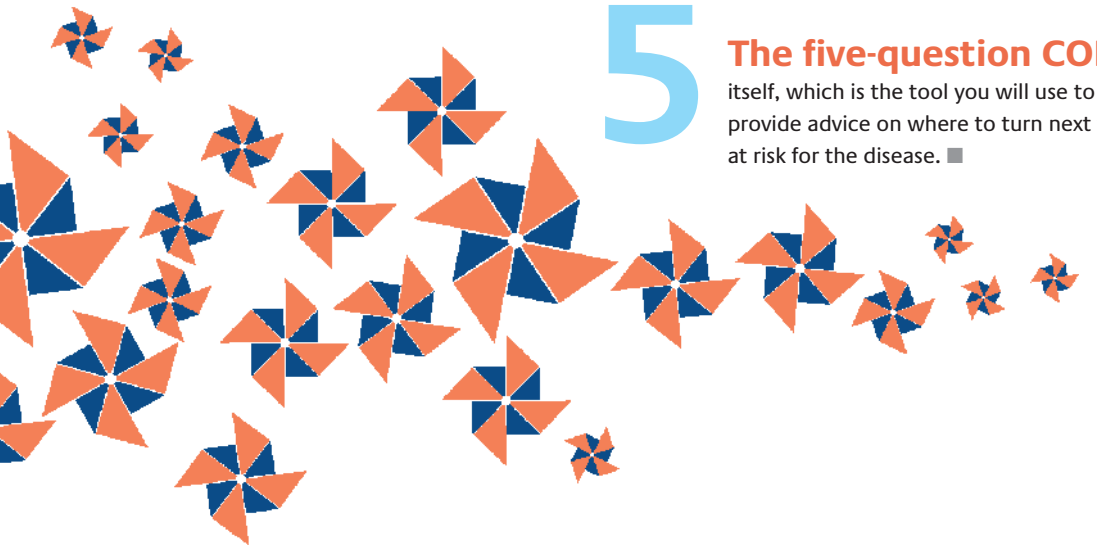
1. **Template letters** you can use to make initial and follow-up contact with your business.

2. **Template emails** that will serve the same purpose for businesses that are comfortable with electronic communications.

3. **Media releases** you can customize to let your local TV stations, radio stations, and other news outlets know that you are reaching out to help raise awareness of chronic obstructive pulmonary disease and screen people at risk.

4. **Newsletters** and other materials about COPD and lung health you can send out to the employees at the companies you adopt to help ensure lung health remains on their radar screens.

5. **The five-question COPD risk screener** itself, which is the tool you will use to actually screen people and provide advice on where to turn next for those who are found to be at risk for the disease. ■



A Salute to our 2013 Corporate Partners

AMERICAN ASSOCIATION FOR RESPIRATORY CARE
AARC
CORPORATE PARTNER

CareFusion

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COVIDIEN

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PHILIPS RESPIRONICS

Dräger

imagination at work

MAQUET GETINGE GROUP

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Boehringer Ingelheim

Forest Laboratories, Inc.

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

The combined efforts between the respiratory care profession and manufacturers in seeking ways to improve the quality and outcomes of our patients make us natural partners in today's healthcare continuum.

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.

Industry Watch

FDA approves new flu vaccine

The FDA has approved the first trivalent influenza vaccine called Flublok, which uses an insect virus expression system and recombinant DNA technology. Flublok's novel manufacturing technology allows for production of large quantities of the influenza virus protein, hemagglutinin, the active ingredient in all inactivated influenza vaccines. "The new technology offers the potential for faster start-up of the vaccine manufacturing process in the event of a pandemic because it is not dependent on an egg supply or on availability of the influenza virus," says Karen Midthun, MD, director of the FDA's Center for Biologics Evaluation and Research. It is approved for the prevention of seasonal influenza in people age 18–49.

New COPD drug now in pharmacies

Forest Laboratories Inc.'s Tudorza™ Pressair™ (aclidinium bromide inhalation powder) 400 mcg is now available in pharmacies throughout the United States. The FDA recently approved the long-acting anticholinergic for long-term maintenance treatment of bronchospasm associated with COPD, including chronic bronchitis and emphysema. The company says Tudorza is the first long-acting inhaled anticholinergic approved for COPD by the FDA in more than eight years. It is administered twice daily through the preloaded multidose Pressair inhaler.

Teleflex expands Hudson RCI portfolio

Teleflex Incorporated reports it has expanded its portfolio of Hudson RCI respiratory solutions for the critical care infant. The addition of the Babi.Plus® Bubble PAP Valve for nasal CPAP is now in the company's respiratory product portfolio, which already includes the Hudson RCI Infant Nasal CPAP Cannula System and the ConchaTherm® Neptune® Heated Humidifier. "We are excited about the addition of the Babi.Plus Bubble PAP Valve to our comprehensive portfolio of respiratory solutions for the critical care infant," said Cary Vance, president of the anesthesia and respiratory division.

Aptalis Pharma releases Phase 3 results

Aptalis Pharma Inc. has announced the results of two global Phase 3 studies of Aeroquin™ (levofloxacin inhalation solution) for the treatment of cystic fibrosis. In the first study, the differences between the Aeroquin and placebo groups in the predefined primary endpoint of time to first pulmonary exacerbation were not statistically significant, according to the company. However, efficacy among certain secondary endpoints, such as lung function and reduction in *Pseudomonas aeruginosa* from sputum, was demonstrated in Aeroquin-treated patients. In the second study, the primary endpoint — non-inferiority of relative change from baseline in percent predicted FEV_1 after the first treatment cycle of 28 days — was met, says a company spokesman.

Boehringer Ingelheim gets FDA priority review

Boehringer Ingelheim Pharmaceuticals Inc.'s New Drug Application for its investigational oncology compound afatinib has been accepted for filing and granted "priority review" by the FDA. The application is currently under review for the treatment of patients with locally advanced or metastatic non-small cell lung cancer with an epidermal growth factor receptor mutation as detected by an FDA-approved test. The FDA target action date for afatinib will be in the third quarter of 2013.

KaloBios Pharmaceuticals begins dosing phase

According to KaloBios Pharmaceuticals Inc., dosing has begun in a randomized, double-blind, placebo-controlled Phase 2 clinical trial of KB001-A, the company's anti-PcrV Humaneered®, PEGylated monoclonal antibody fragment. The study will investigate the safety and efficacy of intravenously administered KB001-A as a treatment for chronic *Pseudomonas aeruginosa* infection in cystic fibrosis patients. They are looking into the amount of time needed for antibiotics to treat the worsening of respiratory tract signs and symptoms. Also under review are inflammatory markers, respiratory symptoms, subject-reported outcomes, measurements of lung function, pharmacokinetics, safety, and tolerability.

PARI Respiratory launches new website

PARI Respiratory Equipment has launched a new customer ordering

RESPIRATORY CARE gets Wired in 2013

Set up alerts for new issues, keywords, or your favorite authors

Robust search engine

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Navigation panel quickly jumps from section to section without scrolling

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website, PARIOrder.com, designed to serve home health care companies, medical supply distributors, pharmacies, hospitals, and physicians. "Until now, we had not found a technology that could seamlessly connect our user-friendly and image-based catalog with our advanced enterprise resource planning system," Director of Marketing Ashley Weigand says. "PARI Order is able to do that, while providing an easier, faster way for our customers to create, track, and view orders online."

Nonin announces 2net Platform compatibility for pulse oximeter

According to Nonin Medical Inc., the company's Onyx® II Model 9560 Fingertip Pulse Oximeter is now compatible with the 2net™ Platform for wireless health solutions. Developed by Qualcomm Life Inc., a subsidiary of Qualcomm Incorporated, the 2net Platform is a cloud-based system designed to be universally interoperable with different medical devices and applications. According to Nonin, the platform enables end-to-end wireless connectivity while allowing medical device users and their physicians or caregivers the ability to access biometric data easily. The connection between the 2net Hub and Nonin is made using a Continua™-compliant Bluetooth® wireless technology protocol.

New pertussis treatment in development

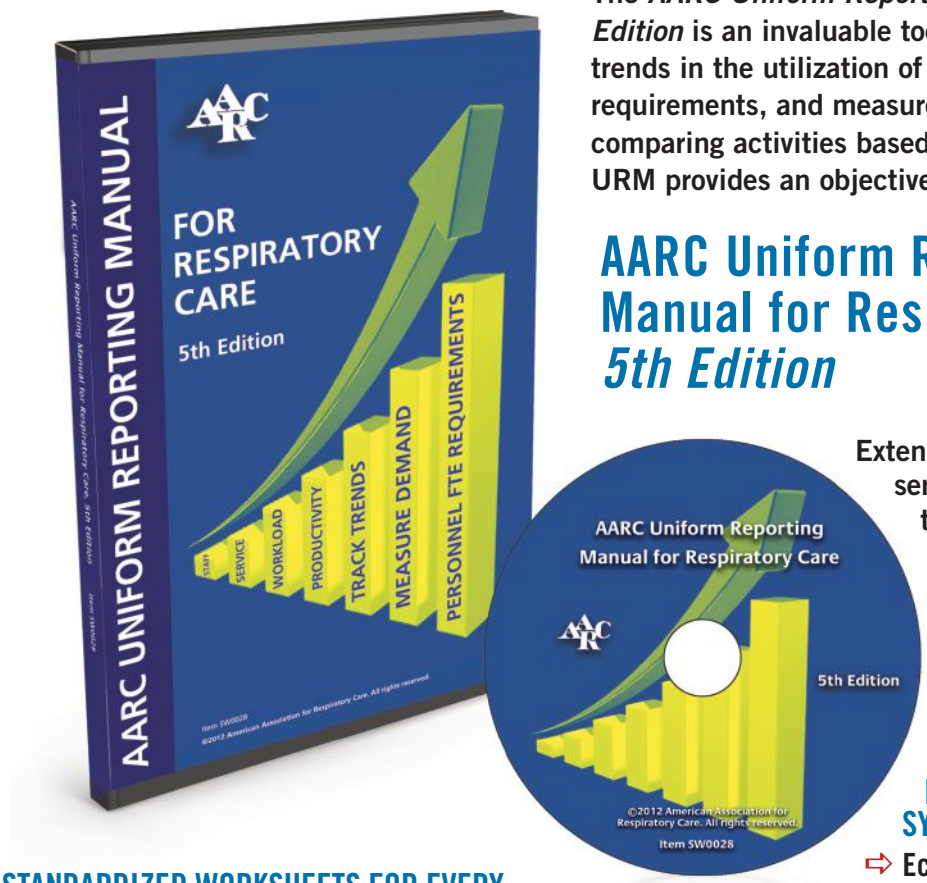
Synthetic Biologics Inc. is working with Intrexon Corporation to initiate development of a monoclonal antibody (mAb) therapy for the treatment of pertussis. The therapy, SYN-005, is designed to neutralize the pertussis toxin, thereby reducing the mortality rate in infants and potentially shortening the chronic cough in adults. Under this collaboration, Synthetic Biologics intends to utilize Intrexon's comprehensive suite of proprietary technologies, including the mAbLogix™ and LEAP™ platforms, to develop mAbs to specifically and rapidly neutralize/clear pathogens that cause infectious diseases. Synthetic Biologics has also entered into an agreement with The University of Texas at Austin to license the rights to certain research and pending patents related to pertussis antibodies.

FDA approves aerosol drug to treat mental disorders

The FDA has approved Alexza Pharmaceuticals Inc.'s ADASUVE® (loxapine) Inhalation Powder 10 mg for the acute treatment of agitation associated with schizophrenia or bipolar I disorder in adults. ADASUVE combines Alexza's proprietary Staccato® delivery system with the antipsychotic drug loxapine. As part of the drug development process, the company identified a risk of bronchospasm in certain asthma and COPD patients following dosing with ADASUVE. It will be available only through a restricted program under a Risk Evaluation and Mitigation Strategy. "ADASUVE is the first approved non-injectable therapy for the acute treatment of agitation in adults with schizophrenia and bipolar I disorder," says Alexza President and CEO Thomas B. King.

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

Your Best Tool for Evaluating Staff Productivity and Making Budget Decisions



The *AARC Uniform Reporting Manual for Respiratory Care, 5th Edition* is an invaluable tool to determine productivity, track trends in the utilization of services, establish personnel FTE requirements, and measure demand and intensity of service. By comparing activities based on relative workload intensity, the URM provides an objective means of assessing staffing adequacy.

AARC Uniform Reporting Manual for Respiratory Care, *5th Edition*

NEW!

Extending well beyond the scope of inpatient services provided in acute care hospitals, the new URM includes current data to address clinical activities for a variety of services that are frequently directed by respiratory therapists.

UPDATED PRODUCTIVITY SYSTEMS FOR:

- Hospital Inpatient Procedures

PLUS NEW PRODUCTIVITY SYSTEMS FOR:

- Echo/Non-invasive Cardiology Labs
- Blood Gas Labs
- Pulmonary Diagnostic Labs
- Sleep Disorders Labs
- Hyperbaric Medicine Labs
- Pulmonary Rehabilitation Services

STANDARDIZED WORKSHEETS FOR EVERY PRODUCTIVITY SYSTEM

Detailed Microsoft® Excel® worksheets are provided on the CD as basic templates for collecting your own activity data and validating time standards from that data. These worksheets can be copied and customized to meet your specific needs.

ALSO INCLUDED IN THE MANUAL ARE:

- Suggested time standards for clinical activities performed on adult, pediatric and neonatal patients
- Educational resources to help you understand, explain, measure and report productivity
- A step-by step approach to gathering, analyzing and reporting productivity data

Uniform Reporting Manual for Respiratory Care, *5th Edition*

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AARC MEMBER PRICE $175.00

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RC Currents

IN THE NEWS

Protocol Helps RTs Begin Research Projects

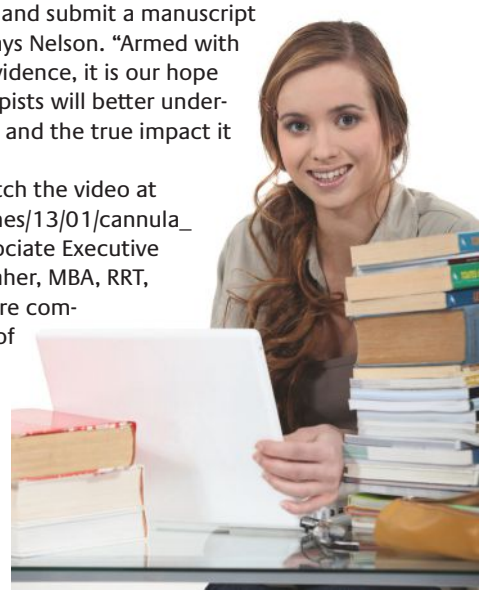
While heated high-flow nasal cannulas have grown in popularity for patients in all care settings, robust evidence is lacking in documenting its effectiveness, safety, and clinical outcomes. As a result, the AARC is encouraging RTs to engage in clinical research with this technology.

Funded in part through an unrestricted grant from Trianim (an AARC Corporate Partner), the AARC has created an institutional review board (IRB) research protocol with the hope that clinicians using this technology will take the next step of engaging in research. "We understand that not all clinicians are experienced researchers," says Steven B. Nelson, MS, RRT, FAARC, associate executive director of the AARC. "Our hope is that through the creation of this protocol, novice researchers will be more apt to take the next step to initiate research in their institution."

Vetted by a third-party IRB, this protocol can be customized to any institution and can be easily manipulated to change study objectives, design, hypothesis, etc. Institutions also can use the protocol in its entirety if they feel it appropriate. Words written in red are areas where you may want to customize it for your institution.

"At the end of the day, we hope therapists will engage in research, present their findings at an AARC Congress Open Forum, and submit a manuscript to Respiratory Care," says Nelson. "Armed with improved scientific evidence, it is our hope that respiratory therapists will better understand this technology and the true impact it has on patients."

To learn more, watch the video at www.aarc.org/headlines/13/01/cannula_research as AARC Associate Executive Director Douglas S. Laher, MBA, RRT, FAARC, provides a more comprehensive overview of the IRB template and how you can use it in your institution. On that same site AARC members can sign in to receive a copy of the IRB template by email. ■



New AARC White Paper: "Best Practices in Respiratory Care Productivity and Staffing"

The AARC's latest White Paper, "Best Practices in Respiratory Care Productivity and Staffing," was approved and published to address growing concerns that inappropriate measures were being applied to determine the number of respiratory therapy staff members needed at a given institution. It provides guidance to ensure that respiratory care productivity and staffing levels are provided within acceptable standards of practice recognized by the profession and that patient safety is protected.

Included in the White Paper are considerations for rendering respiratory care, problems with either overestimating or underestimating staff-level needs, clinical procedures not covered by CPT codes for RTs, and consideration of required support activities. Recommendations are also provided for using metrics to determine staffing levels and for benchmarking.

The White Paper is available online at www.AARC.org/resources/productivity_and_staffing/. ■

Educators: Help Recognize Outstanding Students

The American Respiratory Care Foundation (ARCF) is accepting applications for its undergraduate and postgraduate Education Recognition Awards now through June 15 and is asking RC educators to help get the word out to their students. So check out the list of available awards and then encourage your best and brightest students to apply.

The ARCF offers awards to students who are currently enrolled in accredited respiratory care educational programs and to respiratory therapists who are pursuing an advanced degree. Awards include registration and airfare to attend AARC Congress 2013, to be held Nov. 16–19 in Anaheim, CA.

To see all of the awards bestowed by the ARCF every year, go to the Foundation's Grants, Awards and Fellowships page at www.arcfoundation.org/awards/. For more information, contact April Lynch at lynch@aarc.org. ■

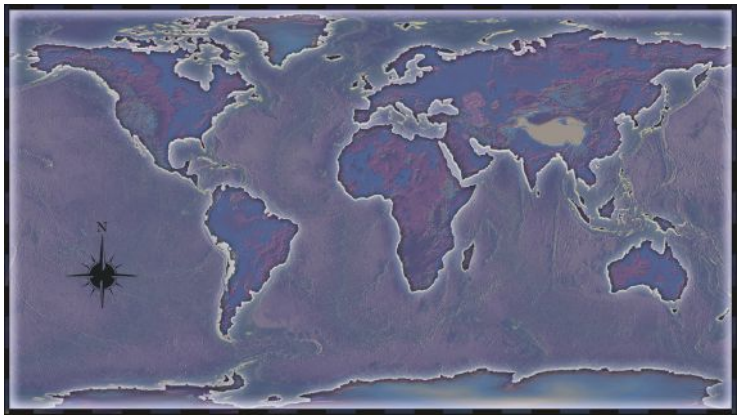
AARC Now Accepting Applications for the 2013 International Fellowship Program

If you provide respiratory care outside of the United States and would like to share and expand your knowledge, please consider applying for our International Fellowship Program.

The International Fellowship Program is a sponsored activity of the AARC. Since 1990, health professionals from more than 50 countries have shared experiences, knowledge, and lasting friendships through this exceptional program.

The three-week program takes each participant to two host cities in the United States and concludes with attendance and acknowledgement at AARC Congress 2013 to be held Nov. 16–19 in Anaheim, CA.

Learn more and apply at www.aarc.org/resources/international_fellows/. For more information, contact April Lynch at lynch@aarc.org. ■



AARC's "New Members" Column Now Online

The "New Members" column can now be accessed online at www.AARC.org/new_members. Current AARC members are encouraged to check this site on the first of each month to view the names of individuals who have been approved as "Active Members" in the Association. Any current member may object to a new membership by filing a written objection with the Executive Office at info@aarc.org within 30 days. ■

Respiratory Care in the "Sweet Land of Liberty"

by Michael Davis, BS, RRT

An adult patient at ELWA hospital receives oxygen for pulmonary edema from congestive heart failure. This concentrator was the only oxygen source at the facility.

Located on the West African coastline, Liberia boasts a distinct culture, abundant natural resources, and many wonderful people. In the 1970s, Liberia was one of the most developed countries in West Africa, and the nation's beautiful beaches and tropical climate attracted tourists from Europe to the Middle East. During that time, the national hospital of Liberia, John F. Kennedy Hospital (JFK), even served as a referral hospital for neighboring countries.

Sadly, a 20-year history of civil war and political unrest has devastated Liberia and left it one of the most impoverished nations in the world. After two military coups in the 1980s, nearly a decade of civil war ensued, claiming more than 200,000 lives and destroying most of Liberia's infrastructure. The vast majority of the country — still called the "sweet land of liberty" by its citizens — now lacks electricity and running water.

Relative stability returned to Liberia in 2007, and since then the medical framework has gradually been improving. In January 2011, I was fortunate enough to visit Liberia for the first time on a medical relief trip sponsored by the Trusted Angels Foundation. Shortly after my arrival, I met the only respiratory therapist in Liberia, Joseph Moore, RRT. Through joint efforts, we facilitated the opening of the Liberian Respiratory Healthcare Institute (LRHI) less than one year later.

Michael Davis teaches about blood gases to the RT students.

Moore's road to respiratory therapy began in the 1980s as violence erupted in Liberia and he fled to America, where he attended and graduated from a respiratory therapy school in California. He worked as an RT in the United States for almost 20 years; then as Liberia became more stabilized in 2007, he returned home. He began working clinically at JFK, where he immediately recognized the need for improvements in respiratory care within his country. However, while he was able to train medical and nursing students in the fundamentals of respiratory care, the lack of resources in the Liberian health care environment limited his options for furthering our profession in his country.

That was disconcerting, because respiratory distress and subsequent failure are currently among the top causes of hospitalization and death in Liberia. This is largely due to a lack of respiratory care supplies. Oxygen therapy is widely unavailable in most inpatient areas and is a rarity in outpatient clinics. In the few facilities that can provide oxygen therapy, oxygen is reserved for the sickest patients. Most oxygen is provided by low-flow concentrators; oxygen tanks are of limited supply and are rarely able to be refilled. The notion

This 28-week gestation infant was resuscitated at Redemption Hospital using a pediatric self-inflating bag and then sustained on a pediatric nasal cannula fed by an oxygen concentrator, illustrating many of the equipment issues facing medical professionals in Liberia.

of critical care is relatively foreign in Liberia as well. Patients who are unable to breathe adequately on their own will not survive.

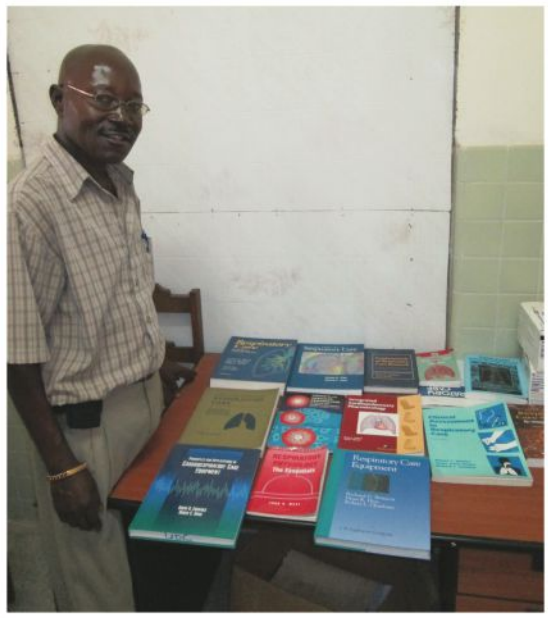
It is not only patients and health care providers who realize Liberia's need for higher quality respiratory care. When I tell people I am a respiratory therapist, I repeatedly hear, "We need respiratory!" This plea for respiratory care comes from everyone — medical professionals, politicians, pastors, businessmen, and merchants. Liberians do not necessarily know what my title means or understand what I do, but they all know someone who has died from respiratory failure.

When Moore and I met in 2011, we immediately began working together to create a respiratory care educational program to help meet the overwhelming need for respiratory therapists in Liberia. He requested support from JFK hospital to open an RC school while I worked with the Trusted Angels Foundation to procure RC equipment and educational materials. Within six months of the start of our venture, I had received enough donations to send a full shipping container to Liberia, and he had acquired a classroom for the school and recruited eight students. The LRHI opened in January 2012.

Since the opening of the school, the Liberian Board of Medicine and Dentistry has created a licensure process for respiratory care practitioners. Moore and a couple of his on-the-job trainees are currently the only licensed practitioners in Liberia, but the students now have a more defined goal for which to aim. Members of the Liberian Board of Medicine and Dentistry hope that their acknowledgement of respiratory therapy as a profession will foster the growth of respiratory care in their country and encourage support from respiratory care professionals in more developed nations.

For my part, witnessing the rapid growth, acceptance, and improvement of respiratory care in this struggling nation has been incredibly refreshing. ■

Michael Davis, BS, RRT, is project director of exhaled breath research at Virginia Commonwealth University in Richmond, VA.



Joseph Moore shows off some of the textbooks donated for use in the new school.

AARC Members Honor WWII Veterans

For the vast majority of Americans living today, World War II is something they've only read about in history books. Indeed, even the rapidly aging baby boom generation remembers the war as an event that happened before they were even born.

But despite the fact that Pearl Harbor took place more than 70 years ago now, there are still World War II vets among us; and a national program called Honor Flights is working to make sure as many of them as possible get the chance to see the National World War II Memorial in Washington, DC, before they die. As we've reported in previous articles in this magazine, respiratory therapists continue to play a major role on the medical teams recruited to accompany the veterans on their all-expense-paid trips to the nation's capital.

AARC member John Hiser, MEd, RRT, FAARC, has been on six Honor Flights so far and now sits on the board of directors for Honor Flight DFW out of the Dallas-Fort Worth area along with fellow member Melaine Giordano, MSc, RN, CPFT, who is currently president of the board. Their latest Honor Flight took place last fall.

Pat Munzer (left), John Hiser, and Karen Schell join WWII veteran Al Lawrence for a photo.

"We always have vets with COPD and other breathing problems such as sleep apnea," says Hiser. "Two vets were on oxygen on this trip and one was on standby, so we traveled with four oxygen concentrators, one for each vet and one on standby."

Hiser's presence on the medical team proved to be especially valuable on this trip when a problem arose with one of the portable oxygen concentrators (POCs) used by one of the veterans on the return flight. "Shortly after we leveled off after takeoff, he began to desaturate and at one point got as low as 72%," he recalls. "I increased his flow to 6 L/min, with minimal improvement." Along with his fellow medical team members, including an anesthesiologist, pulmonologist, general practitioner, and three nurses, Hiser quickly worked out a solution whereby he was able to run a cannula from one POC to the

AARC members (from left), Melaine Giordano, Linda Smith, Pat Munzer, Karen Schell, and John Hiser enjoyed the chance to care for these vets during the trip.

man's nose and another from one of the other POCs on board to his mouth. "He tended to be a mouth breather when short of breath, and I suspected that the mouth breathing may have decreased the activation of flow of the pulse dose through his nose," he explained. Hiser's solution resulted in saturations of 98-100%; and once back on the ground, the man returned to normal saturations, was able to enjoy the welcome home celebration, and was returned safe and sound to his family.

For the most part, however, the trip went smoothly from a medical point of view; and Hiser and Giordano spent most of their time enjoying the chance it gave them to visit with the veterans. So did three other AARC members who met up with the group in Washington, DC, to assist the veterans as they made their way around the city.

For Linda Smith, BS, RRT, FAARC, who works for a home care company in nearby Maryland that provides wheelchairs and other supplies for the veterans once they reach DC, this was her sixth time to help out with an Honor Flight. The experience once again left her with memories to cherish. "It always amazes me how these senior men still have their sense of humor," she says.

> "This was the most rewarding volunteering that I have ever done. Even now when I talk with people regarding this trip, I get very emotional."
>
> — Pat Munzer, DHSc, RRT, FAARC

One gentleman on this latest trip, for example, had her laughing out loud. "The first day was especially hot. After placing a wreath at the Tomb of the Unknowns, we were sitting under some trees," she explains. "One of the vets looked especially warm and I went over to ask him if he was hot. His reply was, 'yes, and I'm single too.'"

Karen Schell, RRT-NPS, RPFT, RPSGT, and Pat Munzer, DHSc, RRT, FAARC, who are both from Kansas, heard about the Honor Flight program when Hiser mentioned it during a presentation at the AARC House of Delegates meeting last July and thought it would be a great way to honor the nation's oldest veterans of service. When they found that the Kansas arm of the organization was full up on volunteers, they networked with Hiser and Giordano, who said they would be more than welcome to join their next group in Washington. "This was the most rewarding volunteering that I have ever done," says Munzer. "Even now when I talk with people regarding this trip, I get very emotional."

Schell says she loved having the chance to escort the veterans around to the various monuments and memorials and is ready to do it again. Like Smith, she was also impressed by the way these gentlemen handled the limitations presented by their age and medical conditions with such aplomb.

That was particularly true for one veteran who seemed to pride himself on being able to walk to all of the monuments. "Every time he saw me with a wheelchair and I offered him a ride, he would laugh and say 'next year,'" she recalls. Near the end of the trip she passed by and saw that he had finally given in and was letting someone push him in a chair. When he saw Schell he just smiled and said, "Next year, already."

"We both laughed!" she says. ■

The veterans gather at the Iwo Jima Memorial.

Enter the 2013 AARC Photo Contest

AARC Times is looking for creative members to enter our AARC Photo Contest. Finalists will receive a free one-year membership renewal and have their photo entered into our Photo-of-the-Year Contest with the chance of it being chosen to appear on the March 2014 cover. For instructions and guidelines, select the *AARC Times* icon on www.AARC.org and click on the "Photo-of-the-Year Contest" link. Deadline to submit photos is Oct. 15, 2013. ■

Request for Open Forum Abstracts for AARC Congress 2013

The AARC invites you to submit abstracts for the Open Forum at AARC Congress 2013. Considered by many to be the premier event at the AARC Congress, the Open Forum is your opportunity to gain national and international recognition for your research in cardiorespiratory care by submitting an original abstract for presentation at the Congress and having it published in Respiratory Care. The deadline to submit abstracts for the Open Forum is June 1 at http://aarc2013.abstractcentral.com/. ■

Writer's Corner "You Have a Very Important Job, You Know"

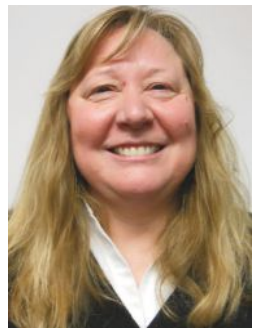
by Tamara McCabe Halvorson, BA, RRT

Sometimes your validation as a respiratory therapist does not come from where you are employed. It comes from other places. In this case, it came from a kindly WWII veteran.

I had run across the street to a local gas station to get a hamburger for lunch. As I was paying for my burger, an elderly gentleman asked where I worked. I told him I was a respiratory therapist and that I worked across the street at Lisbon Area Health Services.

Most of the time when I tell people I am a respiratory therapist, they don't know what it is. In this case he said, "…you have a very important job, you know. I'll bet you even tell the doctors what to do in some cases." Being politically correct, I agreed that maybe sometimes I might have done that. It turns out, this WWII veteran had worked as an OR [operating room] technician for some of his time after he was discharged.

He spoke about the difficulties that patients he worked with had with breathing in the OR and how the respiratory therapist was the person who always seemed to know what to do to help his patients with their breathing. He also spoke about how patients who had come in with difficulty breathing would say how much they wanted to leave the hospital so they could get out and have a cigarette. Things have not changed so much since his day as an OR technician. That is the challenge that keeps me involved with respiratory care today. Helping people quit smoking is my main passion in life.



It was a wonderful exchange and made me feel really good about my chosen profession, respiratory care. It had been some time since I had heard that from someone off the street. That kindly WWII veteran totally made my day! ■

Tamara McCabe Halvorson, BA, RRT, is respiratory care manager at Lisbon Area Health Services in Lisbon, ND.

International Fellowship Program Looking for City Hosts

Every year the AARC sponsors an International Fellowship Program that brings physicians, therapists, and nurses from other countries to our shores to learn more about American-style respiratory care in two cities. It can't happen without city hosts in each of the localities, and now is the time to step up and volunteer.

Learn more about the program and apply by the June 1 deadline at www.aarc.org/resources/international_fellows/. The fellowships take place in the fall just prior to AARC Congress 2013, scheduled this year for Nov. 16–19 in Anaheim, CA.

For more information, contact April Lynch at lynch@aarc.org. ■

National Health Observances

- **National Asthma and Allergy Awareness Month**; May; Asthma and Allergy Foundation of America; (800) 727-8462; info@aafa.org
- **World Asthma Day**; May 7; Global Initiative for Asthma; www.ginasthma.com
- **Air Quality Awareness Week**; April 29–May 3; National Oceanic and Atmospheric Administration; (301) 713-1867; www.airquality.noaa.gov
- **World No Tobacco Day**; May 31; Pan American Health Organization; (202) 974-3000; www.who.int/tobacco/wntd/en

RT Student Members: Send Us Your Stories and Editorials

AARC Times is always looking for good stories from AARC student members that relate special experiences and give the RT student perspective on the respiratory care profession they have chosen as a career. We have published the stories of several student members in *AARC Times* this year, and we continue to encourage you to share your experiences.

Have you volunteered at a summer asthma camp or helped organize the DRIVE4COPD program in your state? Have you advocated for respiratory therapy in your state capitol or on Capitol Hill? Maybe you and your RC student friends have collaborated to build a house with Habitat for Humanity. Perhaps you witnessed a lifesaving event outside the hospital setting or experienced something that took your breath away. Whatever the story, we are interested in seeing it.

If you have a story to tell, please contact *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org and include in the subject line, "Student Member Story." Be sure to give us your full name, AARC member number, a brief description of the story subject, and why you would like to have it published. Then attach a Word document of the story. We hope to hear from you soon! ■

A Day of Hugs and Reminiscence

by Linda Newswander, RRT

Linda Newswander took time out of her busy schedule to accompany Barb and Lester Beard on a trip back to their hometown.

I have been a respiratory therapist for 37 years and have worked at Fleur Heights Center for Wellness and Rehab in Des Moines, IA, for the past several years. Barb and Lester Beard are residents of the facility. Barb has been ventilator-dependent since 2004 due to a rare condition called acid maltase deficiency. Prior to that, she had a tracheostomy at age 50 and had been nocturnally ventilated.

Barb is a beautiful and cheerful 86-year-old. She and Lester are wonderful examples of love and devotion, having been married for 67 years. Those who enter their shared room at the facility cannot help but see the love and concern they have for each other.

Last September, I assisted Barb, Lester, and their children, Dave and Karen, as they enjoyed a long-awaited trip to their hometown of Newton, IA. Lester built several of their homes there and also helped construct a number of other homes and businesses in the city. We toured the town all afternoon and visited with some of their longtime friends. There were lots of hugs and reminiscing. Until this visit to Newton, Barb had not been on a trip for over three years.

I believe the memory of this day will linger long for Barb and Lester. It will live on in my memory too, as a great example of how we, as RTs, can make a difference in the lives of others. ■

Linda Newswander, RRT, is a respiratory therapist at Fleur Heights Center for Wellness and Rehab in Des Moines, IA.

Newswander (center standing) joins Barb, Lester, and their son Dave and daughter Karen as they prepare to make the trip.

Longtime friend Mary offers a hearty send off to Barb as the van gets ready to roll.

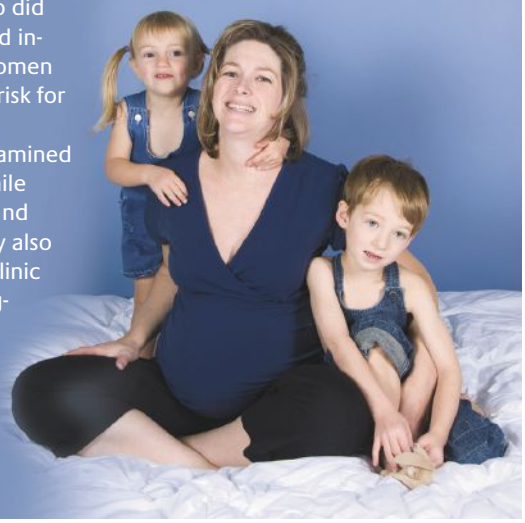
Influenza Vaccination in Pregnant Women and Young Children

Two new studies have looked at influenza vaccination in specific populations.

In the first, scientists at the U.S. National Institutes of Health and the Norwegian Institute of Public Health analyzed data on pregnant women in Norway who did and did not receive the H1N1 flu vaccination in 2009–2010. Results showed influenza infection increased the risk of fetal loss by up to twofold in these women while influenza vaccination did not. In fact, the findings suggest a reduced risk for fetal loss in women who received the vaccine.

In the second, investigators from Wake Forest Baptist Medical Center examined vaccination rates among children under age five over a five-year period. While health officials recommend the vaccination for all children age six months and older, their results showed less than 45% actually received the vaccine. They also found that one in six children who went to the emergency department or clinic with fever and respiratory symptoms during peak flu season had the flu, suggesting many illnesses could have been prevented with better vaccination rates.

The first study was published in the online edition of *The New England Journal of Medicine* on Jan. 17. The second appeared in the February issue of *Pediatrics*.



Severity of Emphysema Predicts Mortality

In the first study to examine the relationship between emphysema severity and mortality, researchers from Norway conclude that severity is a strong independent predictor of all-cause, cardiovascular, and respiratory mortality in ever-smokers with or without COPD.

The research was conducted among a community-based sample of 947 ever-smokers and looked at both severity of emphysema and mortality and airway wall thickness and mortality. Over an eight-year period, subjects underwent CT scans, with the degree of emphysema categorized as low, medium, or high based on the percent of low attenuation areas. Subjects were also evaluated for COPD via spirometric measurement of airway obstruction, and 462 were diagnosed with the condition.

Four percent of the 568 subjects with a low degree of emphysema died during follow-up, compared with 18% of the 190 patients with a medium degree of emphysema and 44% of the 189 patients with a high degree of emphysema. After adjustment for sex, COPD status, age, body mass index, smoking, and measures of lung function, survival in the low emphysema group was 19 months longer than survival in the middle and high emphysema groups for all-cause mortality. Compared with subjects in the low emphysema group, subjects with a high degree of emphysema had 33 months shorter survival for respiratory mortality and 37 months shorter survival for cardiovascular mortality.

The study appeared in an online ahead-of-print edition of the *American Journal of Respiratory and Critical Care Medicine* in January.

Robots Help with Infection Control During Flu Season

Robot-like infection control devices first used in hospitals in Singapore during the 2002 SARS outbreak are now being tested at Johns Hopkins. The devices disperse a thin film of hydrogen peroxide across all exposed equipment surfaces, as well as on floors and walls, then detoxify the disinfecting chemical.

Initial results from a study conducted in single isolation rooms showed the cleaning strategy reduced by 64% the number of contaminations with the most common drug-resistant organisms. Protection from infection was conferred on patients regardless of whether the previous room occupant was infected with drug-resistant bacteria.

Asthma Risk in Kids: Pollen Confirmed as a Factor

Researchers from the United States and Sweden are shedding some new light on factors that may or may not increase a child's risk for asthma. In the Swedish study, investigators assessed the link between pollen exposure in pregnancy and hospitalization for asthma symptoms in the first year of a child's life. Results showed women who were exposed to high levels of pollen during their final 12 weeks of pregnancy were more likely to have an infant who was hospitalized with asthma symptoms.

The finding held true even after results were adjusted to take maternal smoking and pollen season into account. The study was conducted at Umea University and involved more than 110,000 pregnancies.

The U.S. study involved an analysis of medical records for children born in Rochester, MN, between 1976–1979. Normal birth weights were recorded for 3,740 of the children while 193 had low birth weights. Overall, 6.7% of the low birth weight children were diagnosed with asthma by age six versus 5.4% of those with normal birth weights. The investigators published their findings in the January issue of the *Annals of Allergy, Asthma and Immunology*. ■

Breath Analysis Field May Hold Promise

New research out of the University of Vermont holds promise for the emerging field of breath analysis. In a study conducted among mice, researchers found that the technique may be useful in more quickly diagnosing common bacterial infections of the lung.

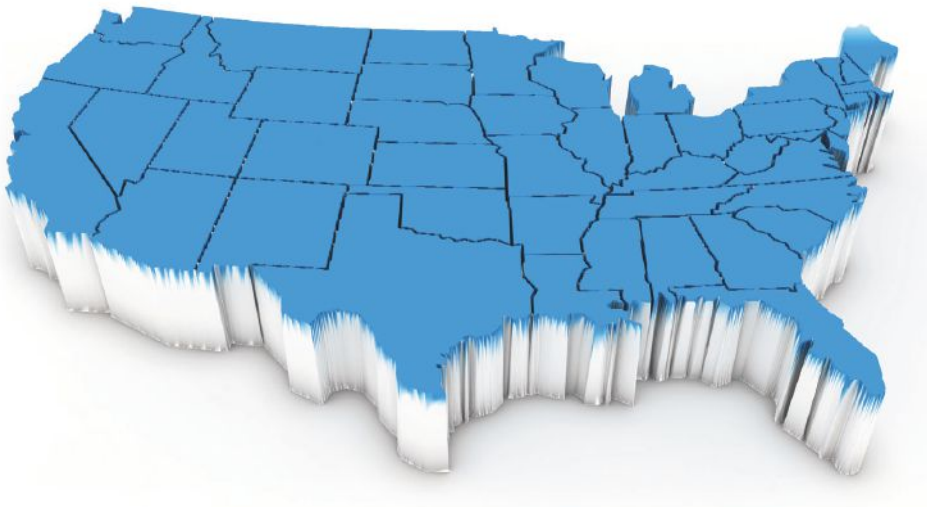
The investigators analyzed volatile organic compounds released by mice that were and were not infected with *Pseudomonas aeruginosa* and *Staphylococcus aureus*. A statistically significant difference was seen between the breath profiles of infected and uninfected mice, and researchers were also able to differentiate between the two types of bacteria, as well as between two different strains of the same *P. aeruginosa* bacterium. The next step in the ongoing research will be to sample patients to determine the strengths and weaknesses of the technique.

The study was published in the January issue of the *Journal of Breath Research*. ■

States Shortchange Tobacco Cessation and Prevention

More than $25 billion flow into state coffers every year as a result of state excise taxes on tobacco and payments resulting from the 1998 settlement with the tobacco companies. How much of it goes to support tobacco cessation and prevention? According to a recent report from the American Lung Association, not much.

In fiscal year 2013, states spent just $462.5 million on programs to prevent smoking and help people quit — a little more than 10% of the amount recommended by the Centers for Disease Control and Prevention (CDC). The only states even coming close to meeting CDC expectations right now are North Dakota and Alaska. ■



Early and Repeated White Blood Cell Counts Help Diagnose Infants with Pertussis

Using medical records from five Southern California pediatric ICUs between September 2009 and June 2011, researchers publishing in the *Journal of the Pediatric Infectious Diseases Society* have found that taking early and repeated white blood cell (WBC) counts is critical not only in determining whether infants have pertussis but also in identifying which of those children are at highest risk of death from the disease.

The study involved 31 infants, eight of whom were determined to have more severe infections, as characterized by pulmonary hypertension and death. Infants with more severe disease had median peak WBC counts of 74,100 compared to 24,200 among infants with less severe disease. All but one of the infants with more severe disease had at least a 50% increase in WBCs within 48 hours, while none of those with less severe disease had more than a 50% increase.

Infants with more severe infections had higher maximum heart and respiratory rates as well and were more likely to develop pneumonia, seizures, hypotension/shock, and renal failure. They were also more likely to be intubated. Six of the infants received exchange transfusions, and four of those died. All four of the deaths were in infants who were in shock at the time of their transfusions. ■

Potential Treatment for Asthma Associated with Body Weight

The clinical observation that both obesity and anorexia can lead to asthma was the impetus for new research that ended up showing that the appetite regulating hormone leptin controls airway diameter as well.

Columbia University investigators arrived at that conclusion first by showing that abnormally low or high body weight and fat mass results in bronchoconstriction and diminished lung function. Next, they showed that leptin increases airway diameter independently of, and at a lower threshold than, its regulation of appetite. They also showed that regulation of airway diameter occurs regardless of local inflammation in the bronchi.

From there, the investigators conducted two experiments to determine if these findings might have a bearing on asthma therapy. In one, they took obese, asthmatic mice and administered a substance that increases lung inflammation. When they infused leptin in the brains of these mice for four days, no effect was seen on inflammation but airway diameter and lung functions were normal, suggesting to the researchers that obesity-related asthma can be cured in mice without affecting inflammation. In the second experiment, they treated obese, asthmatic mice with drugs that decrease parasympathetic tone and thereby also inhibit leptin deficiency-related brain signaling. Again the asthma abated after several days.

"The therapeutic implication is that it may be possible to correct asthma in obese people with drugs that inhibit parasympathetic signaling," study author Gerard Karsenty, MD, PhD, was quoted as saying. Dr. Karsenty notes that drugs to inhibit parasympathetic signaling are already on the market, but further study is needed before they could be used to treat body weight associated asthma.

The study was published in the online edition of *Cell Metabolism* in January. ■

Quitting Smoking Reduces Anxiety

British researchers publishing in the *British Journal of Psychiatry* are debunking the myth that smoking relieves stress. Their study of nearly 500 smokers attending stop-smoking clinics in England found that people who kicked the habit actually reported feeling less anxious once they had given up tobacco. The finding was particularly strong in those who reported suffering from mood and anxiety disorders. ■

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.**

Calendar of Events

AARC & State Society Programs

April 3–5
Baton Rouge, LA
LSRC's 43rd Annual Education Meeting and Exhibits
Contact: Raymond Pisani, (985) 518-3346

April 6–9
SeaTac, WA
Pacific Northwest Regional RC Conference and Scientific Assembly
Contact Bob Bonner at bbonner@highline.edu

April 8–10
Kalamazoo, MI
Michigan Society for Respiratory Care's 2013 Spring Conference
Contact: (866) 989-6772

April 11–12
Ogden, UT
USRC's Annual Respiratory Conference and Exhibition
Contact: Laurie Myers, (801) 652-7126

April 11–12
Wichita, KS
36th Annual KRCS Spring Educational Seminar
Contact: Melanie Asmussen, (316) 268-5812

April 15–16
Fargo, ND
NDSRC's Annual Spring Convention
Contact: Angela MacAdams, (701) 234-6777

April 18–19
King of Prussia, PA
PSRC's Eastern Regional Conference
Contact: Thomas Lamphere, (215) 687-2904, www.psrc.net

April 18–19
Cocoa Beach, FL
Florida Society for Respiratory Care Space Coast Cardiopulmonary Conference
Contact FSRC at (866) 534-6172 or www.fsrc.org "Live Events"

April 23–24
Las Vegas, NV
Nevada Society for Respiratory Care's 2013 Annual Conference Spring into Action
Contact Connie Small at (702) 807-9311 or conkerdoodle@hotmail.com

April 24–26
Kalispell, MT
39th Annual MSRC Convention
Contact: Bill Carmichael, (406) 455-5242

April 24–26
Shawnee, OK
OSRC's 49th Annual Summer Exhibition
Contact: Gary Revas, (405) 271-8001 ext 37787 or (405) 308-7987

April 29–May 1
Wisconsin Dells, WI
Wisconsin & Minnesota North Regional Respiratory Care Conference
Contact: www.nrrcc.com

April 30–May 1
Plantsville, CT
CTSRC Symposium XXXI
Contact: Susan Albino, (203) 739-7878

May 1–3
Lake Ozark, MO
MSRC's 42nd Annual Conference and Business Meeting
Contact: Aaron Light, (417) 447-8824

May 1-3
Vail, CO
CSRC State Conference: Rockin' Rollin' Respiratory
Contact: Kari Woodruff, (720) 235-4986

May 15–16
Bangor, ME
The Maine Event 2013
Contact: John Higgins, (207) 542-5482

May 15–17
Kearney, NE
Great Plains Conference on Respiratory Care
Contact: Joe Rush, (402) 413-3275

May 29–31
Riverdale, IL
Illinois Society for Respiratory Care's Annual Conference and Exhibition
Contact: Douglas McQueary, (773) 962-4086

June 13–14
Shawnee, OK
OSRC's 49th Annual Meeting
Contact: Patrina Nesbitt, pnesbitt@chcares.com

July 15–17
Orlando, FL
AARC Summer Forum
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

July 29–30
Columbus, OH
Ohio Society for Respiratory Care's 35th Annual State Meeting
Contact: Joe Huff, www.osrc.org

October 20–26
Respiratory Care Week
Contact AARC, (972) 243-2272, www.aarc.org/rcweek

October 23
Lung Health Day
Contact AARC, (972) 243-2272, www.aarc.org

November 16–19
Anaheim, CA
AARC Congress 2013
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

Other Meetings

June 14–15
Chicago, IL
COPD8USA Conference sponsored by COPD Foundation, Respiratory Health Association, and University of Nebraska Medical Center
Contact: (866) 316-COPD (2673) or info@copdfoundation.org

Submissions for the next available issue are due April 19.

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

Classifieds

ADVERTISING SECTION

For Sale/For Rent

ET-CARE Endotracheal Tube Fixation Device

The new ET-CARE™ Endotracheal Tube Fixation Device — no tape, built-in bite block, sliding track for oral hygiene, includes NG-tube holder. The firm fixation with ET-CARE lessens excessive x-rays, decreases the potential for VAP, reduces accidental extubation. Manufactured in USA (patent pending) by IPI Medical Products Inc. (561) 330-7820, www.ipimedicalproducts.com.

Nozguard Hypoallergenic Adhesive Tape

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AARC Times Classified Advertising Information & Requirements:

Classified Word Advertisements
AARC Members: $50 for 50 words or less; each additional word, $1. Free Internet placement. Nonmembers: $60 for 50 words or less; each additional word, $1.20. Listings are categorized by state. Following the state listings are United States/International, For Sale/For Rent, Miscellaneous, and Situations Wanted. All copy should be typed double-spaced. All ads will be set in 8-point type. To calculate the cost per advertisement, a "word" is considered to be one or more letters, numbers, or special characters with a space before and after.

Ads are featured on the AARC website for one month after publication. Ad may only be placed on the website with an insertion order for placement in an AARC publication. Ad is noncancelable after placement on the website. NOTE: *AARC Times* reserves the right to refuse any advertisement not directly relevant to respiratory care. *AARC Times* does not endorse any advertiser, its positions, practices, services, or products.

We reserve the right to make editorial changes for reasons of clarity and consistency. Every effort is taken to avoid mistakes, but *AARC Times* cannot be responsible for clerical or printing errors. **Deadline for Ad Placement/Cancellation** Deadline for ad placement and written cancellations for the next available issue is April 17. Blind ads available. **For Recruitment Advertising Information, Contact Classified Advertisement** Andrea Conté • Alhambra Plaza • 725 N. Highway A1A, Suite C-106 • Jupiter, FL 33477 • (561) 745-6793 • Fax (561) 745-6795 • AARCAD@aol.com

Recruitment Display Advertisements

For Recruitment Display Ad Rates, go to www.aarc.org/marketplace/media_kit/recruitment_2013.pdf, or contact Tim Goldsbury and Associates, Alhambra Plaza, 725 N. Highway A1A, Suite C-106, Jupiter, FL 33477, (561) 745-6793, Fax (561) 745-6795

Neonatal Transport Coordinator & Neonatal Respiratory Therapist

St. John Health System has an immediate opening for both Neonatal Transport Coordinator and Neonatal Respiratory Therapist.

Qualified applicants must be licensed by the Oklahoma State Board of Medical Licensure and Supervision and is renewable every two years. Neonatal Resuscitation Program (NRP) certification is required, Neonatal/Pediatric Specialist (NPS) certification preferred, and Certified Neonatal/Pediatric Transporter certification preferred.

Applicants must also have a minimum of three to five years experience working in an advanced neonatal ICU setting and have ground and flight transport experience on a RT/RN transport team.

- St. John was voted the #1 Hospital in Tulsa metropolitan area in U.S. News Media & World Report's 2011-2012 Best Hospitals ranking.
- Benefits are available within the first 30 days of employment.

For more information or to apply please visit our website: www.stjohnhealthsystem.com

St. John Health System

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Provides age specific respiratory care to patients of all ages; neonates, infants, toddlers, pre-schoolers, school-age patients, adolescents, adults, and geriatric according to physician prescription. Serves as professional resource to Bayhealth customers, internal and external.

Requirements:
Education: Graduate of an American Medical Association (AMA) approved school with Associate of Science degree required. Bachelor's preferred.

Experience: 6 months experience preferred.

Certification/License: Registered by National Board for Respiratory Care (NBRC), Delaware Respiratory Care license (or eligible), and current BCLS Certification required. NRP and ACLS Certifications to be obtained within 9 months of employment.

Computer/Software Knowledge: Proficiency in Microsoft Word and Excel, keyboarding skills, and ability to utilize order entry systems. Experience using software applications to document patient therapies and/or treatments.

Knowledge/Skills/Abilities: Excellent verbal, reasoning, time management/ organizational skills.

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Respiratory Care Manager

Directs the daily activities of the Respiratory Care Department. Responsible for the clinical performance of all staff. Insures that all departments meet regulatory compliance and standards. Insures that departments operate within defined budget parameters. Serves as resource for physicians, nurses and all hospital staff for areas of Respiratory Care. Reports to Director of Respiratory Therapy.

Education: Requires an A.S. in Respiratory Care from an AMA Approved School. BS or MHA/MBA Degree preferred.

Experience: 5 years hospital or outpatient clinical coordinator or progressive management and administrative experience. 3+ years' experience in Respiratory Care with recent experience in management of Respiratory Care, Pulmonary Function Testing, and Blood Gas Laboratory preferred.

License/Certification: Registered by the National Board for Respiratory Care. BCLS & ACLS certifications (or within six months of hire). DE Respiratory Care License (or eligible).

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Delivering world class care, our team is specialized in both adult and pediatric critical care, including cardiac (intra-aortic balloon pump and LVAD patients), NICU, PICU, and maternal fetal medicine. Ongoing training is provided including OR intubation rotations along with scenarios in our state-of-the-art high definition simulation labs.

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We currently seek a Respiratory OverRead Clinical Specialist to perform analysis on pulmonary function data. In this role you will be responsible for resolving questions from sponsors, investigator sites, monitors and project managers about data quality. This position will be responsible for ensuring that all Respiratory OverRead clinical trials meet their contracted turnaround time. You will on request and periodically provide reports to the Director of Respiratory OverRead about the status of the Respiratory OverRead program.

Qualifications include:

- Minimum of 2 years of College in biological sciences from an accredited University or relevant work experience. Preferred Bachelor's degree from a technical college or university with a major in respiratory, physiology, life sciences or related experience.
- 2 or more years' experience in pulmonary function testing or related experience.

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University of Missouri Health System

**Assistant/Associate/Full Professor-
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Respiratory Therapy Program
University of Missouri**

The University of Missouri Respiratory Therapy program is recruiting for a 12 month benefit eligible full time position in the School of Health Professions. The program offers a Bachelor of Health Sciences degree in Respiratory Therapy and an online degree completion program for Registered Respiratory Therapists wanting to earn the Bachelor of Health Sciences degree in Respiratory Therapy. The successful candidate will be responsible for teaching didactic courses, developing and teaching online distance education courses, and will be involved in outreach and research activities.

Applicants must have a Master's degree (with a Doctoral degree in education or a related field strongly preferred), be a graduate from a CoARC approved respiratory therapy program, be a registered respiratory therapist through the NBRC, and licensed to practice in the state of Missouri. A minimum of 5 years of recent clinical and teaching experience is required. Preferred qualifications include prior experience with online education, credentials as a BLS instructor, and being ACLS certified.

Applications will be reviewed until the position is filled. Salary will be commensurate with experience. The University of Missouri offers excellent tuition assistance and benefits.

Please apply online at http://hrs.missouri.edu/find-a-job/academic/index.php and include CV and references. For more information about the position, please contact (573) 882-9722.

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[1] EMMA Users Manual.