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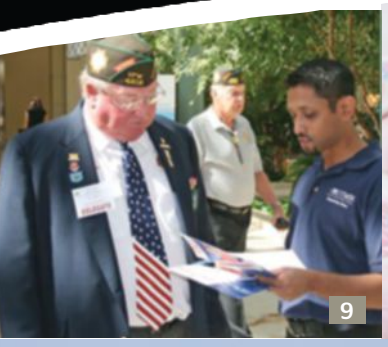


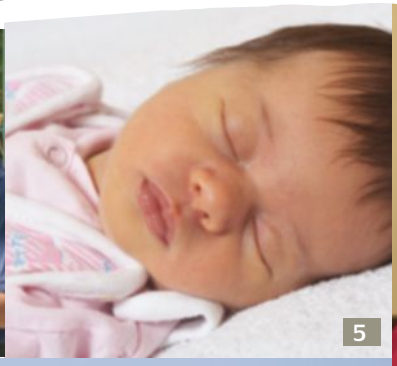



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## AARC Strategic Objectives

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

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

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

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

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


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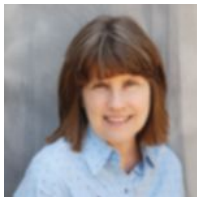

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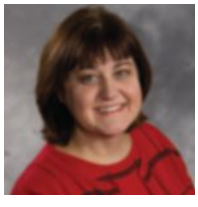

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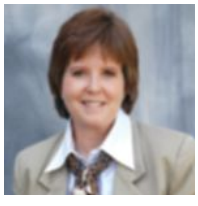

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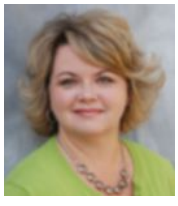

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Ventilation for Life

# Management of Neonatal Apnea

by Kathleen Deakins, MSHA, RRT-NPS, FAARC

Newborn term infants encounter a host of changes when transitioning to extra-uterine life, while premature infants experience different challenges. Neonatal apnea is a condition that affects both term and pre-term infants for a variety of reasons. Clinical manifestations of neonatal apnea, including apnea of prematurity (AOP), require careful management that may include invasive or non-invasive treatment, ventilation, monitoring, and pharmacologic intervention to prevent acute and long-term complications.

Infants may encounter respiratory depression and apnea following acute resuscitation or when exposed to maternal medications such as magnesium sulfate or general anesthetics. Others receiving medications (e.g., prostaglandins) for specific congenital heart disease conditions to maintain a patent ductus arteriosus are also at risk.[1] Infants may also become listless and develop apnea and respiratory failure in the presence of infection if an underlying cause is not identified, monitored, and treated. A thorough assessment to determine the cause of apnea should be conducted to ascertain if other conditions including temperature instability or previous history of neurologic compromise are contributors to apnea (e.g., birth trauma, intraventricular hemorrhage, airway abnormalities, or asphyxia and heart failure in older infants).[1] AOP is prevalent in infants <28 weeks gestation and in nearly all infants 24–26 weeks; but this condition may also be present in some term infants.[2] These infants experience respiratory pauses followed by complete cessation of breathing. AOP may occur in patients with or without lung disease as early as the first day of life and may continue throughout the postnatal period for up to five months.[1] Some apnea events are more clinically detrimental than others and need to be treated to prevent abnormal developmental outcomes.

Unlike periodic breathing that combines a regular respiratory pattern and respiratory pauses, AOP is defined as absence of breathing for 10–30 seconds.[1] A classic event is characterized by 15–20 seconds without breathing accompanied by bradycardia and sometimes oxygen desaturation.[1] Immature central nervous system control and respiratory muscle inactivity are responsible for apnea events.[3] The mechanism of AOP occurs within the brainstem near the medulla where apneic events of varying nature originate.[4,5]

The type and frequency of events may include a host of problems such as bradycardia, hypercapnia, hypoxia, and airway obstruction. A combination of obstructive, central, or mixed apneas occur with the most common events being mixed in nature.[6] Bradycardia resulting in changes in blood pressure may affect cerebral blood flow in the absence of cerebral autoregulation and may result in further complications.[1] In premature neonates, the normal ventilatory response to hypercapnia may be absent, resulting in the inability to increase respiratory rate when the $PaCO_2$ rises.[1] Hypoxia, one of the causes of central respiratory depression, was first recognized when apnea events decreased while exposing infants to supplemental oxygen.[7] Isolated hypoxia episodes may be related to sleep stage (especially while in rapid-eye movement sleep) during airway obstruction.[2] Prolonged events must be managed carefully to reduce the incidence of morbidity and mortality.

Apnea, especially AOP, accounts for one of four primary causes of prolonged neonatal hospital length of

about the author...

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stay.[2] Identifying the cause of neonatal apnea is dependent upon close observation and the availability of monitoring required for an objective assessment including pulse oximetry ($SPO_2$), heart rate, respiratory rate, and blood pressure. To clearly define the types and severity of apnea, extensive infant monitoring studies are sometimes required, including impedance monitoring to assess sleep stage, esophageal pH, and airflow if events are recurrent.

## Basic supportive measures

Simple maneuvers can be implemented, such as assuring the infant is maintained in a neutral thermal environment conducive to stabilizing core body temperature. To reduce the incidence of airway obstruction, the head and neck should be positioned appropriately without flexion to prevent pharyngeal obstruction; the nares should be carefully inspected and cleared to assure the nasopharynx is patent.

Supplemental oxygen may be required to maintain target levels of oxygen saturation and prevent hypoxia. These basic maneuvers promote positive results and eliminate the chance of missing key components during assessment.

## Pharmacologic management of apnea

Pharmacologic measures such as administering naloxone may be required for neonatal apnea caused by maternal exposure to anesthetics or sedatives or following asphyxia episodes during resuscitation.[8] For AOP, treatment with methylxanthines may be required. Caffeine has been shown to decrease the frequency of apneic episodes and need for invasive mechanical ventilation during the first one to seven days of treatment by increasing diaphragmatic stimulation and contraction, increasing muscle tone of the pharynx, and possibly increasing response to $PaCO_2$.[8] Schmidt et al noted patients who were given caffeine and successfully weaned from mechanical ventilation within one week were less likely to develop bronchopulmonary dysplasia or other complications related to AOP.[9] Caffeine is routinely initiated on infants <1500g who are on invasive ventilation with hopes of increasing the chance of successful extubation and for infants who fall into the high-risk category for AOP.

## Nonpharmacologic interventions: mechanosensory stimulation

As early as the first minutes after birth and for patients with AOP, mechanical stimulation including tactile stimulation is used to encourage spontaneous movement and respiration. Methods such as bumper beds, water beds, or simple touch of the hand are used to stimulate spontaneous breathing.[10] Other techniques, including olfactory stimulation that allows the introduction of scents into the incubator, may be effective in reducing the number of apnea episodes in low birthweight infants.[11] Martin and Wilson complemented the work of Bloch and Salisbury who displayed evidence that stimulation does play a role in reducing apnea and the frequency of desaturation events through changing the excitability of neurons from unstable to stable and synchronous through a non-pharmacologic intervention producing significant benefits for this patient population.[10] The relationship of mechanical stimulation and reduction of apnea events continues to be examined.

## Noninvasive positive airway pressure

Maintaining an open airway and assuring adequate ventilation in all situations is the primary focus when treating neonatal apnea. Different types of noninvasive respiratory support have been used in treatment of AOP. Nasal noninvasive positive airway pressure in the form of nasal continuous positive airway pressure (CPAP) is used to maintain alveolar recruitment, increase functional residual capacity, improve oxygenation, and stabilize the upper airway by keeping it open.[1] Upper airway obstruction has been shown to contribute to the number of obstructive or mixed apnea events in premature infants and can be reduced by nasal CPAP.[1] CPAP used in infants <32 weeks gestation with AOP may contribute to modifying pulmonary stretch receptors in the airway by sending signals to the brain via the afferent neurons that control the rhythm of both breath phases.[10] Nasal CPAP of 4–6 cm $H_2O$ is routinely used in AOP.[12] In very low birthweight infants with severe or repeated apneas,



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higher pressures, intermittent noninvasive ventilation, or bi-level CPAP may be required.[13] Variable flow and bubble CPAP have been shown to reduce the incidence of bradycardia and oxygen desaturations three times greater than noninvasive positive pressure ventilation (NIPPV).[14] Perhaps this is due to wide variability of peak airway pressures delivered during NIPPV that produces minimal to no chest excursion for a large portion of the time.[15] Recommendations for using these alternatives as part of routine care have not yet been established.[13] High-flow nasal cannula has also been used but lacks significant evidence supporting its role in the treatment of AOP, and no recommendations for flow rates have been established to date.[16]

## Invasive mechanical ventilation

Endotracheal intubation and invasive mechanical ventilation may be required for central apnea or respiratory failure when apnea does not respond to stimulation, pharmacologic, or noninvasive interventions. Invasive mechanical ventilation should be instituted at settings to support adequate alveolar ventilation by providing a minimum minute ventilation.[1] In clinical practice, ventilator settings include frequencies of 20–40 breaths per minute, tidal volumes 4–7 mL/kg, and $FiO_2$ to maintain adequate oxygenation, evidenced by meeting target oxygen saturation levels. Mode of ventilation should allow spontaneous breathing and a mandatory backup minute ventilation. There is no specific recommendation or modality of choice, but volume-targeted modes seem to be most popular at this time. Monitoring carbon dioxide invasively ($PaCO_2$) or noninvasively (transcutaneous $TcCO_2$) and oxygenation is needed to create a balance to prevent hyperventilation while maintaining a stimulus to breathe spontaneously.

## Long-term monitoring

Because infants with neonatal apnea can have respiratory events up to and including 43–44 weeks post-conceptual age, the timing of discharge from the hospital following a history of neonatal apnea should be cautiously evaluated.[2] Infants with AOP may require home monitoring if apneas and bradycardias continue. Criteria for referring patients for home monitoring have been studied for many years, and consensus on how long to monitor does not exist among experts. Although inconsistent across all hospitals, patients are followed for one to 10 days to monitor absence of apneas and bradycardias before discharge.[2] Patients who continue to exhibit apnea and bradycardia may be monitored with a home monitor or remain in the hospital.[2]

The management of neonatal apnea, including AOP, continues to be complex; and the basic understanding of its underlying cause is needed to proceed with specific treatment. Management includes supportive measures, stimulation techniques, pharmacologic intervention, and invasive and noninvasive ventilation modalities. However, there is no specific recommendation nor has any specific modality been demonstrated as accepted as superior to another. Monitoring parameters in the acute phase and indications for and the long-term management, including home monitoring of apnea of prematurity, continue to be explored. ■

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# How Effective Is Patient Education? The Answer May Surprise You

by Ashley F. Dulle, BS, RRT, AE-C

Determining the effectiveness of various chronic disease intervention strategies is paramount in this time of evidence-based medicine and continuing cuts in health care spending. As respiratory therapists, we no longer have the luxury of determining how to manage our patients solely because it makes sense. Current health care reimbursement requires our activities to be supported by research.[1] However, as we search the numerous databases to identify research that supports various health care activities, we must be more specific in defining the intervention and what outcomes we will use to determine the activity's effectiveness.

## The answer depends on the question

So, how effective is patient education? The answer to this question changes based on how you define education and what you consider to be outcome measures of effectiveness. If you define education as the transfer of knowledge, then determination of effectiveness would be whether or not patient education results in an increase of disease-specific knowledge. According to Hill et al in *Patient Education and Counseling*, it does; but the increase of patient knowledge alone is not enough to determine effectiveness of education if the goal is to justify the practice of and resources required for patient education.[2] Nonetheless, patient knowledge is only one part of the puzzle. Effective outcomes must be based on health care utilization, reduced health care costs, improved quality of life, etc. Current studies have not shown patient education to be effective in adults with asthma, diabetes, or even the majority of arthritis patients.[3] The lack of effectiveness of education was also supported by a review of health education programs for patients with COPD.[4]

If patient education is not effective, why do so many chronic disease management guidelines identify patient education as imperative to disease management? They don't necessarily. The majority of guidelines do not recommend patient education alone; they recommend self-management education paired with other elements of disease management. Self-management education goes beyond traditional patient education by teaching problem-solving skills in addition to offering information and technical skills. In addition, self-management education aims to improve overall subjective as well as objective measurements of disease or patient movement.[3]

## A better question

How effective is patient education? A better question would be how effective is patient self-management education in the management of chronic diseases? Even with this question, we must define "effective." Is effectiveness the measure of reduced health care usage, improved quality of life, a decrease in health care costs, or all the above? When surveying disease management programs, Fitzner agrees that current research shows a variety of outcome measures being used to determine effectiveness.[5] The Disease Management Association of America recommends utilizing clinical outcomes, economic (e.g., utilization) outcomes, financial outcomes, and humanistic factors. A review of current medical literature finds that patient self-management education is effective at improving many of these outcomes in most chronic diseases; this article's focus will be on asthma and COPD.[3]

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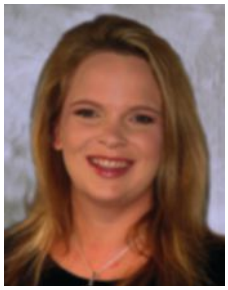

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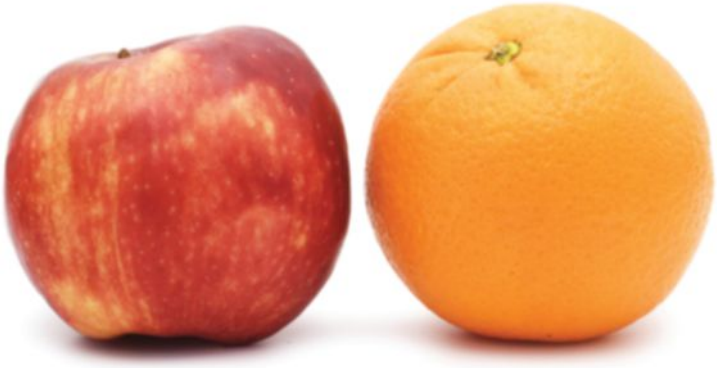
## Effectiveness in asthmatic patients

A review of asthma disease management study outcomes from 2009 found that 55.2% of studies had a statistically significant effect on clinical outcomes and 58.4% on economic outcomes.[6] Shelledy et al found that an asthma management program could reduce health care costs by $70,000 in six months, which equates to approximately $880 per patient per year, utilizing current prevalence data from the American Academy of Allergy, Asthma & Immunology that equates to $30 billion per year in health care savings.[7,8] Both studies found an increase in the quality of life for patients receiving asthma self-management education versus those who did not.

In 2009, The Cochrane Collaboration evaluated a total of 36 studies on the effectiveness of self-management education for patients with asthma. Data obtained for the review found a significant reduction in hospitalizations (RR 0.64), emergency room visits (RR 0.82), unscheduled physician visits (RR 0.68), days off work or school (RR 0.79), nocturnal asthma (RR 0.67), and an improvement in patients' quality of life. The result of the Cochrane review is a combination of studies that looked at optimal self management, self management and regular review, self monitoring only, regular review only, and written action plans only. The combination of these interventions in the reporting of the overall data could account for a reduction in the overall effectiveness of many of the measures' outcomes. Despite this reduction, clinically relevant effects were seen in most outcomes.[9]

## Effectiveness in COPD patients

A review of effectiveness of education on COPD showed that patients who were not receiving education on their disease were 2.3 times more likely to require a hospital admission, and their length of stay was increased by three days. In addition, those patients required twice as many daily dosages of rescue medications. Overall, health care costs were also increased 10% for control group mean; this could equate to a savings of >$1.8 billion per year in the United States alone. The education group also had a significant improvement in the domains of fatigue and mastery for the quality of life.[4] Another review from 2008 also supported the findings above; in addition, the review showed a significantly improved exercise capacity for patients in a disease management program as well as moderately improved health-related quality of life.[10]



In 2009 the Cochrane Collaboration performed a review of studies evaluating self-management education in COPD management. The review found a significant reduction in the probability of at least one hospitalization. However, no significant effects were found in the number of exacerbations, emergency department visits, lung function, exercise capacity, and days lost from work or school.[11]

## No concrete answer

There is no concrete answer to the effectiveness of patient education because most of the literature is comparing apples to oranges and, therefore, the data is not concrete. Most reviews cite numerous reasons for the variation and limitation of the reviews including:

- Broad variety of study outcomes
- Various time periods for evaluation
- Various intervention components
- Low number of participants
- Various definitions of disease
- Various interventions utilized
- Altering education content.[6,11]

## What makes the most effective self-management education?

A few of the studies that were reviewed for this article reported that the integration of self-management education with other components of Wagner's Chronic Care Model improves many of the outcome measures.[11] In 2007, the *Archives of Internal Medicine* published a review of the chronic care model and its effect on COPD management. The review found that many published studies that only incorporated one aspect of Wagner's Chronic Care Model did not show an improvement in any of the outcome measures, including clinical outcomes, economic (e.g., utilization) outcomes, financial outcomes, and humanistic factors. However, studies that utilized at least two or more of the chronic care model components did show improvements in many of the outcome measures.[12]

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## Recommendation to improve chronic disease management

Most studies refer to the Wagner's Chronic Care Model to improve the reliability of evidence available to support disease management education. Wagner suggests the following interventions for chronic care disease management:

- Self management
  - education as information alone and/or
  - behavioral support by providing tools to modify behaviors
  - motivation by linking specific goals for behavior change to clinical information
- Delivery system design
  - interventions to provide advanced access to medical care
  - implementation teams to coordinate preventive measures for patients with chronic disease
- Decision support
  - use of evidence-based guidelines in practice
  - integrated specialty expertise or referrals for comorbidities
  - identifying barriers to care
  - performing performance reviews
- Clinical information systems
  - clinical registries to track population information
  - clinical reminders for patients and providers
  - provider feedback and communication.

Use of this model fosters productive interaction among all members of the health care team and informed patients. This interaction has been proven to result in a more broadly applicable, higher quality, and more cost-effective patient care.[13]

## So, what is the answer?

The answer to "How effective is patient self-management education?" is that we do not know. Additional randomized controlled trials with long-term follow-up need to be performed and assessed. Interventions need to be based on the recommended guidelines, and outcome measurements should be standardized as clinical, economic, financial, and humanistic. The current snapshot of research looks like education is effective to improve outcomes; but unless more uniformed research is performed utilizing outcomes based on current chronic care guidelines, changes to the health care delivery system will not likely occur in the future. To increase the quality of evidence to support the use of self-management education, it is recommended to utilize the following outcome measures when conducting research on chronic disease management:

- St. George's Respiratory Questionnaire
- Physician visits and costs
- Hospital admissions, length of stay, and cost
- Antibiotic and oral steroid use
- Rescue medication usage
- Six-minute walk test
- Forced expiratory volume in first second ($FEV_1$) and forced vital capacity (FVC)
- Assessment times of immediately post-intervention, six months, and one year.[3,4,5]

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# The Big Lie

by Anthony L. DeWitt, JD, RRT, FAARC

Good intentions are said to pave the road to hell. I know that when hospital lawyers stand up and tell nurses and therapists that they do not need their own policy of malpractice insurance, that they probably have the best of intentions. Surely they are trying to save employees that $200 or so that they would have to shell out for a policy. But whether they are acting on good intentions or not, the advice — that personal malpractice insurance is not needed — is bad advice. All therapists and ICU nurses should have their own policy of malpractice insurance.

Frequently a hospital will tell its staff that the hospital provides malpractice coverage for them, but this is a lie. I don't think it's a lie borne out of an intention to deceive, it's a lie borne out of ignorance. The reason it is a lie is because an insurance policy is a contract. In exchange for a sum of money, the insurer will agree to do two things:

- Defend any claims made against the insured
- Indemnify the insured (or pay out any claims) the insured becomes legally obligated to pay.

## Defining the "named insured"

Key to this contractual agreement is the definition section of the insurance policy that states the coverages and then defines who the "named insured" is. The named insured (which is usually the hospital corporation, its officers, and any board members) is the legal entity protected by the policy. Therefore, unless you are a member of the hospital board or a corporate officer, you are not a "named insured" under the hospital's malpractice policy. A person who is not a named insured is not entitled to the benefits of the policy. The hospital's insurance protects the hospital, not the individuals who staff it.

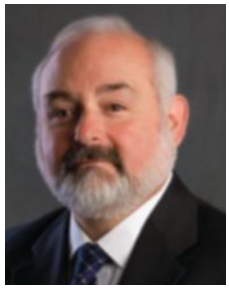
Where people tend to get confused and assume there is coverage is in the declarations of what is covered. That portion of the policy will say that the hospital is protected for the "acts and omissions of it employees, agents, servant and independent contractors." So, since the hospital is protected from liability in the event you make an error, well-meaning people make the assumption that you are, in fact, covered. However, as I already pointed out, you are not a named insured and so you are not covered.

The insurance company, which is responsible to defend and indemnify, has no legal obligation to you that you can enforce. The issue is simple when the hospital is sued for your negligence: The hospital is covered. The attorney may even act like he represents you. But he does not. He represents the hospital and owes a duty of loyalty to the organization.

The issue becomes complicated in the situation where the hospital is sued, but so is the employee. In that situation, because their interests are aligned, the hospital's insurer will often prepare a defense for the employee. But they are not legally obligated to do so. The hospital's interests come first. The only reason to defend an individual in that situation is so that the hospital has complete control of the litigation. If it becomes necessary to throw someone under the bus on the issue of liability (and make a report to the national practitioner databank), the employee is the likely target. And in the rare situation where the employee is sued but the hospital is not, the hospital's insurer has no duty to do anything! This is because insurance companies read their policies very strictly. They owe a duty *only* to the named insured.

A hospital's statement that you are covered does not bind its insurance company. There are disclaimers in

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.

every policy that an insured cannot offer to indemnify a third person without an approval from the insurance company, which insurance companies almost never give.

If someone sues the therapist but not the hospital, even if the suit has no merit, it could cost thousands of dollars to get the lawsuit dismissed. And in that situation where a suit has merit and a judgment is entered, everything a therapist worked for his entire life — his house, car, and savings — could be seized from him in a moment, rendering him a pauper.

## Respondeat superior

There is another reason to have your own insurance. The hospital, if it gets sued for something its employee does, is sued under the doctrine of "respondeat superior," or literally "let the master answer." Under common law the master was responsible for any harm done by his servant or employee.

But in those situations where the master must answer its servant's errors, there is a companion legal doctrine called indemnity. The doctrine says that if the master pays out money for a wrong committed by the servant, he can seek indemnification (repayment) from his employee. This is true even if the employee is not named in the initial lawsuit. After judgment or settlement, the employer could sue the employee and get its money back.

Indemnity suits against employees are rare, but they arise in the context of a case where an employee may admit in deposition testimony that they were negligent. I once had a nurse who admitted error after error in her deposition, faithfully telling the truth and explaining that if her area had been staffed properly, the errors would not have happened. In a rare outburst, the defense lawyer threatened to sue her for indemnity, resulting in the plaintiff claiming the nursing home defendant was trying to suppress the truth. Hospitals rarely enforce indemnity; but it does happen, and you should protect yourself from it.

When therapists don't have their own attorney, sometimes they may develop a conflict of interest with the hospital's lawyer. This is frequently the case when the therapist acted appropriately but a nurse or physician did not. The hospital is liable if any of its employees is negligent, and sometimes a hospital manager may ask its employees to shade the truth or "harmonize" the testimony on key issues. Perjury is a felony, and asking someone to shade their testimony is a crime too. But in spite of this, it does happen. Having a lawyer who answers only to you avoids this situation.

A lawyer might ask a witness to shade his testimony — but not if he doesn't represent them, and not where another lawyer does. That is a quick way to get disbarred.

One common misconception about malpractice insurance is the idea that it makes you more likely to be sued. This is incorrect. There is no place a lawyer can go to find out if you have insurance. It is not on the Internet anywhere. The only way a lawyer can find out is if he sues you or the hospital and takes your deposition. In that case, it has no affect on your being sued. Also, it is rare in the extreme for lawyers to ask about insurance coverage before a lawsuit gets filed; but even if they do, you have no obligation to inform them.

## Defend your license

But far and away the best reason to have malpractice insurance is to protect yourself in the event that you get called in front of your professional board for professional misconduct. If that happens, a malpractice policy will give you a fund of money to hire a lawyer to defend your license. Smart therapists will shop and compare insurance policies and get the one that provides the best coverage. It is truthfully the best $200 dollars you are likely to spend. No one ever says, "gosh, I wish I didn't have insurance." But they frequently regret not purchasing it. ■


# The Latest News from Sleep Researchers

Here's an overview of some of the significant studies published in the area of sleep over the past several months.

## Burn injury in obese children calls for sleep testing

Obese children recovering from significant burn injuries should be assessed for respiratory symptoms during sleep, conclude Cincinnati researchers who compared sleep parameters in 19 children a mean of eight years post burn injury. Children were classified as obese if they had a body mass index (BMI) greater than or equal to the 90th percentile based on age and gender specifications.

Overall, mean age, percent burn, percent full-thickness burn, years following acute injury, and the percentage of patients with burns to the neck region were similar in the two groups, as were total sleep time, sleep efficiency, sleep latency, time spent in sleep stages 1, 2, 3, and rapid-eye movement sleep. However, the number of apneic episodes, the respiratory disturbance index, and oxygen desaturation measures were significantly higher in the obese group. The study was published ahead of print by the *Journal of Burn Care & Research* on July 19.

## Maxillomandibular advancement surgery found effective

Maxillomandibular advancement surgery for the treatment of obstructive sleep apnea syndrome (OSAS) results in improved outcomes, finds a new study out of Canada. Researchers surveyed 116 patients who underwent the procedure, asking questions about their snoring, witnessed apneas, continuous positive airway pressure (CPAP) use, and overall satisfaction with the surgery. The Epworth Sleepiness Scale (ESS) was included, as well, to gauge sleepiness before and after the procedure.

Results on the ESS showed 40% of patients were very sleepy, 32% were sleepy, and 28% were not sleepy prior to the surgery. After the procedure, just one patient was very sleepy, 9% were sleepy, and 90% were not sleepy; and the mean ESS score for the very sleepy, sleepy, and not-sleepy groups decreased from 18.3 to 5.9, 12.9 to 4.4, and 7.3 to 4.5, respectively. Snoring was decreased by 83%, witnessed apneas by 94%, and CPAP use by 96%. Eighty-nine percent of the patients judged the surgery to have been worthwhile. Ninety-five percent said they would recommend the procedure to others with the condition.

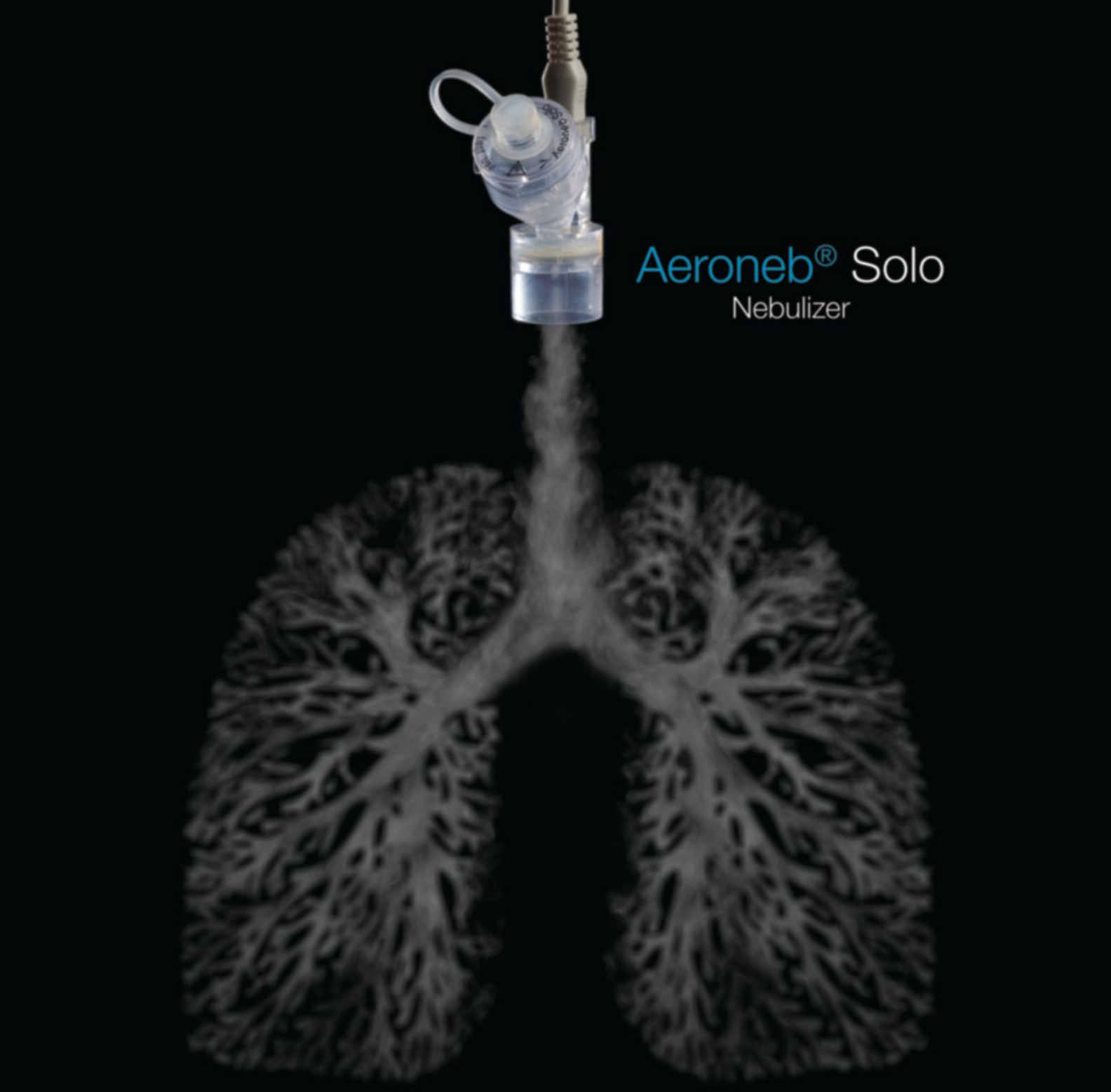
The investigators published their findings ahead of print in the *Journal of Oral and Maxillofacial Surgery* on July 12.

## Predicting sleepiness and sleep apnea severity with classification algorithms

Boston investigators who analyzed data from the Sleep Heart Health Study on polysomnography and clinical features find the clinical prediction of sleep apnea may be feasible with easily obtained demographic and electrocardiographic analysis, but the ESS is only minimally associated with clinical, electrocardiographic, or polysomnographic features.

In the analysis, the ESS and the apnea-hypopnea index were the targets of three classifiers: k-nearest neighbor, naive Bayes, and support vector machine algorithms. Classification was based on demographics, the polysomnogram, the electrocardiogram (spectrogram), and other features. Specific results showed:

- Naive Bayes was best for predicting abnormal Epworth class, although prediction was weak: polysomnogram features had 16.7% sensitivity and 88.8% specificity, spectrogram features had 5.3% sensitivity and 96.5% specificity.
- The support vector machine performed similarly to naive Bayes for predicting sleep apnea class: 59.0% sensitivity and 74.5% specificity using clinical features and 43.4% sensitivity and 83.5% specificity using spectrographic features; versus 57.5% sensitivity and 73.7% specificity, and 39.0% sensitivity and 82.7% specificity, respectively, for the naive Bayes classifier.

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- Mutual information analysis confirmed the minimal dependency of the ESS score on any feature, while the apnea-hypopnea index showed modest dependency on BMI, arousal index, oxygenation, and spectrogram features.
- Apnea classification was modestly accurate using either clinical or spectrogram features and showed lower sensitivity and higher specificity than common sleep apnea screening tools.

The research appeared ahead of print in the *Journal of Sleep Research* on July 14.

## Endoscopic procedures safe in patients at risk for sleep apnea

New research out of the University of Buffalo finds patients who are considered at high risk for sleep apnea can safely undergo endoscopic procedures with conscious sedation. The investigators embarked on the trial because OSA patients are known to have an increased risk of perioperative complications.

The study involved 904 patients who were having colonoscopies, upper endoscopies, or combined procedures. Among the group, 553 were considered at low risk for sleep apnea based on their scores on the Berlin Questionnaire, and 351 were considered at high risk. Minor complications were seen in 10.56% of the low-risk patients, compared to 10.63% of the high-risk patients. Major complications were noted in 3.25% and 1.9%, respectively.

The authors conclude, "For patients undergoing endoscopy procedures under conscious sedation, the presence of OSA does not clearly increase the risk of cardiopulmonary complications." The study was published ahead of print by *Sleep & Breathing* on June 27.

## Airway, nasal inflammation not affected by CPAP treatment

CPAP is considered the treatment of choice for OSAS, but despite correcting for oxygen desaturation, it does not appear to affect either the airway or nasal inflammation that is often elevated in these patients as well. That's the take-home message from Italian researchers who assessed airway inflammation in 13 non-smoking subjects with untreated OSAS and 11 non-smoking controls. Nasal inflammation was assessed in 12 of the OSAS patients, along with the controls.

Following the initial assessment, the OSAS patients were treated with CPAP. Assessments were then repeated one, 10, and 60 days later. Compared to the controls, OSAS patients had a higher percentage of neutrophils and a lower percentage of macrophages in induced sputum at baseline. CPAP treatment did not change that finding. The research appeared in the June issue of *Rhinology*.

## Exercise tolerance improves with CPAP treatment

Exertional dyspnea and exercise intolerance are common in obese patients with OSA. Can CPAP help?

Yes, report Canadian investigators publishing ahead of print in *Respiratory Medicine* on July 8. They studied 15 patients with an average BMI of 43 and apnea-hypopnea index of 49. All were without cardiopulmonary disease and all were treated with nocturnal CPAP. The patients underwent standard tests at baseline and then again after one and three months of treatment. The researchers found:

- Constant-load exercise time increased by 2.0 minutes at one month and 1.8 minutes at three months.
- At one and three months, isotime dyspnea decreased by 1.4 and 2 units, respectively; and leg fatigue decreased by 1.2 and 2 units.
- Baseline and Transitional Dyspnea Index questionnaire scores were 2.7 and 4.5 points, respectively, at one and three months.
- Peak oxygen consumption and static pulmonary function were unchanged.

The authors conclude, "Nocturnal CPAP improves exercise tolerance and dyspnea in obese patients with OSA."

## Resistant hypertension ups OSA risk in blacks

Previous studies have shown a link between OSA and hypertension. Now SUNY Downstate Medical Center researchers publishing ahead of print in the *International Journal of Hypertension* on June 8 find the link is strongest among patients with resistant hypertension (RH) — at least in blacks.

Their study was conducted among 200 black patients who were assessed for RH using the JNC 7 and European Society guidelines. OSA risk was determined via the Apnea Risk Evaluation System (ARES), with high risk defined as a total ARES score ≥6. Twenty-six percent of the patients met the criteria for RH, while 40% were at high risk for OSA. After taking confounding factors into account, the researchers found the RH patients were nearly 2.5 times more likely than their hypertensive counterparts to be at high risk for OSA. ■


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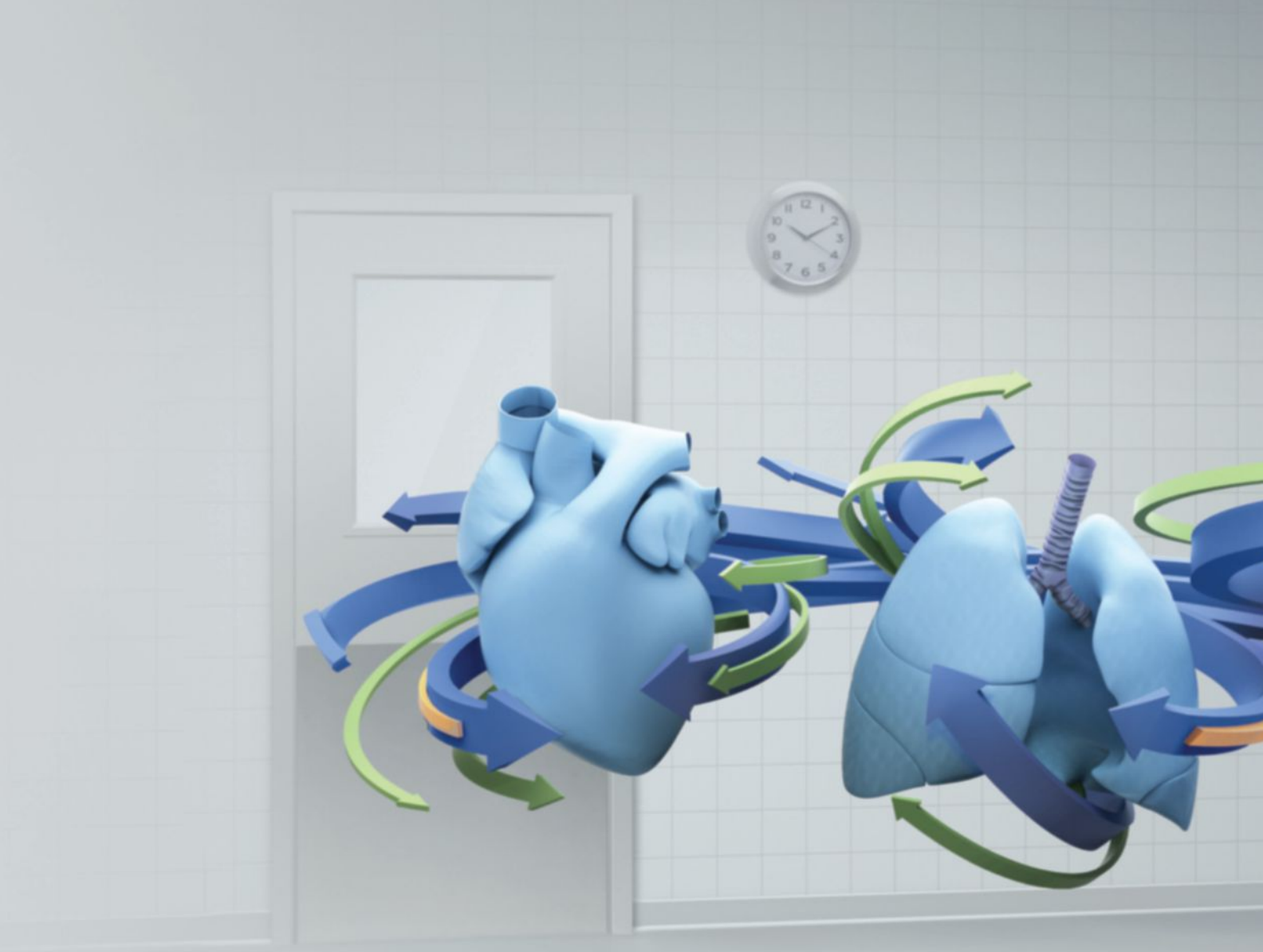

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# Amyotrophic Lateral Sclerosis in the Older Adult

by Donna D. Gardner, MSHP, RRT-NPS, FAARC

What do all of these people have in common?

- A 55-year-old man, married 20 years, four adult children, six grandchildren, a prostate cancer survivor and singer
- A 72-year-old man who celebrated his 55th wedding anniversary, retired dentist and university professor, who has two adult children and six grandchildren
- A 68-year-old man, married 50 years, one adult child, a pilot and engineer
- A 47-year-old man, married 25 years, has two children, a pediatric pulmonologist
- A 45-year-old male married 12 years, has a daughter, and is a professional musician
- A 32-year-old male triathlete
- A 47-year-old female, married 25 years, graduated from college with a bachelor's of science degree in business management, has three children, and is a professional hostage negotiator

With age comes wisdom… and sometimes amyotrophic lateral sclerosis (ALS), too. In the United States ALS is referred to as Lou Gehrig's disease after the New York Yankee baseball player who was diagnosed in 1939. Stephen Hawking, physicist, is probably the most well-known ALS patient today. The French refer to ALS as *maladie de Charcot* after the French physician Jean-Martin Charcot who first wrote about ALS in 1869. In England it is known as *motor neurone disease*. Progressive motor neuron disease (MND) affects both upper motor and lower motor neurons. MND is a generic term used more in Europe, while ALS is used in the United States. MND embraces ALS, progressive muscular atrophy, progressive bulbar palsy, and primary lateral sclerosis.

about the author…

Donna D. Gardner, MSHP, RRT-NPS, FAARC, is interim chair of the department of respiratory care at The University of Texas Health Science Center – San Antonio.

## Incidence

There are 20,000–30,000 people in the United States who have ALS, and about 5,000 more are diagnosed each year.[1] Ten percent of the cases are familial, and 90% of cases are idiopathic.[1,2] Many of those cases that are familial result from a mutation of the enzyme superoxide dismutase 1 (SOD1).[1] ALS is not particular about who or at what age it strikes. The disease is 1.5 times more common in men than women.[2] It affects all races and ethnic backgrounds, mean and medium ages at disease onset are 65, and in clinical trials the mean age of onset is 55. The highest incidence is in those 60–69 years.[3] Most patients live about three to five years or more after diagnosis, and a small percent will live more than 10 years.[2]

Although increasing age is an independent risk factor for ALS, early symptoms associated with ALS are vague and frequently overlooked as part of aging. There is often a misconception that exercise intolerance is related to deconditioning. A softer, weaker voice and clumsiness may be considered "normal age-related changes." Early symptoms of ALS include tripping, dropping things, slurred or "thick" speech, muscle cramping, weakened muscles, or twitching. As ALS progresses, the muscles of the trunk of the body are affected, and the respiratory muscles begin to atrophy over months and years. ALS usually does not affect the mind or the senses, and patients remain mentally sharp and in full possession of their senses of sight, hearing, taste, smell, and touch. However, 15% of people with ALS develop frontotemporal dementia (FTD), which results in progressive

changes in personality and behavior yet preserves memory and appears to be more common in familial ALS.[4,5] These patients lose the ability to follow directions for diagnostic tests, follow recommended therapy (e.g., NPPV), or make informed decisions about their medical care. The ALS Cognitive Behavioral Screen (ALS-CBS) is used with ALS patients suspected of cognitive changes.[6]

## Diagnosis

Diagnosing ALS is difficult in the early stages when the symptoms mimic other diseases and symptoms, and progression is different in each patient. ALS is not the disease you test for — it is the one in which everything else has been ruled out and all that is left is ALS. Electromyography (EMG) detects electrical activity in muscles, which supports the diagnosis of ALS. A magnetic resonance imaging (MRI) is ordered to take detailed images of the spinal cord and brain. MRIs are usually normal in patients with ALS but indicate other problems causing the symptoms. Blood and urine tests are ordered to eliminate any other possibility that would lead to these symptoms; and if all other tests are inconclusive, the result is ALS. The benefit of a timely diagnosis includes appropriate treatment and prevention of mismanagement of the patient.

## Bulbar vs. spinal ALS

There are two types of ALS; bulbar and spinal onset. The term bulbar refers to the motor neurons associated with the region of the brain stem that controls the muscles used for chewing, swallowing, and speaking. The most common bulbar symptoms in ALS are dysarthria and dysphagia. Patients with dysarthria or dysphagia, emotional lability (laughing and crying at inopportune times), or breathing concerns would be suspected of having bulbar ALS.[7] Spinal onset would include the symptoms of foot drop that cause tripping, dropping things, writing difficulties, increased effort tying shoes or buttoning shirts, and twitching of the muscles in the arms or legs (see Table 1). Classic ALS evolves toward a combination of upper and lower motor neuron findings.

## Disease management multidisciplinary teams

The largest part of living with ALS is managing the symptoms, which impact quality of life. The rate of muscle degeneration is unpredictable and varies from person to person. Recent studies have shown patients and their caregivers who are cared for at ALS centers with multidisciplinary teams live longer and have a better quality of life[8,9] (see Table 2). The advantage of the team approach is the patient has one-stop shopping for therapies, advocacy, and education. Patients and caregivers attend the multidisciplinary clinic once every three months. Prior to attending the clinic, patients complete the revised ALS Functional Rating Scale (ALSFRS-R). This scale determines quality of life, disease progression, and assesses the respiratory component of the disease. This includes assessing dyspnea, orthopnea, secretion issues, and noninvasive positive pressure ventilation (NIPPV) compliance.[10]

The respiratory function is measured during each clinic visit to determine the patient's vital capacity (VC), peak flow (PF), and maximum inspiratory pressure (MIP) or sniff nasal inspiratory pressure (SNIP) with the patient sitting or standing and supine when indicated.[11] Patients with ALS are short of breath or unable to catch their breath when lying flat or supine. These three measurements are crucial in determining when to initiate NIPPV and/or use of airway clearance devices such as the high-frequency chest wall oscillation (HFCWO) device or the mechanical insufflator-exsufflator (MIE). Criteria to initiate NIPPV are a vital capacity less than 50%, a MIP less than -60 cm $H_2O$, SNIP less than 40 cm $H_2O$, or nocturnal saturation less than 88% for five continuous minutes.[11] Sleep studies are not recommended in ALS patients, yet some insurances require them.

## Treatment

There is no cure for ALS, hence the goal is to enable the patient to maintain an active, independent life for as long as possible. The one approved treatment for ALS is riluzole. It reduces the release of glutamate, which decreases the damage to the motor neurons.[12] The clinical

### Table 1. Onset of ALS

| Spinal onset | Bulbar onset |
|---|---|
| Muscle weakness and atrophy | Dysarthria (difficulty speaking or diminished articulation ) |
| Fasciculations (involuntary contractions or muscle twitching) in the legs, arms, or upper chest | Dysphagia (difficulty swallowing) |
| Muscle fatigue | Emotional lability (decreased ability to control emotions) |
| Weakened reflexes | Shortness of breath |
| Flaccid muscle tone | |
| Foot drop | |

NOTE: There is no precise order in which symptoms appear.

## Table 2. Multidisciplinary Team Members and Responsibilities

| | |
|---|---|
| Neurologist | Team leader of the patient's care |
| Nurse | Coordinates the care and home orders |
| Respiratory therapist | See article |
| Physical therapist | Evaluates and assesses the patients' mobility and caregiver's ability to move the patient |
| Occupational therapist | Evaluates and assesses the patient's and caregivers' ability to maintain or to perform activities of daily living (driving a car, buttoning shirt, brushing teeth, etc.) |
| Speech pathologist | Evaluates and assesses the patient's ability to swallow and prevent aspiration via swallow studies, and obtains communication device technology for the patient (communication board, voice banking, aud-com and computer technology) |
| Social worker | Coordinates the services necessary to care for the patient at home, nursing home, long-term acute care facility, etc.; also ensures all advanced directives are in place for the patient and family |
| Dietitian/nutritionist | Evaluates and assesses the patient's nutritional status to include supplemental food/shakes, is instrumental in determining need of a gastrostomy tube and the caregivers' education for the tube |
| Orthotist | Evaluates, assesses, and makes orthotics for the patient to use for mobility and to maintain integrity of their feet, legs, and hands |
| Psychologist/psychiatrist | Evaluates and assesses the patient's and caregivers' mental status in dealing with the disease |
| Pastor | Evaluates the spiritual needs of the patient and caregivers |
| Wheelchair specialist | Ensures the patient has the motorized wheelchair that fits the patient's body type and size and that the patient and caregivers can operate the device appropriately |
| ALS volunteers | Ensure a support system for the patient and caregivers, hold monthly support meetings for patients and caregivers, provide communication about research, device technology, etc. |

trials demonstrate riluzole prolongs survival by several months, especially in those with dysphagia. It does not reverse damage that has already occurred. Apart from the potential for hepatotoxicity, it is well tolerated.[13] Sialorrhea is treated with anticholinergic agents and botulinum toxin type A injections in the salivary glands.

Patients with ALS experience early and advanced symptoms of respiratory insufficiency. These may include dyspnea when supine, on exertion, or at rest. They may fatigue when talking or eating. Many patients experience excessive daytime sleepiness, interrupted sleep, morning headaches, and vivid colorful dreams/nightmares, which are symptoms associated with nocturnal hypoventilation. Patients are unable to clear secretions and have an ineffective cough. NIPPV should be initiated early, which may increase patient compliance and slow

the decline of the VC.[12] It is extremely important to find an interface with the NIPPV that fits the patient. This interface may change over time because as the disease progresses the shape of the face changes. It is important to coach and encourage the patient to use NIPPV during the day as many are claustrophobic or unable to use their arms and hands to remove the mask in an emergency. The American Academy of Neurology in their "Practice Parameter Update" recommend initiating the MIE to assist with airway clearance of secretions.[12] There are some studies that demonstrate HFCWO is well tolerated and reduces symptoms experienced by the ALS patient, such as breathlessness and fatigue.[14]

## Conclusion

Increasing age is an independent risk factor for ALS, and mortality in ALS is associated with increasing age. ALS is fatal and involves respiratory weakness that leads to respiratory failure. Pulmonary function parameters are used to determine respiratory insufficiency and initiating NIPPV and more aggressive airway secretion removal devices. ■

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### WEB RESOURCES

ALS Association: www.alsa.org

American Association for Respiratory Care, AARC Clinical Practice Guideline, Directed Cough: www.rcjournal.com/cpgs/dccpg.html

American Association for Respiratory Care, AARC Clinical Practice Guideline, Training the Health-Care Professional for the Role of Patient and Caregiver Educator: www.rcjournal.com/cpgs/thcpcpg.html

American College of Chest Physicians, Nonpharmacologic Airway Clearance Therapies: ACCP Evidence-Based Clinical Practice Guidelines: http://chestjournal.chestpubs.org/content/129/1_suppl/250S.full.pdf

International Alliance of ALS/MND Associations, Resources Site: www.mndallianceresources.org/contents/full_list_of_documents_held.asp

The View From Here

# The Cracker Jack Guy at the Popularity Contest: Why We Should Promote Our Profession

by D. Robert Handy, BSRT, CRT, EMT-I

When I was a young man about 17 years old, I had the opportunity to work at a baseball stadium for a local minor league team. I held several positions over my three years there, but the one I worked the longest and was best known for was being the "Cracker Jack Guy." I was a concession hawker and carried this huge Cracker Jack bag full of food to sell to patrons and fans. The job was not bad, I got to see a lot of neat things, and I got paid (however meagerly) to do it. However, I was known in that small world as nothing more than the "Cracker Jack Guy."

I did other things that weren't apparent to the general populace. I had a good work ethic, I was skilled at what I did, and I was well liked by my co-workers and my boss. Nevertheless, I would see people around town or even before or after the games, and people said "Aren't you the 'Cracker Jack Guy?'" They knew the baseball players by name, had their stats memorized, and idolized some of them. They knew the girls who worked the front gate taking tickets, the club owners, and were friends with Kenny, our chief beer guy. Yet in this popularity contest, I was just the "Cracker Jack Guy."

## Fast-forward to the present

Today I am a respiratory therapist, young in the profession and eager to prove myself. I have been an EMT for nearly a decade and bring a good skill set with me. I still have a good work ethic and, as far as I know, my co-workers and boss like me. In my day-to-day job, I work hard and do things that aren't necessarily apparent to the general populace, and even sometimes my patients. And yet, I still will see recurring patients or other people who say "Hey, aren't you that guy?" It seems as though I have moved forward in life to hold the same position in the popularity contest that is modern health care.

Respiratory therapists are an indispensable and integral part of today's health care team. We work closely with physicians, nurses, and other providers to assess, treat, and care for a myriad of patients. Many other health care professionals look to us for advice, guidance and suggestions in patient care and condition, as well as other aspects of medical knowledge. We are considered experts, having a finite knowledge of the respiratory system and how it relates and integrates with the rest of the human body. We are the ones who are called upon when others are not sure what to do or when a patient's life may be in danger.

Yet despite all of this, we are still just "that guy (or gal)." In this contest, it seems as though the physicians and nurses are the "Prom King and Queen" while we are the shy kid by the punch bowl.

Respiratory therapists are not working to win awards or some kind of glamour contest, but it is disheartening to meet people who ask, "What do you do for a living?," only to have them say, "What's that?" when you tell them you're a respiratory therapist. Within our own world, RTs are respected and revered by many and known by all. However, once you start talking to people outside of health care, you get some mixed responses. Some have heard of RTs but really aren't sure what they are or do. Others are well informed, while some have no idea what your job is or entails. For this reason, we need to promote our profession.

Scores of other health care professions are featured in pop culture. Physicians and nurses are the focus of many

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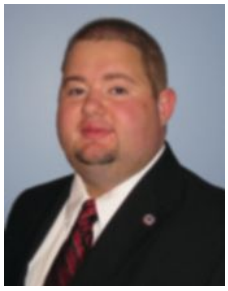

D. Robert Handy, BSRT, CRT, EMT-I, is a respiratory therapist in the Sleep-Wake Center at the University of Utah and a staff therapist at Davis Hospital and Medical Center in Layton, UT.

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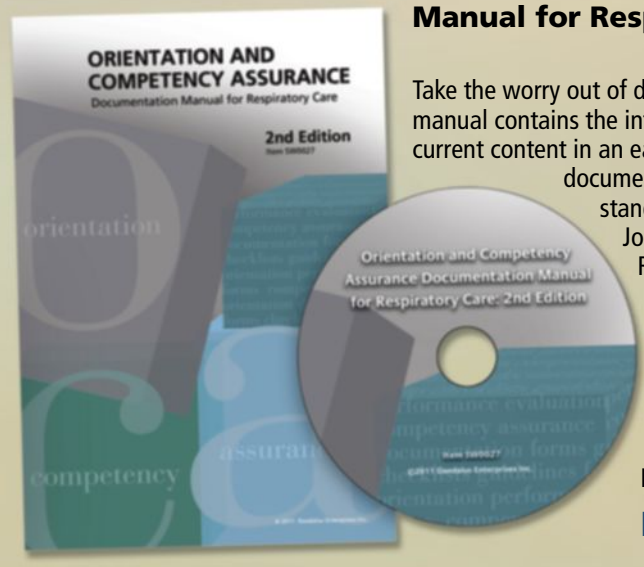


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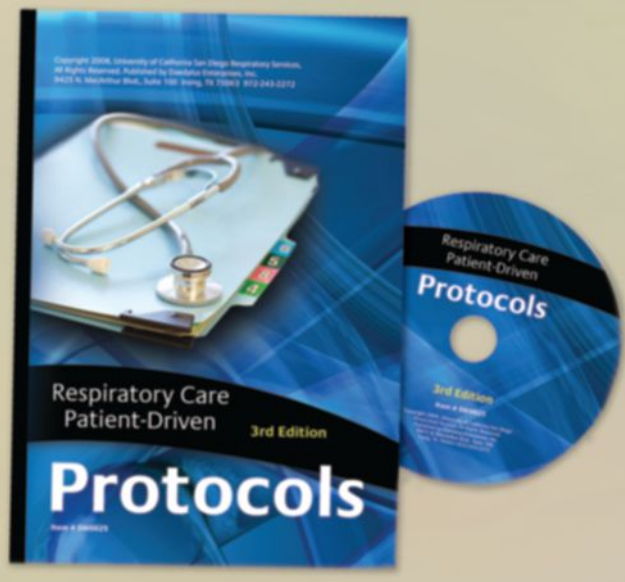


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# 2011 Jimmy A. Young Memorial Lecture on Ethics in Testing and Candidate Preparation

During the 2011 AARC Summer Meetings last July, the National Board for Respiratory Care sponsored the 34th Annual Jimmy A. Young Memorial Lecture. Since 1978, the NBRC has sponsored this lecture series to honor Jimmy A. Young, MS, RRT, who began his career in respiratory therapy in 1960 by working as chief inhalation therapist at the Peter Bent Brigham Hospital in Boston, MA. In 1965, he earned the Registered Respiratory Therapist credential and Registry #263. He served his profession in many roles, including director of the respiratory therapy program at Northeastern University in Boston.

In 1970, Young became director of the respiratory therapy department at Massachusetts General Hospital. He was elected the 22nd president of the American Association for Respiratory Care in 1973. He was serving as an NBRC trustee and member-at-large of the executive committee when he unexpectedly passed away in 1975. The NBRC honors Jimmy A. Young's memory and his many contributions to the respiratory care profession through this annual program.

This year's Jimmy A. Young Memorial Lecture was titled, "Ethics in Testing and Candidate Preparation." NBRC President Gregg L. Ruppel, MEd, RRT, FAARC, introduced the program and the two co-presenters, Robert Shaw Jr., PhD, RRT, FAARC, and Kerry E. George, MEd, RRT, FAARC.

Dr. Shaw is an assistant executive director for the NBRC and serves as the psychometric program director for all NBRC examination programs. Kerry George is the program director for Des Moines Area Community College, and he currently serves as treasurer for the NBRC Board of Trustees, as well as chairman of the Therapist Multiple-Choice Examination Committee and vice-chair of the Judicial and Ethics Committee.

## Defining ethics

Dr. Shaw began the presentation by defining the concept of ethics. He explained that a resolution of conflicts between principles would be most desirable; but when conflict is present, the way forward requires careful thought. He also asked the audience, "Where is the line crossed by no longer serving one of the principles?" Dr. Shaw discussed four principles that can conflict for a health care team: non-maleficence, autonomy, beneficence, and justice. Non-maleficence includes avoiding needless harm. Autonomy is the patient's right to choose what may be done to his/her body. Beneficence is acting to the benefit of the patient. Justice includes ensuring that goods and services are fairly distributed.

Dr. Shaw explained that for non-maleficence, a critical question may include asking if the potential benefit outweighs the risk. A critical question for beneficence could include asking if the activity of the health care provider is a benefit to the patient. A critical question for autonomy may include asking if the patient or surrogate has been properly informed of the potential treatments and the risks of those treatments. A critical question for justice could include asking if peers receive equal treatment. He also explained that the answers to these questions could conflict with one or all of the other principles.

Dr. Shaw went on to explain how the implementation of ethics assessment was achieved with two NBRC Specialty Examinations, the Neonatal-Pediatric Specialty Examination and the upcoming Adult Critical Care Specialty Examination.

Beginning with the release of new test specifications on Aug. 1, 2011, the Neonatal/Pediatric Specialty Examination detailed content outline contains a component for examination questions regarding ethics. The new Adult Critical Care Specialty Examination (that is projected to launch mid-2012) will also contain the ethics assessment instrument. Dr. Shaw explained that there will not be any examination items that test only ethical situations; they will always be tied to a competency, level of cognition, and often knowledge of a disease or condition. Examples of examination item topics could include evaluating a patient for brain death or caring for a patient with a "do not resuscitate" order.

### Relating ethics to candidates

Kerry George continued the Jimmy A. Young Memorial Lecture by speaking about ethics in relation to examination candidates. He discussed conflicts that faculty members can encounter, such as the need to achieve credentialing success to maintain accreditation with CoARC, balanced with the necessity to assure public safety by only graduating students who are minimally competent. Attempting to acquire examination content or sharing acquired content with students are examples of faculty crossing the line.

George also outlined potential conflicts for students, such as the need to gain employment after graduation, balanced with assisting friends or fellow students so they master the content as well. Using external aids while testing and sharing examination content with other friends, faculty, or test preparation companies are also examples of crossing the line of ethics.

He explained that the test centers employ many techniques to discourage and/or prevent unethical testing behavior. Each candidate is required to show two forms of identification, sign the roster, empty any pockets, store personal belongings, and have his/her photo taken to be placed on the score report. Each test center supervisor also inspects for unauthorized devices and monitors candidates for behavior associated with cheating.

In addition, George emphasized that the NBRC test centers are equipped with video monitoring capabilities. He showed several examples of how the video surveillance can catch candidates who cheat during their examination session. He also showed videos relating several examples of unauthorized behavior during a testing session.

An explanation of the NBRC's Judicial and Ethics Committee was a key area of discussion in George's presentation. He noted that this committee is made up of nine members of the NBRC Board of Trustees and is charged with the responsibility of upholding the policies and procedures of the Board. The committee meets four times per year and can take action against candidates or practitioners obtaining, attempting to obtain, or assisting an attempt to obtain credentials by fraud, deception, or artifice. The committee can also take action if someone uses an NBRC credential they did not earn or if they possess or provide unauthorized NBRC examination content or materials.

In addition, the Judicial and Ethics Committee can take action against individuals whose state license to practice has been revoked, suspended, denied, or voluntarily surrendered. Potential NBRC disciplinary actions include admonishment, formal censure, removal from the examination process, deletion from the active directory, suspension of credentials, and/or deletion from active status for an indefinite or specific amount of time. The committee can also require re-examination to document competence.

George concluded the 2011 Jimmy A. Young Memorial Lecture by explaining that each participant in the credentialing process can encounter ethical conflicts and should evaluate which ones cross the line. He summarized that ethics related to the delivery of health care will be integrated into two specialty examinations supported by the NBRC and that the NBRC has systems in place to monitor candidates' behavior while taking examinations. He reiterated that the Judicial and Ethics Committee has procedures in place to process cases that are brought to the attention of the NBRC.

### Your questions invited

The NBRC Board of Trustees and its committees are interested in your questions, comments, and concerns. You may contact the NBRC at 18000 W. 105th St., Olathe, KS 66061-7543, by email at nbrc-info@nbrc.org, by phone at (913) 895-4900, or visit the NBRC website. ■

# Political Action Committees: PACs, the AARC, and AARCPAC: Questions and Realities, at Least for the AARC

by Cheryl West, MHA

There are many ways to advocate the members of Congress about legislation. These can include individuals meeting face to face with their congressional members or sending them letters, emails, phone calls, or through organized campaigns such as the AARC has done through its Virtual Lobby Day/Week Project. One other tool in the advocacy toolbox is establishing and registering a Political Action Committee (PAC) with the Federal Election Commission (FEC). A PAC provides a way to make contributions to a congressional member's election campaign. It comes as no surprise that PACs are pretty much viewed by the public in a very negative way. This column is intended to shed some light on PACs in general and the AARC's PAC in particular.

**Q — Aren't PACs just another way of saying you're buying votes? If so, why should the AARC even have a PAC?**

There are literally tens of thousands of registered PACs in the United States all making contributions to either sitting members of Congress or those candidates who might be running for a congressional seat. While one cannot make a blanket statement that PACs have *never* influenced a vote, it is also very safe to say the vast majority of PACs and the members of Congress or candidates who receive PAC contributions never would consider a PAC contribution a down payment on a vote. The FEC, which tightly oversees PACs, sets the rules including limiting the amount of contributions any one PAC may give to each candidate or member of Congress. And there are too many PACs giving a limited number of dollars to what comes down to a limited number of members to make any one PAC take precedence over the others.

**Q — If that's the case, what is the value of an organization having a PAC? What does it get you?**

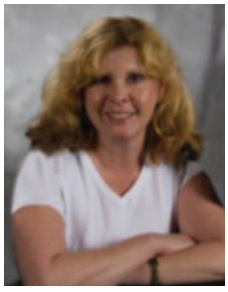
If pressed for a one-word answer, it would be "access." A longer answer would be: Hopefully it will give you access to the member (or key staff members) who will give you time to put your issue and rationale in front of them and discuss your issue.

But a short answer doesn't give the full picture. So an even longer two-part answer and the key to why PACs exist in the first place is this:

**1. Members time or lack thereof:** Voters and groups of voters who band together over a common issue (that would be termed a "special interest group") are much more politically aware than they were just 10 years ago. These special interest groups need to put their issues before a member of Congress in hopes of finding support. Make no mistake, the AARC and pulmonary patients are just as much of a special interest group as any other cohort of individuals. And there are more and more special interest groups. Here's a made-up example that illustrates what has evolved over the last two decades.

Twenty years ago there might have been one organization that lobbied Congress on behalf of those who were blind or sight impaired. Advocates from this organization would meet with members and discuss all the issues that touched on those who suffered from eye impairments. Fast forward 10 years: while this umbrella organization still exists, now so does an organization just focused on people suffering from glaucoma, another association is dedicated only for those who have macular degeneration, and yet another might be solely for cataract sufferers. And all of them want time with members of Congress to discuss specific issues that are important to their specific patients. Having the time to meet with everyone and every interest is a physical impossibility.

about the author...



Cheryl West, MHA, serves as director of government affairs for the AARC.

Added to that are the complexities of our nation and the world. Members of Congress not only must be aware of but also need to understand and be ready to vote (having met with these special interest groups) on critical issues ranging from agriculture, to defense, to telecommunications, to environment, etc. It's a daunting task.

**2. Costs of election campaigns:** As a rule of thumb, most congressional members want to stay in Congress. And only in rare instances do members run unopposed in their state or districts. It is a fact that the most effective way to reach the most voters is through television ads or, as they say, "media buys." Regardless of what you think about these political ads, this is a major avenue to persuade voters and get the message the candidate wants to convey "out there." And "media buys" cost an enormous amount of money — the type of money that can be raised only through fundraising and campaign events and many PAC contributions.

Most members of Congress are not wealthy individuals; many started out as local lawyers or insurance agents or small business owners. They simply do not have the personal funds to cover the costs of sustaining any type of political campaign; and to do so requires them to raise money from either individual contributions — also limited under FEC rules — or PAC contributions.

**Q — What about AARCPAC?**

Like all PACs that contribute to federal candidates, the funds in the AARCPAC account are there because individual RTs make a contribution to it. And there are very strict rules on who may contribute to a PAC and how much each individual may at any time or election cycle contribute to a PAC.

Nearly 20 years ago, the AARC formed a political action committee we called AARCPAC. As required by law, we registered the AARCPAC entity with the FEC and continue to follow federal guidelines in terms of fundraising, disbursement of those funds, and filing paperwork with the FEC.

AARCPAC's only fundraiser is our annual jewelry raffle we hold for two and a half days during the AARC's annual convention. What we can raise at the Raffle Booth from selling tickets bought by individual respiratory therapists sustains our PAC for the rest of the year.

There are big PACs representing many individuals and with large coffers that permit these interests to attend many, many fundraisers. AARCPAC is a very small PAC. We attend a limited number of fundraisers every year, and then only those put on by members who are on committees that deal directly with Medicare or other federal health programs such as Veterans Affairs. In other words, were AARCPAC to be asked to attend a fundraiser for a member of Congress who is a key member of the House Interior Committee, for example, we would decline.

**Q — If AARCPAC is so small and there are so many other big PACs, why do we even bother?**

Here's a perfect example why AARC has a PAC. Recently, AARC's Director of Legislative Affairs, Miriam O'Day, attended a breakfast fundraiser for a key member of a House Committee that oversees the Medicare program, and thus this member is in a position to help us advance our own H.R. 941 legislation, the Medicare Respiratory Therapy Initiative. Miriam was one of only eight persons who happened to attend this particular fundraiser; and during this event, she sat down and spoke one on one about our legislation to the member's health legislative assistant, the member's chief of staff, and ended up with a long discussion with the member himself. And that is what is meant by access. As a result of explaining the importance of our bill and the positive impact it will have for pulmonary patients, the congressman agreed to initiate a direct dialog with the powerful Congressional Budget Office (CBO) regarding a cost analysis of our bill. This CBO review is a key step to advancing our legislation through Congress.

**Q — Given all of this, aren't you really saying that fundraisers supported by PACs are the only "real" way to gain access or advocate an issue to a member of Congress?**

Not at all. PAC support is one way — and an important way — to get the ear of a member of Congress. But as noted at the beginning of this column, PACs are but one tool in the advocacy tool box. Members of Congress listen to their voters. After all, you are the ones who can keep them in office or not. For example, each state respiratory therapy society appoints RT volunteers to be its Political Advocacy Contact Team (PACT) representatives who will be the collective voice of the respiratory therapy legislative agenda. Your PACT representatives go to Washington, DC, every year for a Hill Advocacy Day, meeting with their congressional delegations to advance the RT Hill agenda. These face-to-face meetings by RTs representing the interests of RTs back home have a great impact on members of Congress.

Of course, individually voicing your views (through emails, phone calls, faxes, or attending town hall meetings or other public events back home) on any issue, whether it is asking for support for H.R. 941 or voicing your opinion on any other policy that may concern you, is most certainly your right.

There are many ways for individuals and organizations such as the AARC to access members of Congress and deliver their message. An organization that has a PAC just has one more avenue to deliver that message to those in Congress who can make a difference. ■


# Health Care Jobs Outlook

by Sam P. Giordano, MBA, RRT, FAARC

Regardless of where we live in the world, we hear the same lament: Far too many people are unemployed, the economy is unable to produce jobs at an adequate rate, and there's not enough government money to go around to meet retirement and health care needs of citizens worldwide.

Weak economies used to be happy days for those of us looking to recruit individuals into health professions and occupations. Indeed, there are projections from the U.S. Bureau of Labor Statistics that health-related employment is expected to rise dramatically over the next few years. The reasons usually given are that there's a huge aging demographic that will require health care services of all kinds and that we also expect to see at least 30 million persons who will have health insurance beginning in 2014 under the "Patient Protection and Affordable Care Act" here in the United States.

## Connecting the rest of the dots

However, it's important for us to connect ALL the dots. Those dots being omitted from the foregoing projection is the impact of deep cuts in health care provider reimbursement.

The first round was offered as part of the Affordable Care Act since it contains approximately $500 billion in cuts to Medicare Advantage providers. You may recall that these programs take a more comprehensive approach in providing services to Medicare beneficiaries. Approximately 20–25% of those beneficiaries prefer Medicare Advantage since it takes more of a "soup to nuts" approach and emphasizes *keeping* you healthy as much as *getting* you healthy.

But I have a question: If reimbursement is cut, what's going to happen to those programs? Some may cease to exist as has been the case with previous cuts. Also, those that stay in the business will squeeze payments to health care providers even more in order to retain a viable business model that will ensure continued operation.

Add to this that health care provider organizations (including doctors' offices, hospitals, nursing homes, and home health agencies) can expect to see their respective reimbursement under Medicaid and Medicare decreased. According to an analyst from Moody's, Medicaid reimbursement in 37 states will be reduced, beginning with next year's budgets. While the demand side of the health care equation will no doubt increase, the supply side will be controlled by the amount of money received by the actual providers of care.

Since there's a growing gap between the cost of meeting our patients' needs and what will be paid, it follows that cost reductions on the provider side will have to take place. This means the system is asking providers to meet the increased demand for health care services but with fewer people at less cost.

Health care services continue to rise and have done so for decades. If we don't find additional efficiencies in the way we deliver care, one of two things (or perhaps even a hybrid of the two) will occur. There will be less access to health care services because there will be fewer providers, which will be a result of the provider employers having to work with a lower reimbursement/revenue. There will also be a continual ratcheting down of payments in order for those paying health care costs (which consists of private individuals, non-government employers, and Medicare and Medicaid) to be able to afford the coverage.

Simply put, from a strictly business standpoint, it is impossible to maintain a viable business if you sell your

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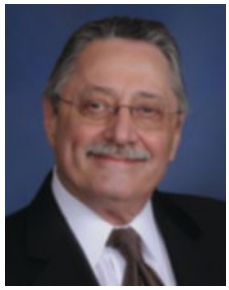
about the author...



Sam P. Giordano, MBA, RRT, FAARC, serves as AARC executive director. He can be reached at (972) 243-2272 or giordano@aarc.org.

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# COPD In-Patient Care: Time for a New Paradigm

by Gary L. Brown, BA, RRT, and Patrick J. Dunne, MEd, RRT, FAARC

Elements of the "Patient Protection and Affordable Care Act" of 2010 are slowly but surely transforming the delivery of health care services in the United States. One of the more visible challenges already facing acute care hospitals is the imperative to improve what is now being called the "in-patient experience of care." According to a recent white paper published by the prestigious Institute for Healthcare Improvement, one of the primary drivers of improving the experience of care is the consistent application of collaborative, evidence-based care.[1] One patient population where respiratory therapists (RTs) could greatly improve the experience of care would be those admitted for a COPD exacerbation.

There is ample evidence suggesting that COPD care is presently less than optimal. In fact, COPD is now the fourth leading cause of 30-day readmissions among Medicare beneficiaries.[2] Not only is the high COPD readmission rate a concern, so too is the cost of providing inpatient care. For example, in 2008, aggregate costs for hospital care for COPD exceeded $11.3 billion, with the mean length of stay (LOS) ranging from 4.5 days (simple admission) to 8.8 days (complex admission).[3] Not surprisingly, the cost of care also varied. In 2008, the mean cost of care for complex admissions ($20,757) was three times higher than the mean cost for simple admissions ($7,987).[3] In many instances, payments made to hospitals by Medicare for COPD care are insufficient to cover the actual cost of care.

One of the authors previously described in *AARC Times* how hospital RTs could reduce 30-day COPD readmissions by implementing a transition of care protocol.[4] Coincidently, the other author oversaw the development and implementation of a comprehensive inpatient COPD care process at a major medical center, one component of which is transition of care. We report here on the design and impact of that RT-directed novel program.

about the authors...

Gary L. Brown, BA, RRT, is respiratory care director at Sanford Medical Center in Fargo, ND.

Patrick J. Dunne, MEd, RRT, FAARC, is president of HealthCare Productions in Fullerton, CA.

## Evidence-based inpatient COPD care

In 2001, McCrory and colleagues summarized their evaluation and analysis of published data on inpatient care provided to patients with a COPD exacerbation.[5] Their work ultimately led to a collaborative statement on evidence-based inpatient care for COPD exacerbations, published jointly by the American College of Physicians and the American College of Chest Physicians.[6]

Table 1 summarizes care for which there is ample evidence of clinical efficacy, thus supporting widespread application. Also listed is care for which evidence of efficacy or effectiveness is lacking. Given the disparity between the actual cost of care and reimbursement received, the routine use of care/treatment for which efficacy evidence is lacking should now be questioned.

**Table 1. Listings of Interventions/Therapies for COPD Inpatient Exacerbation Care for Which Ample Evidence of Efficacy Exists or Is Lacking**

| Evidence of Efficacy | Efficacy Evidence Lacking |
|---|---|
| Chest radiography | Sputum analysis |
| Oxygen therapy | Acute spirometry |
| Bronchodilator therapy | Chest physiotherapy |
| Systemic steroids | Mucolytic agents |
| Antibiotics | Methylxanthine bronchodilators |
| Ventilatory support (as needed) | Leukotriene modifiers, mast cell stabilizers |

(Adapted from references 5 and 6)

## Prevalence of evidence-based inpatient COPD care

In early 2008, an internal audit of 244 patients with prior hospitalizations for COPD exacerbations was conducted at our hospital to determine the degree to which evidence-based care was routinely prescribed, as well as the incidence of care prescribed for which efficacy evidence is lacking. We then compared our findings to a 2006 follow-up study by Lindenauer and colleagues, in which they attempted to:

- evaluate the quality of COPD care by measuring adherence to current guideline recommendations, and to
- determine the prevalence of evidence-based inpatient care.[7]

The Lindenauer team conducted a retrospective cohort study of 69,820 COPD patients from a data base of 360 hospitals nationwide. They described efficacious care as "recommended care" and care lacking efficacy data as "non-recommended care." Further, "ideal care" was described as having all of the elements of recommended care and none of the elements of non-recommended care.[7]

In all respects, our findings suggested that numerous opportunities existed to improve COPD outcomes at our hospital and possibly lessen the adverse financial impact of such patients, specifically the negative Medicare margins we were experiencing for three of the four COPD MS-DRGs: 190, 191, and 192.

Our initial step was to convene a COPD Interdisciplinary Team to gain the support and involvement of key institutional stakeholders (e.g., respiratory care, physicians, nursing, pharmacy, social services, home health, quality improvement, and finance). What eventually emerged was a new Inpatient COPD Care Program that was launched in late 2008. Key components of the new program included:

1. A new standardized COPD admitting order set
2. A new standardized RT-driven COPD medication protocol
3. Deployment of new respiratory therapy clinical COPD specialists to oversee elements 1 and 2 above, and to: plan/coordinate care during the hospital stay, provide patient education near the time of discharge, assist with arrangements for home care, ensure referral to a pulmonary rehabilitation program, and communicate with the primary care provider regarding follow-up appointments in the ambulatory setting
4. Outcomes monitoring, specifically the prevalence of evidence-based care and ideal care, LOS, 30-day COPD readmission rate, and cost of care/reimbursement and margin data.

## Two years later

Data collection two years following implementation of the new COPD program allowed us the opportunity to compare our results to the metrics we initially established before the program was designed and launched. Table 2 shows the increase in the application of specific elements of recommended care in the two years following implementation of the program.

### Table 2. Comparison of Recommended Care from Baseline Data (2008) with Data 1 and 2 Years (2009–2010) Following Implementation of the Inpatient COPD Care Program

| Recommended Care | 2008 | 2009 | 2010 | National Mean[7] |
|---|---|---|---|---|
| n | 244 | 59 | 37 | |
| Chest radiography | 88% | 95% | 100% | 96% |
| Oxygen therapy | 89% | 85% | 100% | 95% |
| Bronchodilator therapy | 93% | 100%* | 100% | 98% |
| Systemic steroids | 85% | 90% | 95% | 86% |
| Antibiotics | 77% | 88% | 89% | 86% |

*Use of long-acting bronchodilators increased from 26% to 59%.

Table 3 shows the composite measure of recommended care for both years and of non-recommended and ideal care for year one. We elected to no longer track non-recommended and ideal care after the first year.

### Table 3. Comparison of Composite Measures from Baseline Data (2008) with Data 1 and 2 Years (2009–2010) Following Implementation of the Inpatient COPD Care Program

| Composite Measure | 2008 | 2009 | 2010 | National Mean[7] |
|---|---|---|---|---|
| n | 244 | 59 | 37 | |
| Recommended care | 57% | 71% | 86% | 68% |
| Non-recommended care | 36% | 34% | N/A | 44% |
| Ideal care | 34% | 49% | N/A | 33% |

NOTE: Ideal care indicates all elements of recommended care with no elements of non-recommended care.

### Financial margins and length of stay

Since 2007, our hospital has been conducting comprehensive financial reviews of all MS-DRGs to determine net margins, including MS-DRGs for COPD (190, 191, and 192). For the fiscal year ending June 2007, we had discharged 182 patients with an average negative margin of $613/patient. We hoped to reduce this net loss by implementing our new Inpatient COPD Care Program in September 2008. Important aspects included suggesting in the new standing order set the oral administration of antibiotics and steroids (one-tenth the cost of IV administration), and the RT-driven COPD medication protocol (patients are started on short-acting bronchodilators to gain control of the acute exacerbation, then, based on a patient assessment score, transitioned to twice daily dosed long-acting bronchodilators).

One year following implementation of our program, a similar financial analysis revealed a net positive margin of $128 per patient (for the four quarters following implementation). Pharmacy costs had decreased by $52/patient/day, and respiratory therapy costs decreased by $27/patient/day. (The average patient received 1.7 less treatments per day.) In the second year of the program, financial analysis revealed a net positive margin of $699 per patient. It is also noteworthy that LOS remained relatively constant in years one (3.6 days) and two (3.4 days) of the program compared to what it was prior to implementation (3.4 days).

### 30-day readmission rates

We also analyzed our 30-day readmission rates for COPD MS-DRGs at program implementation and for the two years after implementation. Table 4 summarizes this data.

**Table 4. Comparison of 30-Day Readmission Rates by Quarter**

| Calendar Quarter/Year | 30-Day Readmission Rate |
|---|---|
| Q4/2008 | 28% |
| Q1/2009 | 20% |
| Q2/2009 | 11.76% |
| Q3/2009 | 17.86% |
| Q4/2009 | 14.71% |
| Q1/2010 | 15.22% |
| Q2/2010 | 14.29% |
| Q3/2010 | 6.25% |

NOTE: Rates indicate % of readmissions for COPD patients discharged with MS-DRG 190, 191, and 192, and readmitted for any MS-DRG.

### Preparing your program

Our data suggest that RTs can significantly improve the care for patients hospitalized for a COPD exacerbation. However, there are several important considerations that respiratory therapy managers should be aware of as inpatient COPD disease management programs are developed.

First, there must be processes in place to monitor care provided to COPD patients, with care and treatment provided reflecting current evidence-based guidelines. Such guidelines can be incorporated into standing orders and protocols. Audits of care provided can be accomplished by a retrospective analysis of itemized patient charges, chart audits, or with daily monitoring by RTs and/or the RT COPD specialist.

Second, respiratory therapy managers need to work closely with financial analysts to obtain information that will facilitate detailed analysis of COPD-specific MS-DRGs. Data collected should include charges and reimbursement, as well as direct and indirect costs. Once this data is collected, a net margin per patient can be determined; a net loss would indicate opportunity for improvement. Direct costs can also be separated on a departmental basis (respiratory, laboratory, pharmacy, radiology) to further gauge the impact of a disease management program. The financial analysts can also determine LOS, and this can be compared to the Centers for Medicare and Medicaid Services (CMS) benchmarks for geometric and arithmetic LOS found in the CMS DRG Handbook or on the CMS website.[8]

Lastly, 30-day readmission rates are now receiving much attention from CMS and other third-party payers. For example, CMS recently published two COPD hospital-level quality outcomes measures for public comment that included:

- 30-day, all-cause mortality following hospitalization for acute exacerbation of COPD
- 30-day, all-cause readmission following hospitalization for acute exacerbation of COPD.[9]

The measures are designed for potential use in public reporting and are complementary measures intended to assess different domains of hospital quality. Respiratory therapy managers should therefore obtain and track readmission rates, specifically the 30-day all-cause readmission rates for the MS-DRGs for COPD and also the 30-day COPD readmission rates (readmitted for the same MS-DRG). Fortunately, there are database programs that offer benchmarks and comparison data with peer hospitals. No doubt these types of outcomes will find their way

(continued on page 62)

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The AARC has been collecting photos from Association members this year for our **photo contest**. Now it's time to select the winning photo for our February 2012 *AARC Times* cover.

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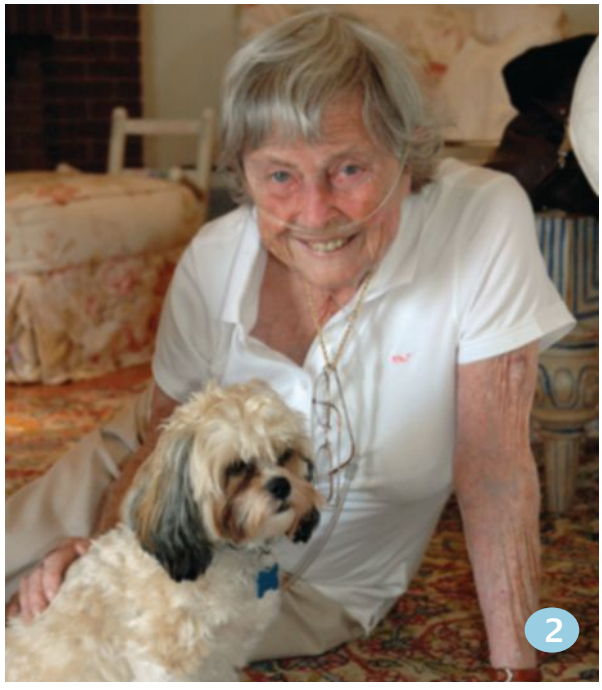


**Congratulations to this year's Photo Contest finalists, who each received a free annual AARC membership renewal!**




1. Louis M. Kaufman, RRT-NPS, AE-C, FAARC, Germantown, MD

2. Kerry J. McNiven, MS, RRT
Simsbury, CT

3. Mary Ellen Kaye, RRT
Santa Fe, NM

4. Celeste Belyea, RRT, CPFT, RN
Ormond Beach, FL

5. Patricia Jefferson, RRT
New Orleans, LA

Clarissa Goodwin goes over the plan of care with one of her DASH patients.

At Klingensmith HealthCare in Ford City, PA, AARC members Dan Easley, BS, Kimberly Wiles, BS, RRT, and their colleagues always had the ability to offer outstanding clinical care to their respiratory patients; but as reimbursement for durable medical equipment (DME) began to decline, they knew the clinical assessments and other disease management services they were providing would soon be unsustainable.

# In Pennsylvania, COPD Patients DASH to Better Health

## DME/HHA hybrid delivers much-needed disease management services

by Debbie Bunch

**COPD patients suffer a lot of disability as their disease progresses, but with the right help and information much of that disability could be avoided. AARC members in the Keystone State are proving the point with a new program to reduce readmissions and improve the health of patients in their area.**

"The patient-centered model quickly became the equipment-centered model," says Wiles, who is vice president of respiratory services. "The insurance companies are simply not paying for added service." DMEs simply threw in the towel when it came to offering clinical care. Easley and Wiles got their calculators out and did some simple math instead.

"We viewed the issue of lowering the cost of chronic respiratory disease management in a much broader scope," says Easley, chief business development officer and senior vice president of sales and marketing. "If a rehospitalization costs $16,000 and 25% of the COPD patients return in 30 days, then certainly we could focus our therapists on impacting that problem for less than the $4,000 breakeven cost."

That "outside the box" thinking led to a spin-off of the main company called Klingensmith Clinical Care (KCC). The hybrid DME/respiratory home health agency (HHA) offers a comprehensive disease management program called Discharge+Assessment&Summary@Home, or DASH, for short. Says Easley, "We started developing DASH in April 2009 and implemented it in February 2010 with a focus on face-to-face assessments, measures developed from global best practices, and a software program designed to capture the assessment data and create multilevel reports from the results for physicians/hospitals and payers."

The program has benefited immensely from the active involvement of AARC member Brian Carlin, MD, FAARC, a pulmonologist in Pittsburgh and assistant professor of medicine at Drexel University College of Medicine in Philadelphia. "Over the past several years, I have been involved in the early detection of COPD through the National Lung Health Education Program," he explains. He became acquainted with Klingensmith HealthCare while studying the use of newer types of oxygen delivery technology. "I met Dan Easley during those research efforts, and we began to talk about ways to improve the care of patients with COPD."

Along with a forward-thinking group of local pulmonologists, they put their heads together and came up with a program that relies heavily on the skills of the respiratory therapist to manage COPD patients on home oxygen. The Klingensmith team developed the software the RTs would use to record metrics during the home visits. Dr. Carlin helped to provide the medical background for the initiative, focusing on components of care that would benefit patients, along with those that were recognized as performance measurements for health care providers. "We noted an extremely high 30-day rehospitalization rate for those patients who were discharged from the hospital following a stay for an exacerbation and felt that a home-care based program would benefit those patients greatly," says the physician.

Klingensmith RTs weighed in with practical advice about caring for patients in the home setting. "The reality check came from our own respiratory therapists who understood the problems in the home and were able to streamline the assessment protocol and suggest efficiency improvements in the software," says Easley. The program targets activities of daily living, patient education, patient monitoring, and medication reconciliation. Attempts are also made to get the patient into a pulmonary rehabilitation program, and follow-up information is always sent to the patient's primary care provider.

"The respiratory therapist will visit the patient on the day following discharge, one week later, and 30 days later," says Dr. Carlin. Care is supplemented with the use of various phone calls to the patient during that month as well.

### Opening the door to reimbursement

Initially, DASH was implemented with the company's DME patients, says Wiles, but the plan was always to find a venue more appropriate for a disease management service. "As we better understood the complexity of the patients and the gap in home care services for respiratory patients, we decided to create a 'hybrid' home health

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agency focused on respiratory patients," she explains. Once KCC was born, nursing services were added to address the comorbidities common among COPD patients. Occupational and physical therapists were brought on board as well to tackle the pre-pulmonary rehabilitation objectives. Using this comprehensive, team-based approach, KCC today has enrolled more than 500 patients into the DASH program and has seen about a 30% monthly growth since the second quarter of this year.

"We knew that the respiratory therapist is key in the management of the respiratory disease," says Easley, "but with the development of the home health agency, it allowed us to bring in other disciplines that are essential in the ongoing care of the patient." The HHA also opened the door to funding for the program. "Under the HHA guidelines, even though respiratory therapy services are not directly reimbursed, we can include their services and even add services such as spirometry as part of the overall episode cost," he notes. "Very soon we hope to conclude managed care contracts that are truly disease management oriented and focus on COPD services from whatever specialty therapist the patient needs."

With the new payor emphasis on reducing readmissions — the Centers for Medicare and Medicaid Services recently issued a final rule calling for reduced payments to hospitals with higher than expected readmission rates for acute myocardial infarction, congestive heart failure, and pneumonia after 2012 and is expected to add COPD to the list by 2014 — Easley believes the time has come for this kind of disease management program. The emphasis on transition of care is engaging all levels of providers to examine their post-discharge relationships, quality programs, and even internal pathways of care.

Indeed, growing concerns about improving the transition of care drove buy-in for the program from area hospitals, which recognized the need to get something up and running well in advance of the penalties being enforced. Hospitals were motivated by the introduction of quality improvement incentives by the regional Medicare Advantage plans. Local hospital RC departments joined the effort for much the same reasons and were pleased by the fact that DASH wouldn't require any in-house resources, according to Easley. Since the program gives hospitals a place to send their patients, the opportunity also exists to lower lengths of stay and identify patients who could benefit from outpatient services such as pulmonary rehabilitation and sleep testing. The program can figure into the HEDIS®/PQRS [Health Plan Employer and Data and Information Set/Physician Quality Reporting System] measurements as well.

### Research leads the way

Easley says reaching this level of success wouldn't have been possible without their commitment to collecting and reporting outcomes data early on in the process. A pilot study led by Dr. Carlin shortly after the program began got the ball rolling. "We wanted to understand risk factors and what measures would indicate a patient's ability to function at home," says Easley. "Previous research pointed us toward measuring activity/functionality, dyspnea, heart rate recovery, saturation during activity, breathing technique, self-management skills, simple action plans during a flare-up, medication delivery technique, appropriate prescription standards of care, and follow-up appointments."

Baseline data came from the Pennsylvania Health Care Cost Containment Council, which was reporting 30-day readmission rates for COPD of 20–30%. The pilot study was presented at the AARC Congress in Las Vegas last December (where it also received the Charles W. Serby COPD Research Fellowship award) and showed less than a 4% readmission rate for patients who participated in DASH. In response to a question received during the AARC session, the group went on to add a control group made up of patients who refused to continue in DASH after the first visit, finding a readmission rate of 13% versus 3% for patients who completed all three home visits by day 30.

The group has continued to collect outcomes on the program and recently presented two abstracts at CHEST 2011; it is scheduled to present three more at AARC Congress 2011 in Tampa this month. "The outcomes show

that by using such a respiratory therapist-driven process, the 30-day readmission rate for this group of significantly ill patients with COPD who required supplemental oxygen was reduced to below 5%, compared to historical controls in our area of 25%," explains Dr. Carlin, adding, "The respiratory therapist is an essential component to the success of the project, and the results show that respiratory therapists can very successfully develop and implement such a program."

### Knowledge is power

Clarissa Goodwin, BS, CRT, is one of 12 RTs who work with the DASH program and says the experience has been one of the most rewarding of her 17-year career. "I feel education is the key factor contributing to a healthier patient both physically and mentally. The more patients understand their disease and disease process, the better prepared they are." Families also become more informed, and all this knowledge translates to the better outcomes seen in the Klingensmith studies. "Information and knowledge are empowerment as far as a patient is concerned," says Goodwin. "With knowledge in hand, these patients can live a better quality of life longer." She recalls one patient who illustrates the impact disease management can make on someone's life. "One of my patients in the program made it a point to call our office after our initial visit together. He wanted to say I had given him more valuable information and education on his disease than he had received in his entire life from other health professionals." That alone would have made her day, but by the third and final visit, this gentleman had even more good news to report.

"This particular patient had a job where climbing steps frequently throughout his shift was a requirement," says Goodwin. Although he needed the money and relied on his job as a social outlet, he wasn't sure he'd be able to go back to work. Goodwin wasn't sure either, but by that third visit, he was back on the job; and when she asked him how he was managing all those steps, he replied that he was using the breathing exercises she had taught him and taking his medications as she had instructed — something he wasn't doing prior to the program.

### The way we were

Dr. Carlin believes success stories such as this one could be commonplace if more COPD disease management programs like DASH would be implemented across the country. "In many instances, reimbursement for performance of such services by a respiratory therapist are either unrecognized or uncovered or both," says the physician. "Taking into account the 'overall costs' associated with a rehospitalization, the costs of having such a therapist available in such a program are truly minor." As today's fee-for-service model of health care morphs into one that places a greater emphasis on health, wellness, and the prevention of illness, Dr. Carlin sees great opportunities for the respiratory therapist in the delivery of disease management services to patients with COPD.

Dan Easley agrees and says KCC's DASH program is proof that such services are worthwhile. "Ultimately success is all about aligning care, implementing an excellent transition of care, and pointing our best-skilled therapists at the best point of care."

As one of the frontline RTs providing care through DASH, Clarissa Goodwin says it's all about tapping into the one thing that motivates patients more than anything else, and that's something she strives for every day. "One thing I have definitely learned in doing this type of work is that patients want as much of their life as possible to be 'the way it used to be,'" she says. "If I can do that for just one person, then I feel I've done my job successfully." ■

# When the Going

Mother Nature went on a rampage in several areas of the country over the past year, but respiratory therapists were up for the challenge.


by Debbie Bunch

Massive snowstorms, devastating tornadoes, raging floods, a record-setting drought, the first hurricane in three years, even an earthquake on the East Coast — the United States has definitely seen more than its fair share of wild weather in the past 12 months. Not all of these natural disasters impacted health care; but when they did, respiratory therapists rallied to the cause, doing everything they could to keep their patients as safe and sound as possible — sometimes even when they and their own families were feeling the effects themselves.

### 173 tornados in one day

Wed., April 27, was especially deadly for six states in the Southeast. Over the course of just 24 hours, 173 tornadoes were spotted, a new record for a single storm system. More than 340 people lost their lives in the storms, and thousands were left homeless.

In Tuscaloosa, AL, Byron Truelove, BSRT, RRT-NPS, CPFT, director of respiratory care at DCH Regional Medical Center, was watching the local news in the hospital's command center when a tower cam caught one of the tornadoes touching down in the western part of the city. "Just looking at the width of the tornado and the amount of debris, we expected it to be bad," he says. "We never expected it to stay on the ground for almost 80 miles."

The tornado passed within about 800 yards of the hospital; but luckily the facility only suffered minor damage, along with a loss of power and temporary loss of water pressure. Staff acted quickly to move patients in the damaged areas to safety, and the facility's generator took over to keep everything up and running. That was

# Gets Tough, *RTs Get Going*


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good news, since victims from the storm soon began arriving, sometimes five to an ambulance.

They were met by plenty of caregivers. "We had no need to implement any call tree," says Truelove. "Employees and physicians came from everywhere, parking on the highway and walking when they could not get any closer to the hospital."

RTs were right in the mix. "At one point we had 12 busy respiratory therapists covering the emergency department. By midnight, we had treated over 800 people, and by morning that number would reach over 1,000." By 8 a.m. on Thursday, though, the ED was back to normal status. "I have never seen such teamwork, and I hope I never have a reason to see it again," says the AARC member.

### In the eye of the storm

The rash of tornadoes that ripped through the Southeast in late April left folks in America's tornado alley — an area falling roughly between the Rocky and Appalachian Mountains — understandably nervous. They had every reason to be worried; and on May 22, the city of Joplin, MO, showed why.

The massive EF5 tornado that ripped through Joplin on that Sunday evening destroyed about a third of the city and killed at least 122 people. And St. John's Hospital was right in the eye of the storm. AARC member Christopher Cox, RRT, is the orientation coordinator at St. John's and (like a lot of the respiratory therapy staff) was off that Sunday evening. But as soon as he heard his hospital had been hit, he took off for the facility.

"It was about an hour after the tornado hit that I stopped to watch the weather," recalls Cox, who was having dinner at his parents' house. He looked on in horror as a reporter from the Weather Channel stood in the middle of broken 2x4s, begging for medical help. In the background, he saw his hospital. "The hospital I had worked at for 12 years had taken a direct hit," says Cox. "Sheets were blowing out the windows like ghosts. I immediately had tears in my eyes thinking of my co-workers. I ran home and drove straight to work."

Lori Schiska, RRT, was also off that Sunday evening. The storm moved through, bringing with it hailstones as big as baseballs and a loss of power. "We searched for a radio and finally found some batteries that would work

## DMATs to the Rescue


When Mother Nature strikes, local health systems can quickly become overwhelmed. As was the case in Joplin, MO, last summer (see main article), that's where the federal Disaster Medical Assistance Teams (DMATs) step in. The AARC encourages all of its members to seriously consider joining one of these teams to help ensure they will have the services of a qualified respiratory therapist when the time comes. For more information on joining a DMAT, read the interview with Lewis Rubinson, MD, PhD, FCCP, deputy chief medical officer for the National Disaster Medical System, in last month's *AARC Times*. Dr. Rubinson is also going to have an information and sign-up booth in the Exhibit Hall of the AARC Congress this month. Stop by Booth 925 to learn more about joining a DMAT and making a difference. ■


DCH Regional Medical Center, Tuscaloosa, AL, in the eye of the storm

and turned it on to see if the worst of the weather was over," remembers the AARC member. Schiska and her husband heard about the devastation in Joplin, but they did not know how bad it was until they started getting phone calls from relatives from out of state. Schiska's daughter called from Oklahoma City to tell her mom about what she was seeing on the national news. Then her mother texted that patients were being evacuated from St. John's. Like Cox, she headed straight for the hospital.

"Traffic was bumper to bumper as I tried to make my way to St. John's," she says. "I finally found a lot to park in about six blocks north of the hospital. As I walked toward St. John's, the grim reality of what had just happened was evident all around me."

Cox had the same impressions as he neared the facility. "Nothing was recognizable," he says. "Police were at every intersection." He flashed his hospital badge at one of them, and the officer just yelled back, "Park and run!" Cox left his vehicle and ran toward the hospital, the smell of natural gas thick in the air. He heard someone scream that they were afraid the building would explode.

### Everyone working together

When the two RTs arrived, they found that patients from the main hospital had already been evacuated and were now huddled together with staff members in the Medical Office Building, many covered with glass, cuts, and blood. "Everyone was quiet and wide-eyed," says Cox. Shortly thereafter, Joplin school buses started pulling up, and he and his co-workers began loading patients into the buses and pickup trucks for the short drive across the street to Freeman Hospital, which had miraculously escaped the worst of the tornado.

"I will never forget how well everyone worked together," says Cox. "Nurses, techs, and therapists were calm and directing patients to the nearest truck, bus, or van."

Schiska echoes those sentiments. "It was nothing short of a miracle that 183 patients and all the staff made it out

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# The AARC Is in Your Corner

AARC members step up to help their hospitals and their patients cope whenever a disaster strikes. The AARC steps up as well, with monetary assistance from a Disaster Relief Fund supported by generous donations from the membership.

Established nearly two decades ago, the AARC's Disaster Relief Fund has been activated many times over the years in response to floods, hurricanes, tornadoes, and other natural disasters. RTs who have been AARC members for six months and are in a state or federally declared disaster zone are eligible for grants of up to $500.

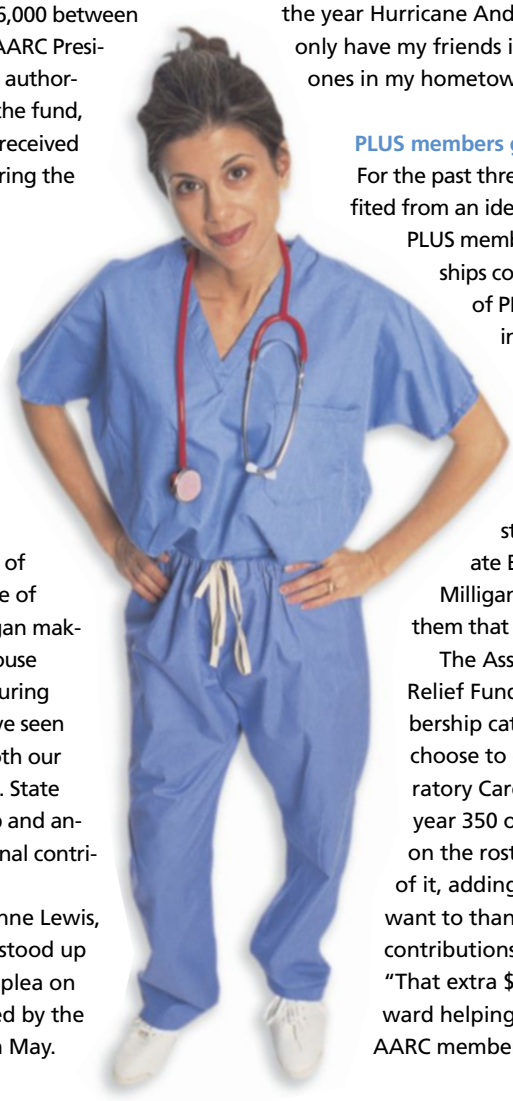
The AARC disbursed more than $86,000 between 2003 and 2010. In March of this year, AARC President Karen Stewart, MSc, RRT, FAARC, authorized the AARC to deposit $5,000 into the fund, and several AARC members have also received grants from the fund to help them during the disasters this year.

## It starts with you

Today the fund stands at a robust $62,000, more than 10 times the amount recorded at the end of 1998. Much of the credit has to go to AARC members from our state societies who continue to contribute through their delegates to the AARC House of Delegates. "Soon after the fund was initiated by the AARC Board of Directors, members of the AARC House of Delegates and their state societies began making contributions," says 2011 AARC House Speaker Bill Lamb, BS, RRT, FAARC. "During my 11 years serving in the House, I have seen this generosity become tradition at both our summer and national House meetings. State society representatives proudly line up and announce their state's and/or their personal contributions to disaster relief."

At the House meeting in July, Dianne Lewis, MS, RRT, FAARC, an RT in Naples, FL, stood up before the group to deliver a special plea on behalf of members who were affected by the EF5 tornado that hit in Joplin, MO, in May. "Joplin is my hometown," she explains. "I basically related personal information from my mother and brother." Lewis described the devastation in the city, noting that St. John's Hospital was damaged so badly that it will have to be demolished, and thousands of businesses and families have been affected.

The speech was especially poignant for Lewis, since the fund was first implemented in 1992, the year she served as AARC president. "That was also the year Hurricane Andrew hit Miami, FL. So not only have my friends in Miami benefited, but also ones in my hometown."



## PLUS members get into the act, too

For the past three years, the fund has benefited from an idea generated by our AARC PLUS members as well. "PLUS memberships come with a gift, but a number of PLUS members began writing in to say they really didn't want another t-shirt or another trinket. More than one person suggested they'd rather have that money go to a good cause instead," explains AARC Associate Executive Director Sherry Milligan. "We were happy to give them that option."

The Association added the Disaster Relief Fund option to the PLUS membership category (members can also choose to give to the American Respiratory Care Foundation), and this past year 350 of the 3,000 PLUS members on the roster chose to take advantage of it, adding $10 each to the fund. "We want to thank all these members for their contributions to the fund," says Milligan. "That extra $3,500 is going a long way toward helping us be there for your fellow AARC members should the need arise."

### Members say thanks

Over the years, more than 200 AARC members have benefited from the Association's Disaster Relief Fund, and they've all been extremely grateful for the grants they've received to help rebuild their homes and their lives. As a token of additional support, every member who receives monetary assistance also receives free AARC membership on renewal for the coming year.

So far this year, grants have gone out to over 50 members, who were awarded a total of $15,000. Two members who experienced the ravages of Mother Nature in North Dakota and Tennessee wrote in with special thank-yous for the support.

Johnetta Lawrence, RRT, who works at the University of Tennessee Medical Center in Knoxville, saw her roof destroyed by a hail storm that took place during the rash of tornadoes that hit the Southeast on April 27. A $4,650 deductible on her insurance policy was going to place undue hardship on her family, so she applied for assistance and was pleased to be approved.


When the basement and main floor of her home in Minot, ND, filled with over four feet of water last June due to a surge in the Souris River not seen since 1881, Karen Sedevie, RRT, from Trinity Health, was suddenly faced with the prospect of gutting the lower floors and rebuilding. She also applied for assistance from the AARC, and was soon approved as well.


### Here for you

While the dollar amount of grants given through the fund may be relatively small, Bill Lamb says the donations make a huge impact on members. "I have heard personally from several beneficiaries of disaster relief funds and been copied on numerous thank you notes and letters of appreciation that convey very sincere, touching, and passionate gratitude, and attest to how much the AARC's support means to them," says the House of Delegates speaker. He believes Johnetta Lawrence, Karen Sedevie, and all the other members who have benefited from the AARC's Disaster Relief Fund over the years serve as great examples of how the Association is here for you when you need your professional organization the most. ■

(continued from page 49)
alive. I can't describe how proud I am of the job the therapists and all the other caregivers did that night."

Cox, Schiska, and the rest of the St. John's team continued to be there for their hospital in the days after the storm. On Tuesday, Cox got a call to come in to work to assist the State Disaster Medical Assistance Team (DMAT), which had arrived on scene to set up a Mobile Medical Unit. The 60-bed unit was fully operational in just three days; and Cox, who had been trained by the DMAT members on Friday, began training his own staff on Saturday. Doors opened on Sunday, and by Sunday afternoon, a minor surgery was performed. "Over the next several days we were seeing 50–70 ER patients a day!" says the therapist.

### A hurricane named Irene

By late August, Joplin was on the road to recovery, although it will be some time yet before things get back to normal in the areas hit by the tornado. St. John's for example, was still closed, but the hospital had announced plans to break ground on its new 327-bed facility in January, with an expected completion date in 2014. In the meantime, the field hospital Christopher Cox spoke about was getting ready to transition to a hard-sided modular facility, and plans were underway to open a component hospital in the spring that would allow St. John's to regain its Level II Trauma Center designation.

Mother Nature, however, was moving right along. On Saturday, Aug. 27, the first hurricane to hit the United States since Ike in 2008 barreled down the East Coast, causing hospitals in the direct path to evacuate their patients to safer ground. Home care providers meanwhile worked overtime to ensure their patients would be able to weather the storm.

"On Friday, we had a few oxygen patients call and make inquiries as to what they should do," recalls Ted Gress, RRT, operations manager at EME Medical Equipment in Ephrata, PA. "We made sure we had as many of our large oxygen tanks filled as possible, along with some of our liquid oxygen base units." The company placed an extra delivery tech on call to provide back up for the normal on-call person for the weekend; and the rest of the delivery, clinical, and management staff went on alert.

Numerous patients called in to the retail store location the next morning, wanting to know what they should do in case their power went out, and Gress and his colleagues kept everyone informed. "On Saturday night and Sunday morning, Hurricane Irene came up the coast to the east of our service area," he says. "There was over three inches of rain — in some areas, up to five — along with and followed by high winds with gusts in the 50 mph range, which downed trees and produced power outages."

More than 33,000 people in Lancaster County, which is the primary county served by the company, had lost power by Sunday morning; and between 6:30 a.m. and 6 p.m. 10 oxygen patients called to report power outages. "We delivered $O_2$ to them as needed to make sure everyone's needs were met," says Gress.

### Tackling challenges head on

The experiences these RTs had in the wake of these natural disasters, including the most recent ones — fires across the Southwest and flooding in Pennsylvania caused by Hurricane Lee — were no doubt repeated many times over for other therapists who found themselves in the line of these horrific catastrophes. But as their stories illustrate, RTs know how to tackle challenges like these head on, ensuring their patients and colleagues have what they need to survive. We can't control Mother Nature, but it is nice to know respiratory therapists will be there to handle whatever she dishes out. ■

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


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

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# COPD Awareness @ Work

## Team captains explain how our latest DRIVE4COPD initiative is reaching out to Americans on the job

by Debbie Bunch

RTs may think of COPD patients as elderly men and women well into their retirement years; but the fact is, most of them had the disease long before they ever left the workforce. The AARC's Adopt-a-Company initiative is designed to identify these people while they're still young and vital enough to effect change.

From left: Chuck Menders, BA, RRT; Shawna Strickland, PhD, RRT-NPS, AE-C; and Curt Merriman, RRT, CPFT.

In the August issue of *AARC Times*, we told you about the AARC's new Adopt-a-Company DRIVE4COPD campaign. Aimed at working Americans, the campaign asks AARC members to adopt a company in their community to provide its employees with the five-question DRIVE4COPD screener and COPD information.

Have you ever responded! Over the past few months, AARC members all across the country have risen to the challenge, contacting employers in their areas to begin the dialog on COPD and why early detection of the condition is so important to a person's health. As this edition of *AARC Times* goes to press, many of you are feverishly planning health fairs and other events with your companies to mark National COPD Awareness Month here in November.

**Sign up and order materials for Adopt-a-Company at www.AARC.org/drive4copd.**

### The true face of COPD

That's a good thing, say AARC members Chuck Menders, BA, RRT; Shawna Strickland, PhD, RRT-NPS, AE-C; and Curt Merriman, RRT, CPFT. As team captains for the Adopt-a-Company initiative, they've been networking with Association members nationwide to promote the campaign and guide members in bringing it to fruition in their communities.

"There are many people in the workforce who are at risk for COPD or who have early stages of COPD but are asymptomatic," says Menders, director of respiratory care at Charleston Area Medical Center in Charleston, WV. "In fact, it is estimated that approximately 70% of people living with COPD are still in the workforce. This means those folks between the ages of 40 and 65 represent the true face of COPD." By working through employers, RTs have the chance to bring these faces out into the open where they can get the early care and treatment so vital to minimizing the worst effects of the condition.

Dr. Strickland says partnering with companies is a great way to deliver much needed information about COPD to people who wouldn't get it any other way. "Working Americans with busy families and lives may have too much going on to remember to see their physicians every year as recommended," says the clinical assistant professor and director of the respiratory therapy program at the University of Missouri in Columbia. "By focusing on the working American, this campaign can take health care to the workplace, thereby making the screenings more accessible to the employee."

DRIVE4COPD
Take action today. Breathe better tomorrow.

Merriman, who serves as vice president of marketing and sales at C.O.R.E. Respiratory Services in Burnsville, MN, echoes Menders' comments about the high number of people out there today who have COPD but don't know it. "Working Americans are the ones who make up a significant portion of the 12 million who are undiagnosed with COPD," he says. "The sooner we can help identify them, the more help the RT can be in helping to educate, slow the progress of the disease, and improve the quality of their lives."

## COPD Facts

### COPD Fact: It's the Fourth — No, Make That the Third — Leading Cause of Death in the United States

For years now the federal government has been telling us COPD is the nation's fourth leading cause of death. But according to the most recent statistics from the Centers for Disease Control and Prevention, it has moved to third. Now outpaced only by heart disease and cancer, COPD claimed the lives of 124,477 Americans in 2007. ■

### COPD Fact: Women Suffer More

For the past eight years, more women have died from COPD than men. In 2007, nearly 64,000 women succumbed to the condition, compared to 60,000 men. ■

### COPD Fact: Smoking Remains the No. 1 Risk Factor

From 85–90% of all COPD deaths are directly attributable to smoking. Female smokers are almost 13 times more likely to develop the condition than nonsmokers. For men, that figure is 12 times more likely. Quitting smoking is considered key to minimizing the ill effects of COPD. ■

# COPD Facts

## COPD Fact: Nonsmokers Are at Risk, Too

While smoking is implicated in the majority of COPD cases, other risk factors play a role as well. People with an inherited deficiency of the alpha1-antitrypsin protein are more likely to develop the disease whether or not they smoke. A history of childhood infections, exposure to air pollution and/or toxic substances on the job, socioeconomic status, and most especially, exposure to secondhand smoke, raise the risk as well. ■

## COPD Fact: It's Under Diagnosed

Statistics from 2008 put the number of Americans diagnosed with COPD at 13.1 million. But nearly 24 million people have evidence of impaired lung function, suggesting many more people have COPD but don't know it. ■

## COPD Fact: It's a Very Costly Disease

In 2006, COPD accounted for an estimated 672,000 hospital discharges, and a little over a third of those discharges occurred in people under the age of 65. In 2010, overall costs to the nation were estimated at about $49.9 billion, with $29.5 billion going for direct health care expenditures, $8 billion for indirect morbidity costs, and $12.4 billion for indirect mortality costs. ■

## COPD Fact: It's Life Limiting

According to a survey conducted by the American Lung Association, half of all COPD patients report their condition limits their ability to work. Seventy percent say it impacts their ability to engage in normal physical exertion, 56% say it affects their ability to perform household tasks, and 53% say it puts a damper on their social life. Also, 50% say it affects their sleep, and 46% say it limits their ability to interact with their family. ■

### It just makes sense

The Adopt-a-Company initiative is an extension of the DRIVE4COPD campaign launched in 2010 to screen people for the condition using the five-question population screener. The AARC jumped on board mid-year to help the campaign reach its goal of screening one million Americans and ended up screening more people over the next few months than any other organization involved in the effort.

Merriman says getting RTs on board for the Adopt-a-Company initiative was a little more of a challenge — in the initial campaign, most AARC members took the screeners out to health fairs and other community events where they have traditionally offered PFTs and respiratory health information — but the more he's spoken with people around the country, the more positive comments he has received. "I have had conversations with RTs who like the idea and are now seeing that the task is not as difficult as they initially perceived," he says. "We need to keep this campaign in the forefront and continue to tell our success stories. It doesn't matter the size of the business or organization — it is the end result impacting the 12 million, one at a time."

Dr. Strickland agrees. "Most of the folks I've talked to are very positive about the initiative. When I explain the purpose, the most frequent response I receive is 'that makes sense.' And I agree — it just makes good sense to take our message to the folks who really need it and can reap the benefits," she says. In her state of Missouri, members who have adopted companies are planning more than just screenings. "We're planning trivia games, free spirometry, education, and helping people find the help they need."

The same is happening in many other areas, says Menders. "Many therapists have already adopted companies and are working with human resource departments, employee health departments, or the company's wellness program to plan activities and functions," he says. "Events are being planned in order to reach individuals who may be at risk."

### Fringe benefits for the profession

The Adopt-a-Company campaign is first and foremost about reducing the burden of disease that COPD places on Americans. But there are fringe benefits as well, chief among them the fact that by the simple act of going out into the community to provide a worthwhile service, respiratory therapists raise awareness of their profession. "One of the most common frustrations I hear from respiratory therapists is that people just don't know who we are or what we do," says Dr. Strickland. "This is our chance to shine. By taking these messages to the community, we are presented with an opportunity to showcase our talents, our community focus, and our compassion."

"We all still hear people say, 'what do you do, you are not a nurse?'" says Merriman. He believes working out in the community helps to change that mindset. "The best way to educate and expand your message is at the grassroots level, and the Adopt-a-Company is a perfect match."

Menders reminds us all that RTs are the "lung health experts" and Adopt-a-Company provides the perfect opportunity to let the public know it. "By partnering with people in our communities, we are demonstrating the commitment and professionalism of the respiratory therapist. We are not only making the public aware of the risks for COPD but are also making them aware of our profession." ■

# AARC Members Take DRIVE out into the Community

## Our Adopt-a-Company campaign is a great way to connect with businesses and organizations everywhere

by Debbie Bunch

▶ The AARC's new Adopt-a-Company campaign is aimed at delivering COPD screening and education to businesses and organizations, and members are taking advantage of the opportunity. Take a look at what two different groups from Texas and one from Kansas have already done.

## One Event Leads to Another

For Wadie Williams Jr., MS, RRT, a respiratory therapy manager at Methodist Hospital in Houston, TX, and captain in the Texas State Guard, Medical Brigade, it all started in June when he got a call from the AARC asking if he would be willing to help organize a DRIVE4COPD booth to be sponsored by the Association at the upcoming Texas VFW Convention in the Houston metro area. "The AARC supplied the materials, and we supplied the personnel for the booth to conduct the screenings and scorings of the screening tool," says Williams.

With the help of his department manager, AARC member Ken Hargett, MHA, RRT-NPS, FAARC, he recruited volunteers from among respiratory therapy departments at the Methodist family of hospitals and also solicited help from Romar Reyes, MEd, RRT, clinical director at the University of Texas Medical Branch (UTMB) at Galveston, who got several of his students involved.

### The love of his life

The VFW convention took place from June 30 to July 2, with the AARC's DRIVE4COPD booth scheduled for the 30th. RT volunteers at the event came home with new insights into how raising awareness of COPD can benefit our veterans of service. (View a video from the event on YouTube posted on the AARCCenter channel.) One gentleman in particular really touched Terri Salas, RRT, from Methodist Hospital in Sugarland. "He was a tall slender man whom I watched from a distance walk toward our booth," she recalls. The man expressed concern over some breathing problems he was having, then showed Salas a picture of the love of his life — an adorable chihuahua. He was worried about what would happen to it should anything happen to him.

Salas explained the signs and symptoms of COPD and had the man fill out the five-question DRIVE4COPD screener. "He scored seven, which put him in the high-risk category. I advised him to see his physician as soon as possible and to express his concerns. He took his survey, a fact sheet on COPD, and thanked me repeatedly on his way out."

### Round two

More than 1,100 veterans attended the June 30th session, and Williams estimates the RT volunteers reached about 500 of them with the DRIVE4COPD message. But that was just the beginning. Thanks to the success of the DRIVE event at the convention, he met some veterans from Crosby, TX, a small city just outside of Houston, who asked if respiratory therapists would be willing to attend their annual meeting and family gathering to provide the same education and screening to local vets. The answer, of course, was yes; and since the AARC's Adopt-a-Company campaign was then underway, he decided to adopt the Crosby VFW Post. He was joined by fellow AARC member Abdul Amin, MS, RRT, a clinical educator at UTMB and also a captain in the Texas State Guard, Medical Brigade.

The two traveled to Crosby on July 23, where they got the chance to visit with many of the 100 people who had gathered for fellowship and fun. "We did actual screeners with about 30 folks and gave out about 100 of the questionnaires for them to use with family members and friends," says Williams. "The day was filled with music, good food, and plenty of water, as it was approaching 100°." ■

## 5 Snapshots *of the* SCREENING EVENTS

**2.** *Darla Burns, RRT, CPFT, from San Jacinto Methodist, shows a DRIVE brochure to one of the vets at the Texas convention.*

**4.** *One of the delegates to the VFW convention listens as UTMB student Yaser Nabi explains the purpose of the screener.*

**3.** *UTMB student Vuong Dinh, RRT, looks on as a vet goes through his DRIVE handouts.*

**1.** *Abdul Amin shares some information about COPD.*

**5.** *Wadie Williams (right) enjoyed the opportunity to visit with vets in Crosby, TX.*

# A Great Learning Experience for Students

The end of August was DRIVE time for Helen Sorenson, MA, RRT, FAARC — associate professor in the department of respiratory care at the UT Health Science Center in San Antonio — and her students.

Like Williams and his colleagues, they reached veterans of service with their first event, held on behalf of the AARC at the national VFW convention in their city Aug. 27–Sept. 1. "We screened close to 400 individuals over the four days and tested over 150," says Sorenson. Many already had a diagnosis of COPD, and some were on oxygen; so she and her students spent a lot of time answering questions about oxygen, showing them how to use their medications, and listening to their stories about living with COPD.

### Continuing the momentum

Since the VFW convention was such a huge success for the group, they decided to keep the momentum going by taking part in a health fair being sponsored by the Leon Valley Community Center in Leon Valley, TX, on Aug. 31. "It was the senior center's very first health fair, and they had over 35 booths with various health care-affiliated organizations involved," says Sorenson. She and four of the students had a DRIVE4COPD table and screened 30 people; they went on to test nine who came up as high risk for COPD. "Most of them were potential diagnoses," she says. Interest in the booth was high, and she and the students were again kept busy answering questions and providing information and advice on dealing with chronic lung disease.

"Individuals attending both DRIVE4COPD events were eager to talk to us about their symptoms/diseases and to tell us their stories," says Sorenson. "In addition to COPD, we answered questions about mesothelioma, asthma, pulmonary fibrosis, and lung cancer." The students who accompanied her had just completed a three-semester-hour course on PFTs and were happy to have the chance to put their new skills into operation, and they also appreciated the opportunity to work one-on-one with chronic lung patients and potential patients.

### A valuable hands-on experience

"What the students found surprising at the VFW convention was the number of individuals who declined to do the screening, stating 'oh, I already know I have COPD,'" says Sorenson. "There seemed to be a quiet acceptance that COPD was inevitable if you had been in the military years ago." The students got a good lesson

## 2 Snapshots *of the* SCREENING EVENTS

**1.** *Students from Helen Sorenson's program watch while visitors fill out the DRIVE4COPD screeners.*


**2.** *Listening to the vets tell their stories was a big part of the day at the national VFW meeting.*

in dealing with patient perceptions of lung disease as well. "We did have one lady who, when asked about the screening, replied, 'I already have asthma, so I know I am going to get COPD,'" says Sorenson. When they explained to her that asthma and COPD are different diseases, she still declined testing.

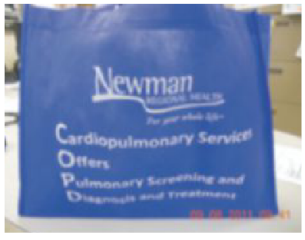
Other people who had been screened and came up as high risk for COPD simply wandered away from the booth before they could undergo spirometry, but Sorenson says the students caught up with them and shepherded them back. "The vets really enjoyed the special attention they got from the students, and vice versa."

The experience was so positive for all concerned that after the Leon Valley health fair, Sorenson and five of her students decided to attend and participate in another event at the University of Texas, Austin, in early October. As of this writing in early September, they were all looking forward to the event and to potentially identifying more people with COPD while they still have time to minimize the disease's effects. ■

**1.** *Helen Sorenson visits with Thomas "Doc" Howard, MD, a surgeon attending the VFW convention in San Antonio.*

## More Snapshots *of the* SCREENING

**2.** *Sorenson's RT students enjoyed the chance to connect with patients and their families.*




**3.** *Thanks to support from their CEO, Schell and her colleagues have been able to give out these recyclable shopping bags to everyone who agrees to be screened.*

**4.** *The hospital also had special shirts made for RTs taking part in the screenings.*

EVENTS

# Cardiopulmonary Services Is on the Go!

**5.** *A hospital worker gets some coaching from one of the RT volunteers.*


**6.** *Karen Schell (left) and her colleagues show off their traveling COPD display.*

Up in Emporia, KS, Karen Schell, MHSc, RRT-NPS, RPFT, and her colleagues decided the best way to participate in the Adopt-a-Company campaign was to take on their very own hospital, and they got started in August with the lofty goal of screening 80% of the employees at Newman Regional Health. The plan was to visit various departments over a two-week period with DRIVE screeners in hand.

To publicize the activity, Schell placed an article in the hospital newsletter titled "Cardiopulmonary Services Is on the Go!" The story let everyone know RTs would soon be visiting their area to provide some background on COPD and explain why early diagnosis is so important.

## CEO on board

Schell reports a very good response so far. "Only a couple of employees have refused, and we suspect they are smokers and already know their lung shape."

The initiative has also received the full support of the hospital's CEO who not only endorsed the campaign but also approved the purchase of new spirometers to use in the testing, along with special shirts for the RTs (the sleeve says "COPD" while the back reads "Respiratory Therapist"), handouts, and recyclable grocery bags, which are given to everyone who agrees to be screened. "We had our CEO buy into the project when Adopt-a-Company came out," says Schell. "I went to him with a plan and sold him on the benefits of public relations, customer service, and educating the public through exposure."

## Sharing expertise

Schell says the RTs do a lot of educating during the screening sessions, talking to employees not only about COPD but also about smoking cessation and lung health in general. Participation from the staff has been terrific. "They all want to be involved," she says. "The night shift is screening the nurses during some slow times, the day shift takes turns on who is screening, and even the sleep tech (who is also an RT) is helping out on her days off from sleep."

Starting out with their own hospital has given the group a chance to gather some data that they are now beginning to share with other companies in the area. Their goal is to adopt more businesses over time. "We are going to go to the chamber of commerce once we are done with our screens at the hospital and put the word out that we are available to adopt businesses," she says. As of this writing in early September they already had one additional company lined up and were also planning to take the screeners to their annual Flu Shot Drive-By on Sept. 22 and a senior fair in October.

"Our goal is to share our expertise and send the patient back to their primary care provider with test results in hand for possibly more complete testing," says Schell. "Hopefully we'll get the positive patients into our PFT lab for further testing and promote the hospital at the same time." ■

## The View From Here

(continued from page 26)

television shows and movies, as well as EMTs and paramedics. Even radiology techs and nurses' aides are mentioned. These shows inspire scores of young people to explore and choose these career paths. Without the support of outside sources, respiratory therapists are left by the wayside to educate those around us.

### Building toward the future

Some of you may think that you would like nothing more than to stay out of the limelight, and you may even ask, "What benefit is there by promoting the respiratory care profession?" For starters, it is one thing that is expected of you. The AARC vision/mission statement states, "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." This should be a guide for you to follow in your career, allowing you to be the best in what you do.

Another reason would be to gain the professional respect we deserve on a larger scale. Over the past several years, many leaders in our profession have been promoting the Medicare Respiratory Therapy Initiative. The bill, H.R. 941, is currently awaiting a Congressional Budget Office (CBO) cost estimate and continues to gain co-sponsors in the House of Representatives. The legislation would permit physicians greater options in employing full- or part-time qualified respiratory therapists under less intense supervision now required under Medicare rules.

Many patients depend on our skills, caring attitude, and expertise on a day-to-day basis. Promoting our profession will allow us to better care for patients in an ever-expanding environment. With your help and efforts, we can make the respiratory therapist a household name. Join me in being the best therapist you can be and share the love of what you do with your patients. ■

## Observations

(continued from page 32)

services or products for less than your cost. We already know about the burden of the uninsured, but we also have a cost-shifting burden to the private sector to make up for lower payments in Medicare and Medicaid. There is no signal that the cycle will abate.

### What you can do

Professionals who provide respiratory care services have an opportunity to increase their value by eliminating unnecessary care and improving compliance with generally accepted treatment guidelines. Both remain problematic in our nation's health care system.

While we may not be able to do much to control reimbursement rates, we can do a great deal to make our part of the health care delivery system more efficient, more cost effective, and improve clinical outcomes. The system is still burdened with unnecessary care, and far too many institutions do not use evidence-based medicine to draw up guidelines that will move providers toward more appropriate use.

We in respiratory care also have another advantage as we move forward. Since we currently do not have access to patients outside the hospital to any meaningful extent, once we reposition to access patients through physician practices, we will be able to lower the exacerbation rate, improve the patient's quality of life, improve compliance with the physician's care plan and, yes, save money.

We are overdue to bring about these changes. So what's stopping us? I am sure that none of you want to build your future on unnecessary care. So why not build it on assuring that care is necessary? I am sure that all of you reading this do care about your patients once they are discharged from your service. We must now undertake changes in our practice so that patients, especially those with chronic pulmonary diseases, are better prepared to maintain a higher quality of life by avoiding exacerbations. If we can minimize exacerbations, we become part of the solution (lowering cost to treat).

Over the last 40 plus years since Medicare has been enacted, we've seen reimbursement squeezes, health care provider layoffs, and then, once the pendulum swings too far, we scurry around and develop incentives, bonuses, etc., so people will just work for us. It's time for us to stop doing the "two step" of one forward, one backwards, and put it in gear (that is, the forward gear) and drive out unnecessary costs associated with respiratory care. As a great man once said, "If not us, who? If not now, when?" ■

## Clinical Perspectives

(continued from page 36)

into the new CMS Value-Based Purchasing Program slated for implementation in October 2012.

By redesigning inpatient COPD care processes to improve clinical and economic outcomes, RTs have yet another opportunity to demonstrate the value they can bring to the health care team. The timing for such an undertaking couldn't be better, and our patients deserve no less. ■

DISCLOSURE

Neither author discloses any conflict of interest in the preparation of this manuscript.

EDITOR'S NOTE

Lead author Gary Brown is willing to share the "COPD Protocols and Forms" he used in his program with AARC members. They are being placed in the Help Line Community, which is open to all members on AARConnect.

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# Industry Watch

### NIH grants will promote eMERGE network research

Researchers in the Electronic Medical Records and Genomics (eMERGE) network will receive $25 million in grants over the next four years to demonstrate that linking genomic information to disease characteristics and symptoms in patients' electronic medical records can be used to improve their care. The grants are being made by the National Institutes of Health's National Human Genome Research Institute (NHGRI). The goal is to connect genomic information to high-quality data in electronic medical records during the clinical care of patients. "This will help us identify the genetic contributions to disease," NHGRI Director Eric D. Green, MD, PhD, was quoted as saying. "We can then equip health care workers everywhere with the information and tools that they need to apply genomic knowledge to patient care."

### Ikaria granted clearance for compatibility of drug-delivery systems

According to Ikaria Inc., the FDA has granted 510(k) clearance for compatibility of its INOMAX drug-delivery systems with six additional respiratory care devices. The proprietary systems, which deliver INOMAX® (nitric oxide) for inhalation, are now compatible with more than 50 makes of ventilators, anesthesia systems, and other RC devices, making them fully compatible with most invasive mechanical ventilation methods and noninvasive respiratory strategies used in NICUs, including CPAP and nasal cannulas.

### Apnex Medical receives IDE approval to study OSA treatment

Apnex Medical Inc. has received investigational device exemption approval from the FDA to begin a clinical study to evaluate the safety and effectiveness of its Hypoglossal Nerve Stimulation (HGNS®) therapy. The implant activates the muscles in the upper airway to keep the airway open during sleep in people with obstructive sleep apnea. Noting that many patients who suffer from OSA are unable to tolerate existing therapies such as CPAP, Dr. Atul Malhotra, clinical chief of the division of sleep medicine at Brigham and Women's Hospital noted, "The HGNS System provides a fundamentally new approach to the treatment of OSA. This study will help us further understand the potential role this device will have in treating the millions of people who suffer from OSA."

### University of Illinois researchers receive grant to study ALI

Researchers at the University of Illinois at Chicago College of Medicine have been awarded more than $11.7 million to study the pathology of acute lung injury. The study is part of a multi-pronged investigation being funded by the NHLBI. The interdisciplinary research will look at a bioactive lipid called sphingosine-1-phosophate (or S1P) and its receptors, examining their role in lung cell signaling, inflammation, and injury caused by sepsis or radiation.

### Discovery Laboratories seeks approval for patient interface adapter

Discovery Laboratories Inc. has announced its intent to seek regulatory approval to market AFECTAIR, a potential new product originating from the AEROSURF® development program. The disposable patient interface adapter introduces aerosolized medications into the ventilator airflow close to the patient and reduces the number of connections to the ventilator circuitry without compromising ventilatory support. According to Discovery, studies suggest this technology is an effective option for delivering aerosolized medicine to all patients receiving ventilator support, while providing a simplified alternative to conventional methods.

### CareFusion, ResMed enter into new agreement

CareFusion and ResMed now have a five-year agreement giving CareFusion the exclusive right to distribute the

ResMed Stellar™ 100 and 150 noninvasive ventilators and their related accessories in the U.S. institutional health care market. The agreement gives CareFusion a more competitive offering in the institutional NIV market, which is expected to grow by more than 6% annually. For ResMed, the agreement provides a timely introduction of its new ventilation products through CareFusion's relationships with U.S. hospitals and long-term acute care and skilled nursing facilities.

## Helix BioPharma to study lung cancer drug

Helix BioPharma Corp. has received approval from the Central Register of Clinical Trials at the Polish Ministry of Health for its European clinical trial application to perform a planned Phase I/II study. It will gauge the clinical safety, tolerability, and preliminary efficacy of its lung cancer drug candidate, L-DOS47. L-DOS47 is based on the company's novel DOS47 technology, which is designed to modify the microenvironmental conditions of cancer cells in a manner that leads to their destruction. L-DOS47 will offer an innovative approach to the first-line treatment of inoperable, locally advanced, recurrent, or metastatic non-small cell lung cancer.

## MBio Diagnostics to develop rapid influenza test

MBio Diagnostics Inc. has received a five-year, $5.2 million award from the NIH's "Partnerships for Biodefense" program to detect disease-causing respiratory pathogens in humans. The company will address the need for a rapid, inexpensive influenza diagnostic test with performance superior to commonly used flu tests, as well as the need for rapid deployment of such a test during public health screening emergencies. MBio's CEO Dr. Chris Myatt notes that during the 2009 H1N1 pandemic, "We saw how rapid-flu tests run in clinics were of limited utility. Laboratory-based molecular tests provided much better accuracy but were more expensive, and results took days to get back to the patient." The goal is to develop a nucleic acid-based test that delivers the accuracy of the laboratory diagnostic in an easy-to-use, inexpensive format that can be run while the patient waits.

## P2D Bioscience to develop anti-inflammatory drugs

P2D Bioscience has received a $320,000 grant from the NHLBI to develop a novel class of anti-inflammatory drugs specifically targeting lung diseases, including acute lung injury/acute respiratory distress syndrome, COPD, and asthma. The first-in-class treatment focuses on inhibiting the activation of neutrophils in the lung. Lead compounds were initially identified by Drs. Marie-Dominique Fillippi and Yi Zheng at Cincinnati Children's Hospital Medical Center, where they utilized gene-targeting studies and preclinical lung inflammation screening models.

## 2011 "Best Hospitals" report issued

*U.S. News and World Report* released its latest list of "Best Hospitals" last August, looking at data on nearly 5,000 hospitals in 16 adult and 10 pediatric specialties. Seventeen hospitals made the honor roll, reserved for those facilities that score at or near the top in at least six of the 16 specialties. Number one on the list was Johns Hopkins Hospital in Baltimore, MD. To see the complete list, visit http://health.usnews.com/best-hospitals.

## NexBio announces Phase 2 data on ILI drug

NexBio has announced top-line data from a Phase 2 clinical trial of DAS181, an investigational drug for the treatment and prophylaxis of influenza-like illness caused by all strains of influenza and parainfluenza viruses, including pandemic influenza strains. In a double-blind, placebo-controlled trial of otherwise healthy adults infected with influenza virus, treatment with DAS181 resulted in a significant reduction in patients' influenza viral loads. The research was funded by the Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases, at the NIH.

## Health Care Without Harm supports Clean Air Promise

Health Care Without Harm (HCWH) has announced a new initiative to help support the Clean Air Act. The campaign is targeting the health care community, legislators and policymakers, community and business leaders, and individuals, asking them to make a Clean Air Promise to protect America's children and families from air pollution. It is supporting clean air policies and other protections that scientists and public health experts have recommended to the EPA to safeguard air quality.

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

# 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.**



## Automatic Oxygen Controller

CareFusion's Closed Loop Controller of Inspired Oxygen system, or CLiO2™, is the first automatic oxygen controller of its kind designed to keep blood oxygen levels within a safe range for newborns needing mechanical ventilation. An enhancement to the CareFusion AVEA™ ventilator, the CLiO2 system noninvasively and continuously measures the oxygen level using Masimo SET® Measure-Through Motion and Low Perfusion pulse oximetry technology. The system processes blood oxygen saturation levels by a computer algorithm that then anticipates trends and modifies the amount of oxygen delivered. If necessary, adjustments can be made on a second-to-second basis. www.carefusion.com





## BiPAP System

The BiPAP autoSV Advanced-System One from Philips Respironics combines the company's proven SV Advanced algorithm with its premiere System One platform, enabling treatment of the most complex sleep-disordered breathing patients. The device incorporates the state-of-the-art Encore patient data management and reporting system, giving clinicians the ability to access real-time patient compliance data, including detailed patient and usage information; AHI, leak, and periodic breathing data; and detailed patient-flow waveform data. It features cellular modem data transfer to Encore Anywhere and incorporates the same advanced System One humidification system that is in the System One product line. www.philips.com

## Universal Oxygen Cylinder Carrier

The Bellhop™ from Captive Technologies is a low-cost, lightweight universal oxygen cylinder carrier that simplifies inventory without limiting patient choice. Constructed of rugged, stylish 600-denier polyester that's durable, machine washable, and comfortable against the skin, the Bellhop has two fully adjustable padded straps so it can be configured instantly to four different carry modes, each accommodating all the ambulatory-sized $O_2$ cylinders. The Bellhop also features easy-grip dual zipper pulls, discreet $O_2$ tubing exit slots on each side, and a sports bag-like mesh window that allows instant read of gauges yet keeps bag contents out of view. www.captivetechnologies.com

## Portable Liquid Oxygen System

Royal Philips Electronics' new HomeLox portable liquid oxygen system includes a liquid oxygen generation and storage unit that remains in the user's home, along with a lightweight and long-lasting portable device, GoLox. HomeLox generates liquid oxygen by converting room air into oxygen, then chilling and converting it to liquid form. The liquid oxygen is stored within the HomeLox unit until it is transferred to GoLox for portable use using a new hands-free clean filling process that helps reduce freezing, overfilling, and under filling.
www.philips.com

## Syringe and Tube Set

Aerogen's new Solo Continuous Nebulization Tube Set enables medical personnel to safely and continuously nebulize a patient by completely eliminating the danger of tubing misconnections through the use of non-standard connectors that, unlike luer lock connectors, cannot be misconnected onto any other device being used with the patient. The new tube set is compliant with the European Harmonised Standard EN 13455-1 and with the FDA guidelines on the prevention of tubing misconnections.
www.aerogen.com

# RC Currents

IN THE NEWS

## AARC Assists CDC with Student Vaccination Survey

The AARC is working with the Centers for Disease Control and Prevention (CDC) on a new CDC/National Vaccine Program Office survey aimed at learning more about student immunization policies in respiratory care educational programs. The CDC asked the AARC to review the survey instrument and also contacted CoARC for their input and a list of respiratory therapy program directors nationwide.

According to the CDC, more than 50% of program directors across the country should have received a letter signed by AARC President Karen Stewart, MSc, RRT, FAARC, plus a link to the online CDC survey, in their email boxes. We urge everyone who received the survey link to participate in this government effort to learn more about student immunization policies in the nation's respiratory care educational programs. ■

## Did You Celebrate Respiratory Care Week?

We want to hear about what you did to celebrate National Respiratory Care Week this year. Upload your high-resolution photos to www.aarc.org/rcweek with a brief description before Nov. 5, especially identifying your organization. You just might find your story on the AARC website or in an upcoming issue in "RC Currents." ■

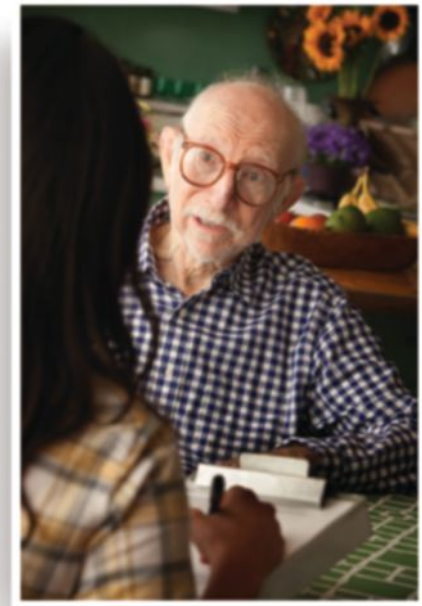
## "Hospital to Home" Survey Results Are In

Earlier this year the AARC Management and Home Care Sections began work on a new program to ease the transition between hospital and home for chronic lung disease patients. The first step was to conduct a survey of the nation's RC departments to get a feel for the kinds of services hospitals are offering in this area today, and what they anticipate for the future as the federal government's Hospital Readmissions Reduction Program goes into effect.

Now the results are in. Here are just a few of the key take-home messages for hospital-based and home care RTs alike; the full report is available to Management and Home Care Section members on AARConnect.

While 35.8% of respondents did report they are doing nothing to address COPD hospital readmissions at this point, many RC departments are already in the process of tackling the problem:

- 41.5% are using evidence-based algorithms, pathways, guidelines, or protocols.
- 20.2% are creating COPD programs that addresses inpatient, discharge, and outpatient needs.
- 11.9% are partnering with local DME companies to create programs that enhance patient care in the home.
- 9.8% are providing follow-up phone calls to patients after discharge.
- 8.8% are creating disease-specific nursing floors for patients with cardiopulmonary disease.
- 5.7% are using RTs as case managers/discharge planners.
- 2.6% have created a COPD coordinator position.



More information on the results are available at www.aarc.org/headlines/11/09/hospital_to_home.cfm. If you'd like more information on this survey, get involved with the Management or Home Care Sections. ■

## Read the Rest of the Story at AARC.org

- U.N. meeting tackles noncommunicable diseases — www.aarc.org/headlines/11/09/un_ncds.cfm
- AARC members travel to DC to lobby for clean air — www.aarc.org/headlines/11/09/clean_air/index.cfm
- AARC says no to cigar legislation — www.aarc.org/headlines/11/09/cigar_bill/index.cfm
- Disaster fund available to hurricane and wildfire victims — www.aarc.org/headlines/11/09/disaster_fund.cfm
- AARC supports pulmonary fibrosis bill — www.aarc.org/headlines/11/09/pulmonary_fibrosis_bill.cfm

## Contribute to Writer's Corner

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

## ▶ Transitions


1

**Amanda McGarrigle, BHS, RRT-NPS, RPFT,** is the new assistant manager for adult respiratory care at the Medical University of South Carolina in Charleston. She was recently named Outstanding Young South Carolinian at the 2011 South Carolina Outstanding Young American Awards ceremony as well. (Photo 1)


2

**Todd Messenger, RRT,** has been promoted to area sales director at Draeger and will lead a team of sales executives and application specialists. Messenger previously served the company as a sales representative. (Photo 2)


3

**Jonathan Waugh, PhD, RRT, FAARC,** has been promoted from associate professor to professor and appointed as a scientist with the University of Alabama at Birmingham Lung Health Center. (Photo 3)


4

**Garry Kauffman, MPA, RRT, FAARC,** has been appointed to the Respiratory Therapist Advisory Committee at Harrisburg Area Community College in Harrisburg, PA.

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


## Honoring Military RTs

If you are a respiratory therapist currently serving your country in the military, *AARC Times* would like to publish a story and photo about your service or deployment.

Please go online at www.AARC.org/go/mm where you will find an online form you can fill out to provide information about your service and deployment. You can also download your photo there.

Once we receive your information, we may use it to prepare an "RC Currents" story about your service in the military. The AARC honors those who serve, and we would like to share your story with your respiratory care colleagues here and abroad. ■

# Helping the Local Newspaper Take Healthy Living to the Community


**Tina Louise Moreno shows off one of the newspaper articles that resulted from the Healthy Family Project.**

Last January, a reporter for the *Desert Sun* in Palm Springs, CA, read a report about the obesity epidemic among children and decided her paper should do something about it. The result was the Healthy Family Project, a six-month-long effort aimed at showing a local family the way to better health. The newspaper partnered with Desert Regional Medical Center to run the project, and Pulmonary Rehabilitation Coordinator Tina Louise Moreno, RRT, was one of the health care professionals asked to play an active role.

"The Healthy Family Project was a community education project where the newspaper asked the community if there were any families that would like to improve their health as a family," explains the AARC member. "Families were asked to write in and explain their situation and desire. All of the letters were so sincere; it was very hard to choose just one family. I wanted to work with all of them."

Moreno and her colleagues initially met with the chosen family — a 52-year-old mom and her nine-year-old son, and the mom's 52-year-old fiancé and his 24-year-old son — to go over their health issues and goals for improvement, then followed them over the next six months to help them meet those goals. The reporter came along and documented it all for subsequent articles in the paper.

"Our involvement was to inspire, instruct, assess, connect, give tools and resources, and help them set realistic goals," says Moreno. She and her colleagues researched national guidelines for children and adults and gathered handouts to give to the family that they felt would be appropriate to their situation. "We wanted to make sure that everything we did was something that a regular family could do at home," says the therapist. They didn't want to get too formal or fancy — they just wanted to make everything possible for the mom, dad, and children.

Moreno says she personally provided a demonstration of proper breathing for the family at the first visit, focusing on pursed-lip and diaphragmatic breathing techniques. Family members were also assessed for weight and waist circumference, and each went through five assessment tests used in a Fit After Fifty program Moreno teaches at the medical center. The bariatric department weighed them on its body fat composition scale, and the pulmonary services medical director, Dr. Daniel Walters, met with the families to explain the importance of healthy sleep habits. A local physical fitness trainer came by to talk about strengthening the core. Moreno and the rest of the team focused on the importance of exercise, stretching, monitoring pulse rate, keeping a journal of activities, and measuring progress.

"During the project we met with the family at 6:30 a.m. or at the Wellness Park across the street from the hospital at noon to accommodate their work or school schedules," says the therapist. "Overall we saw a wonderful improvement in their connection with each other. They rode their bikes to the Wellness Park, learned to hula hoop, and discovered fruit and vegetables and relaxation time."

The project generated 12 articles in the newspaper, many of which featured quotes from Tina Moreno. She says she met a number of people out in the community who recognized her from the articles and told her how much the information was helping them make healthier choices and become more active.

She took a lot of the information home to her own family as well. In fact, Moreno has lost more than 85 pounds in the past year, and she now rides her bicycle to work, often accompanied by one or more of her sons and (in the summer) her grandchildren. "All of a sudden we have a wonderful family group riding their bikes on purpose at 5:15 in the morning," she says. "It's the domino effect of teaching fitness and healthy living." ■

**EDITOR'S NOTE:** Bonus information is available in the online version of *AARC Times* by clicking on the underscored links. AARC members can access the online version by logging on to www.AARC.org and selecting the *AARC Times* icon in the left margin.

## Gene Therapy Holds Promise for Lung Cancer Patients

In a first of its kind study, University of Pennsylvania researchers have used gene therapy to successfully treat patients with advanced leukemia. The therapy uses the patient's own T-cells to target a molecule on the surface of leukemia cells. Two patients treated in a Phase I trial have been remission free for as much as a year, and a third patient showed a strong anti-tumor response. Four more patients will be treated before the therapy moves to a Phase II trial.

The researchers believe the therapy holds the potential to treat not just leukemia patients but also those with lung cancer and other forms of the disease. The study was published in recent issues of both the *New England Journal of Medicine* and *Science Translational Medicine*. ■

## ▶ Strange But True…

**Timing Is Everything:** When a smoker first lights up in the morning has an impact on his risk of developing lung cancer, report Penn State researchers. They find smoking the first cigarette of the day within the first half hour of waking up confers nearly an 80% greater risk.

**Virtual Rats:** A computational biologist at the Medical College of Wisconsin is developing an animal lab that even the most ardent animal rights' advocate could love. His "virtual physiological rat" project uses computer models of rat physiology to study the link between genes, environmental factors, and disease.

**Kissin' Cousins:** The debate about our relationship to the Neanderthals is over. When Canadian researchers compared a haplotype of human DNA whose origin was previously unknown to the same haplotype in the newly sequenced Neanderthal genome, they found the two were a match. The Neanderthal sequence was subsequently found in people on every continent except sub-Saharan Africa. (July issue, *Molecular Biology and Evolution*)

**Manly Mice:** MIT investigators have engineered artificial livers from human liver cells and then implanted them in mice. The implants allow the mice to break down drugs and produce liver proteins much as a human would do, opening the door to a new way of screening drugs and improving therapies for liver diseases.

**Remote Motion:** University of Maryland researchers are working on a "brain cap" they believe will allow users to turn thoughts into action. The noninvasive, sensor-lined cap comes complete with neural interface software the investigators envision can soon be used to control computers, robotic limbs, motorized wheelchairs, and even digital avatars. ■

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

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

# "Zak's Day" Honors Young Leukemia Patient


**Linda Moore (center, red shirt) organized "Zak's Day" at her school to honor young Zak Mazzullo following his most recent round of chemotherapy for acute lymphoblastic leukemia.**

Most eight-year-olds are more concerned about what they're going to do today than what their future might hold. But not Zak Mazzullo. The young leukemia patient wants to study science and medicine so he can find a cure for cancer and other kids won't have to suffer as he has.

Last Aug. 9 he got a head start on his plans when Linda Moore, BS, RRT, and her students in the RC program at Wallace Community College in Dothan, AL, hosted a day-long event in his honor.

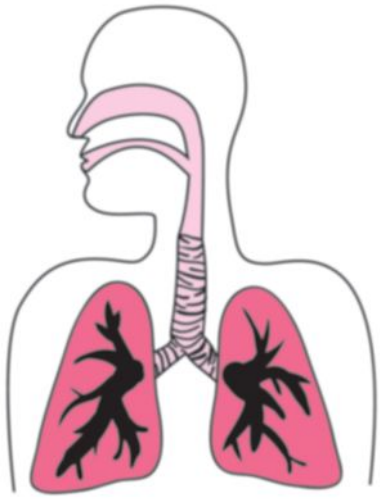
**Moore put her allegiance to the University of Alabama Crimson Tide aside to present Zak with a football jersey from his beloved Auburn University Tigers.**

"He is so smart," says Moore. "He aced a college-level algebra exam and is learning the same advanced medical terminology that my students are studying. He is an awesome kid!" A long-time friend of Zak's parents (his dad graduated from her RC program), she stepped up to help home school the child after his parents had to withdraw him from his elementary classes due to the risk of infection from other children.

Moore hosted "Zak's Day" to mark the end of the boy's eight-week chemotherapy treatment at Children's Hospital in Birmingham. In addition to the intubation lesson, the day included a buffet luncheon and lots of gifts, including one that Moore bestowed herself, even though it took a departure from her usual convictions to do it.

As it turns out, Zak is a huge fan of the Auburn University Tigers, while Moore is an avid supporter of the University of Alabama Crimson Tide — arch rivals in the Southeastern Conference. While she never imagined herself purchasing a Tigers jersey, she says Zak was worth the temporary suspension in school spirit. "He's the only Auburn fan I could ever really love," quips the educator. ■

## GER Treatment Benefits Patients with IPF



Could gastroesophageal reflux (GER) treatment prolong the lives of patients with idiopathic pulmonary fibrosis (IPF)? Yes, report researchers from the University of California, San Francisco (UCSF) who looked at outcomes for 204 IPF patients seen at either UCSF or the Mayo Clinic between 2001–2008. GER symptoms were noted in 34%, and a patient- or physician-reported history of GER was present in 45%. About half of the patients reported being treated for GER at the time of their IPF diagnosis, and 11 patients had undergone surgical treatment for GER.

Results showed patients who had received or were receiving GER treatment had significantly improved survival times when compared to patients who were not treated for GER. "There is controversy among pulmonologists about how aggressively GER should be treated in patients with IPF, given the risks of both surgical and medical treatment," study author Joyce Lee, MD, was quoted as saying. "However, our study showed that the use of these treatments is not only associated with a lesser degree of fibrosis but also with a longer survival time."

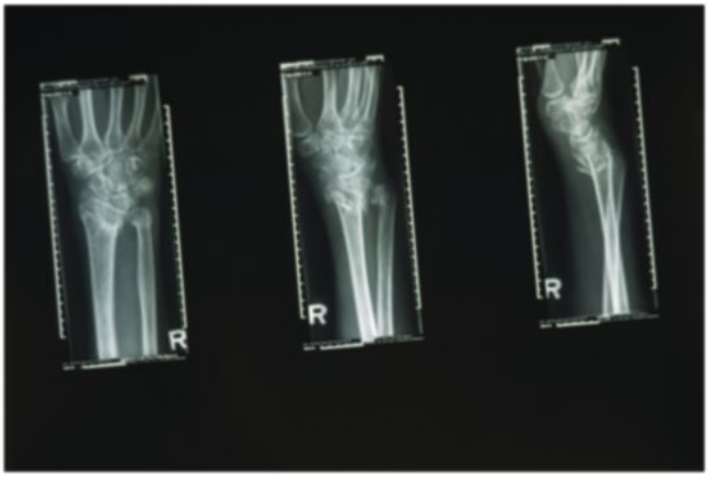
The study was published ahead of print in the *American Journal of Respiratory and Critical Care Medicine* late last summer. ■

## Are Inhaled Corticosteroids Linked to Bone Fractures in COPD Patients?

A new study out of Johns Hopkins has found COPD patients who used inhaled corticosteroids (ICS) for more than six months had a 27% higher risk of bone fractures. Since the research was conducted mostly among men age 60 or older, who are less likely to experience fractures than women of the same age, the investigators believe the results raise questions about the safety of these drugs in this patient population.

The investigators reviewed and analyzed two different sets of research studies comparing the ICS drugs fluticasone and budesonide to a placebo. One study looked at 16 long-term double-blind randomized controlled trials with more than 17,500 participants; the other examined seven observational studies with 69,000 participants. In both, the researchers found a significantly increased risk of fractures for those using ICS. The observational studies also found evidence that fracture risk increased as steroid dosage increased.

"It really makes us wonder what is happening to women with COPD who use inhalers, because older women are already at a much higher fracture risk than men," said study author Sonal Singh, MD, MPH. The research was published online in *Thorax* last summer. ■




## National Health Observances

- **Great American Screen Off**; Nov. 4; AARC, (972) 243-2272; www.AARC.org, or www.drive4copd.com
- **Lung Cancer Awareness Month**; November; Lung Cancer Alliance; (202) 463-2080; www.lungcanceralliance.org
- **COPD Awareness Month**; November; AARC, (972) 243-2272, www.aarc.org
- **World COPD Day**; Nov. 16; Global Initiative for Chronic Obstructive Lung Disease (GOLD); www.goldcopd.org
- **Great American Smokeout**; Nov. 17; American Cancer Society; (800) ACS-2345; www.cancer.org
- **National Influenza Vaccination Week**; Dec. 4–10; Centers for Disease Control and Prevention; www.cdc.gov/flu/nivw

# Medical Simulation Technology Brings Community Service Program to Life

Respiratory therapy educators are increasingly using medical simulation technology to give students and clinicians alike the opportunity to practice new medical skills on lifelike mannequins.

Scott "Woody" Woodcox, MPH, BSRC, RCP, and his colleagues at ICF International, a global firm that has partnered with the U.S. Air Force to provide simulation training at the Medical Readiness Training Center at Camp Bullis, TX, are also using their medical simulation equipment to teach high school kids about the consequences of drinking and driving.

"As a staff of former military members, we try our best to give back in some way," says Woodcox. "One program we've had great success with is the 'Shattered Dreams' program." Created by the Bexar Country DWI Task Force Advisory Board on Underage Drinking in 1998, "Shattered Dreams" is a two-day event held in conjunction with high schools around San Antonio, TX. Based on the "Every 15 Minutes" program launched in Chico, CA, back in the mid-1990s, the program involves faculty members, school administrators, parents, community organizations, law enforcement, and emergency medical services from local hospitals.

**Medical simulation equipment from the Air Force's Medical Readiness Training Center lends a sense of reality to motor vehicle crashes set up to teach kids about the consequences of drinking and driving.**

Woodcox, who assists the program in staging mock motor vehicle accidents along with his teammates at Camp Bullis, says the overriding purpose of "Shattered Dreams" is to give kids a realistic look at an alcohol-related crash. "We have recently added high-fidelity simulators to the mock scenario," he says, "which has brought great reviews from students and administrators." The ICF group supports the program at five-to-six high schools each year. ■

## There's an App for That

The Children's Hospital of Philadelphia has issued a new iPad app called the Genome Wowser that allows users to explore the human genome. For example, type the name of a gene into the search box and the app will display an interactive image of its precise location among the genome's 3 billion base pairs on the 23 human chromosomes. Notes about each gene's known or suspected biological functions, along with any identified mutations or variants of the gene, are included as well. Users can also find information about neighboring genes or about epigenetics, defined as how a gene's functions are modified when chemicals attach or separate from exposed sections of DNA. The app is available free of charge in the iPad app store. ■


## Members, Send Us Your Human Interest Stories

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

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

## CF Breakthrough: Mucus-Busting Extracts Discovered

Norwegian researchers have discovered two compounds that are capable of weakening the mucus produced by people with cystic fibrosis. Both are extracts of alginate, a primary component in algae cell walls. Their ability to disrupt mucous interactions is leading the investigators to believe they could play a role in modifying mucus not only in the respiratory tract but in other areas of the body as well. The discovery was reported in a recent issue of *Science News*. ■

## Beauty Contest

People judge hospitals on lots of things — but should their beauty be one of them? We can't answer that question, but we can report there is a company out there doing it. For the third year in a row, health care staffing company Soliant Health has published a ranking of the nation's top 20 most beautiful health care facilities.

So, which hospital is the best looking? Bon Secours St. Francis Medical Center in Midlothian, VA, came out on top for everything from its Virginian-style railings in the public atriums to a soaring decorative bell tower. You can see all 20 of the facilities that made the most beautiful list on the Soliant website. ■

**EDITOR'S NOTE:** Bonus information is available in the online version of *AARC Times* by clicking on the underscored links. AARC members can access the online version by logging on to www.AARC.org and selecting the *AARC Times* icon in the left margin.

# New Members

## Welcome to the AARC

### U.S. Members

#### A

Alshehri, Abdulaziz, Mobile, Al
Alwadai, Nasser, Mobile, Al
Antwi, Felix, Mobile, Al
Bailey, Christina, Daphne, Al
Barron, Diane, Warrior, Al*
Bhagat, Dharmeshkumar, Mobile, Al
Burrelli, Tomasina, Daphne, Al
Cobb, Anna, Mobile, Al
Cox, Artaziao, Mobile, Al
Craft, Leigh, Hartselle, Al*
Dennis Odom, Catherine, Fairhope, Al*
Fleming, Teri, Foley, Al*
Flesher, Charlotte, Robertsdale, Al*
Gantt, Jessica, Andalusia, Al*
Hakamy, Mohamed, Mobile, Al
Harris, James, Mobile, Al
Ivy, Kali, Mobile, Al
Jafaripour, Hamideh, Mobile, Al
Johnson, Sherry, Brundidge, Al*
Kelley, Selena, Oxford, Al*
Laird, James, Mobile, Al*
Lehmann, Adria, Robertsdale, Al
McCallough, Jason, Northport, Al*
McDaniel, Andrea, Tuscaloosa, Al*
Morris, Kelei, Mobile, Al
Ores, Aria, Hoover, Al*
Patel, Kinnari, Semmes, Al
Patterson, Ar'zsa, Mobile, Al
Roper, Wendy, Hoover, Al
Sayre Brittin, Laura, Birmingham, Al*
Shofner, Pete, Bay Minette, Al*
Siraj, Rayan, Mobile, Al
Spencer, Rachel, Mobile, Al
Tang, Rebecca, Mobile, Al
Vu, Hoang, Mobile, Al
Wooten, Craig, Birmingham, Al*
Wynn, Shannon, Leesburg, Al

Akins, Christina, Little Rock, Ar
Anderson, Tom, Norfork, Ar
Arnett, Brittany, Pine Bluff, Ar
Bell, Gary, Knoxville, Ar
Burr, Bethany, Little Rock, Ar
Carrell, Dana, Little Rock, Ar
Chatman, Shelby, Mountain Home, Ar
Childers, Philip, Smackover, Ar
Conner, Tabitha, Pine Bluff, Ar
Davis, Jessica, Texarkana, Ar
Eagle, Joy, Bradford, Ar
Efird, Danielle, Sheridan, Ar
Garner, Stefanie, Star City, Ar
Harrison, Yolanda, Little Rock, Ar*
Herrington, Tera, Malvern, Ar
Higgs, Heather, Little Rock, Ar
Howton, Mary, Little Rock, Ar
Johnson, Christopher, Perryville, Ar
Johnson, Van, Searcy, Ar
Jones, Donna, Melbourne, Ar
Kazan, Abe, Gamaliel, Ar
Kirkpatrick, Joshua, Pine Bluff, Ar
Lake, Misty, North Little Rock, Ar
Lally, Sean, Mountain Home, Ar
Lambert, Megan, Mountain Home, Ar
Leckert, Stephanie, Henderson, Ar
Manes, Leslie, Mountain Home, Ar
Marrufo, Rosalinda, Conway, Ar
Martinez, Frank, Jacksonville, Ar
Matthews, Tammy, Texarkana, Ar
Norton, Whitney, Alexander, Ar
Perry, Tenniel, Pine Bluff, Ar
Reaves, Brittany, Conway, Ar
Riley, Tina, Batesville, Ar
Rodgers, Alex, Searcy, Ar
Round, Nancy, Newark, Ar
Schutz Gonzalez, Melissa, Sherwood, Ar
Sherriff, Aimee, North Little Rock, Ar*
Smallwood, James, Cabot, Ar
Tate, Christopher, Little Rock, Ar
Walters, Michael, Rison, Ar
Wanner, Kelly, Sherwood, Ar
Warner, Gertie, Little Rock, Ar
Waugh, Angela, Flippin, Ar

Ahern, Krystal, Phoenix, Az
Bahe, Earl, Winslow, Az*
Chaotham, Kittiphat, Avondale, Az*
Clarizio, Giuseppe, Peoria, Az
Corder, Karalyn, Mesa, Az*
Foster, Deborah, Tucson, Az*
Greer, Joel, Phoenix, Az
Herron, Tim, Tucson, Az*
Lemonds, Tammy, Prescott Valley, Az*
McGraw, Patrick, Phoenix, Az
Mugford, Kay, Mesa, Az*
Neal, Marcus, Phoenix, Az
Robbins, William, Florence, Az
Rodriguez, Robert, Peoria, Az
Ryan, Kelly, Prescott, Az
Shine, Mosena, Glendale, Az
Thomas, Marcus, Mesa, Az
Wilson Jr, Harry, Phoenix, Az
Wilson, Tom, Phoenix, Az

#### C

Alvarado, Ivan, Riverside, Ca
Alvarez, Ivan, Burbank, Ca
Anderson, Paul, Redwood City, Ca*
Antony, Louis, Canyon Country, Ca
Asryan, Anahit, North Hollywood, Ca
Avalos, Michelle, Rialto, Ca
Averett, Amy, Desert Hot Springs, Ca*
Bajwa, Jenny, Hayward, Ca*
Balbin, Christian, Panorama City, Ca
Barsegyan, Kristina, Canoga Park, Ca
Bartek, Paul, Canoga Park, Ca
Baum, Stefan, San Diego, Ca*
Bencito, Jeffrey, Rancho Cucamonga, Ca
Blomberg, Sarah, Vista, Ca
Bonaldi, Dino, Clovis, Ca*
Boyd, Elisabeth, Sunnyvale, Ca*
Bragg, Ashley, Ontario, Ca
Brown, Robert, Claremont, Ca
Budnitsky, Michael, Los Angeles, Ca
Caballa, Kevin, Van Nuys, Ca
Cameron, Debra, Lodi, Ca*
Castano, Hector, Rancho Cucamonga, Ca
Cedeno, Rafael, Northridge, Ca
Cosio, Eriberto, Sun Valley, Ca
Crosby, Rachel, Ripon, Ca*
Crowther, Golda, Burbank, Ca
Cunanan, Anthony, Northridge, Ca
Cunanan, Jose, Eastvale, Ca*
Dacuag, Harry, Sun Valley, Ca
Dalawangbaya, Kris, Glendale, Ca
De La Cruz, Margaret, South San Francisco, Ca*
Del Mundo, Josh, Sylmar, Ca
Delapena, Paul, Walnut, Ca*
Delfin, Amanda, Riverside, Ca
Dominguez, Robert, Fontana, Ca
Donaldson, Sun Young, San Diego, Ca*
Edwards, Shawnda, Salida, Ca*
Effion, Patrick, Ontario, Ca
Espinosa, Barbara, Fontana, Ca
Evans, Claude, Clovis, Ca
Feavel, Nora, Ventura, Ca*
Gallaguez, Ann Marie, Chino Hills, Ca
Galvan, Nikki, American Canyon, Ca
Garay, Blanca, Northridge, Ca
Genuino, Charmaine, Cerritos, Ca*
Getz, Gary, North Hollywood, Ca
Glasser, Judith, Oceanside, Ca*
Gomez, Edison, La Crescenta, Ca
Gordon, Jesse, Yucaipa, Ca
Habacon, Jonell, Panorama City, Ca
Hallex, Steven, Aliso Viejo, Ca*
Hammett, Jerena, Merced, Ca*
Herzberg, Nikki, Riverside, Ca
Hiskes, Anne-Marie, San Diego, Ca
Horn, Michael, Sun City, Ca*
Huang, Wendy, Elk Grove, Ca
Hughes, Cheri, Fontana, Ca
Janolino, Rainard, Sun Valley, Ca
Javier, Dana, Valencia, Ca
Johnson, John, National City, Ca*
Jones, Justin, Skyforest, Ca
Jung, Dayton, Corona, Ca
Khachikian, Vahe, Glendale, Ca
Kim, Alice, Glendale, Ca
Kimmel, Christena, Laguna Hills, Ca*
Lee, Peter, Orange, Ca
Lone Elk, Jessica, Winchester, Ca*
Longo, Desiree, Modesto, Ca
Lopez, Enrique, Lancaster, Ca
Lowrey, Cal, Carmichael, Ca
Luib, Gwen-Joy, Loma Linda, Ca*
Lynn, Johnny, San Diego, Ca*
MacDonald, Brittany, Riverside, Ca
Manukian, Edgar, Burbank, Ca
Marquardt, Melissa, La Mesa, Ca*
Marron, Eric, San Fernando, Ca*

These individuals have been approved for membership in the AARC. Any member may object to a new membership by filing a written objection with the Executive Office within 30 days. *Active Members

Martinez, Charles, Hemet, Ca
Martinez, Michelle, Rancho Cucamonga, Ca
Martinez, Sarah, San Fernando, Ca
Matic, Dijana, Lincoln, Ca*
McBryde, Charles, Carmichael, Ca*
McDaniel, Quintin, Santa Barbara, Ca*
McDonald, Christopher, Pomona, Ca
McMasters, David, San Diego, Ca
Medina, Daniel, Rancho Cucamonga, Ca
Medina, John V, Rancho Cucamonga, Ca
Miranda, Eliseo, Fontana, Ca
Mkrtchyan, Naira, Glendale, Ca
Monroy, Louie, Santee, Ca
Montgomery, Melanie, Ontario, Ca
Morales, Daisy, Fontana, Ca
Morales, Nereo, Mission Hills, Ca
Morales-Ong, Hannah, San Bruno, Ca*
Murillo, Monica, Panorama City, Ca
Narag, Gavin Rey, Burbank, Ca
Navas, Lidbeth, Sylmar, Ca
Nelson, Alva, Upland, Ca
Nguyen, Bao, Chino Hills, Ca
Nguyen, Julia, Corona, Ca
Nguyen, Tracy, Fountain Valley, Ca
Nuelle, Jeff, Danville, Ca*
Ongsioco, Heather, Rosemead, Ca
Ort, James, San Ramon, Ca*
Ortega, Alyssa, Redlands, Ca
Ortiz, Francis, North Hills, Ca
Panameno, Juan Carlos, Los Angeles, Ca
Paniagua, Monica, Claremont, Ca
Parker, Madeline, Murrieta, Ca
Patel, Nishith, Union City, Ca*
Patel, Radhika, Rancho Cucamonga, Ca
Perez, Derek, Montclair, Ca
Perez, Juan, Claremont, Ca*
Peters, Jack, Lake Elsinore, Ca
Peterson, Stacey, San Diego, Ca*
Poghosyan, Grant, Tujunga, Ca
Pollak, Melissa, Colton, Ca*
Poltarskaya, Gloria, Glendale, Ca
Portello, Jacqueline, Benicia, Ca*
Quin, Tanya, Thousand Oaks, Ca
Quintana, Brittany, Moreno Valley, Ca
Ramos, Rachel, Van Nuys, Ca
Reading, Daniel, Hesperia, Ca
Robeson, Joseph, Fontana, Ca
Rodriguez, Jason, Glendora, Ca
Rodriguez, Tatianna, Lancaster, Ca
Romero, Justin, Northridge, Ca
Saakyan, Tatevik, Glendale, Ca
Sabaot, Jonathan, Chino, Ca
Sadikhov, Farhad, Encino, Ca
Salazar, April, Aliso Viejo, Ca
San Agustin, Ludmila, Fremont, Ca*
Santos, Edward, Corona, Ca
Sapuriada, Kris, Fontana, Ca
Schlinkert, Timothy, Loma Linda, Ca
Seiler, Doris, Roseville, Ca*
Sevilla, Vernae, Rancho Cucamonga, Ca
Shahumyan, Anahit, Glendale, Ca
Shawan, Thomas, Los Angeles, Ca
Skolburg, Stephanie, Alta Loma, Ca
Slaczka, Jeffery, Grand Terrace, Ca
Smith, Madison, Ontario, Ca
Solomon, Jerome, Ontario, Ca
Sonnabaum, Lorayne, La Mesa, Ca*
Sorensen, Brooke, Bakersfield, Ca*
Sprenkle, Robert, Bakersfield, Ca*
Spurbeck, David, Corona, Ca
Stumbaugh, Lorie, Redding, Ca*
Sudchaitham, Supawadee, North Hollywood, Ca
Tan, Mikael, West Covina, Ca
Taylor, Debra, Chula Vista, Ca*
Terrazas, Jenny, Rancho Cucamonga, Ca
Tesfaye, Abiye, Canoga Park, Ca
Theos, Lisa, Anaheim, Ca
Ticlea, Nathan, Fullerton, Ca
Trinidad, Sean, Chula Vista, Ca*
Ulanday, Kevin, Los Angeles, Ca
Vaeth, Stephen, Garden Grove, Ca
Valenzuela, Michelle, Rancho Cucamonga, Ca
Valle, Betsy, Rancho Cucamonga, Ca
Varilla, Roland, Redlands, Ca
Venturoso, Nico, San Diego, Ca*
Volynsky, Adriana, Reseda, Ca
Wachter, Ryan, North Hollywood, Ca*
Walker, Santa, Scotts Valley, Ca*
Williams, Lisa, Ridgecrest, Ca*
Wilson, Brandy, Chino Hills, Ca*
Wissmann, Joanna, Monrovia, Ca
Woods, Chris, Redlands, Ca
Xia, Ping, Los Angeles, Ca
Yaeck, Samuel, Redlands, Ca
Yen, Chi, Rancho Cucamonga, Ca
Zacharia, Somy, Stevenson Ranch, Ca
Zaragoza, Mark, Diamond Bar, Ca
Zellin, Elizabeth, Helendale, Ca*
Zuno, Bertha, Los Angeles, Ca

Battista, Brittany, Golden, Co
Becker, Jill, Colorado Springs, Co*
Demarco, Carla, Monument, Co*
Gillean, Sharon, Grand Junction, Co
Homouda, Sara, Littleton, Co
Hoots, Loni, Lamar, Co
Izzi, Rene, Lakewood, Co
Jurgens, Diana, Northglenn, Co*
Keller, Stephanie, Thornton, Co*
Lemmon, Joseph, Denver, Co
Lindquist, Rosa, Denver, Co*
Robinett, Mike, Milliken, Co*
Rossback, Gina, Commerce City, Co*
Tracy, Karen, Arvada, Co*
Vu, Jennifer, Thornton, Co
White, Joe, Craig, Co*

Cooper, Christopher, Suffield, Ct*
Griffith, Kelly, Coventry, Ct*
Kamena, Lauren, New Britain, Ct*
Nozzolillo, Mark, Thompson, Ct*

## D

Arpino, Kelsi, Middletown, De
Brown, Kelsey, Bear, De
Das, Dilip, Wilmington, De
Frangia, Dimitra, Newark, De
Gray, Elizabeth, Newark, De
Heaney, Thomas, Smyrna, De
Hitchens, Kyle, Newark, De
Holbert, Valerie, Newark, De
Simpson, Samantha, New Castle, De
Svyatovets, Arina, Lewes, De
Thomas, Heather, Newark, De
Vega, Amy, Middletown, De
Watson, Samantha, Wilmington, De
Weber, Brian, Bear, De
Woloszyk, Rebecca, Wilmington, De

## F

Adams, Carolyn, Yulee, Fl
Baker, Clinton, Jacksonville, Fl
Baker, Kate, Jacksonville, Fl
Barrett, Tina, Saint Johns, Fl
Bathurst, Michael, Jacksonville, Fl
Baugh, Paula, Oviedo, Fl
Bennett, Tareika, Longwood, Fl
Birdwell, Glenn, Middleburg, Fl
Bouchard, Christine, Jacksonville Beach, Fl
Bradford, Crystal, Mount Dora, Fl*
Britt, Kaley, Winter Garden, Fl*
Burdges, Natasha, Casselberry, Fl
Camacho, Shelley, Lake Mary, Fl
Campbell, Elaine, Brevard, Fl*
Carr, Heather, Winter Park, Fl
Carrillo, Joanna, Winter Springs, Fl
Cartwright, Leah, Bartow, Fl
Ceballos, William, Fort Myers, Fl*
Chukwu, Simon, Orlando, Fl
Clavan, Jules, Pembroke Pines, Fl*
Davis, Elaine, Jacksonville, Fl
Deputy, Asya, Apopka, Fl
Dodd, Rachel, Jacksonville, Fl
Dorado, Maria, North Miami, Fl
Einhouse, Heather, Oviedo, Fl
Esquilin, Hernie, Altamonte Springs, Fl
Fischer, Carrie, Palm City, Fl*
Gagni, Greg, Jacksonville, Fl*
Gilliard, Marci, Chuluota, Fl
Grzeskowiak, Janaina, Deland, Fl
Harmon, Zach, Jacksonville, Fl
Harvey, Stacey, Orlando, Fl
Heath Wiggs, Stephanie, Winter Park, Fl
Herring, Julie, Gainesville, Fl*
Huynh, Dieu, North Palm Beach, Fl
Hyatt, Paula, Plantation, Fl*
Itani, Nadia, Jacksonville, Fl
Jarrett, Melton, Miami, Fl*
Julien, Odetta, Orlando, Fl
King, Shellee, Orlando, Fl
Krinsky, Kimberlee, Davie, Fl*
Kurthausen, Kelly, Orange City, Fl
Lauderman, Xylina, Jacksonville, Fl
Lonas, Audrey, Lake Helen, Fl
Lowry, Malcom, Melrose, Fl*
Mai, Nam, Jacksonville, Fl
Maritn, Joyce, Homosassa, Fl*
Marti, Matt, Saint Johns, Fl
McLendon, Katy, Jacksonville, Fl
Mosos, Luis, Loxahatchee, Fl*
Nelson, Sandy, Middleburg, Fl
Obas, Darlie, Pompano Beach, Fl
Orr, Vicki, Sarasota, Fl*
Oselett, Danita, Middleburg, Fl
Parks Nazario, Alexandra, Yulee, Fl
Patneau, Austin, Ponte Vedra Beach, Fl
Pruitt, Kristin, Altamonte Springs, Fl
Renelien, Jean, Lake Mary, Fl
Rescigno, Alicia, Oviedo, Fl
Rhodes, Lindsey, Winter Park, Fl
Rodriquez, Wilfredow, Altamonte Springs, Fl
Rohde, Anne-Marie, Sanderson, Fl
Romero A, Kleber, Miami, Fl*
Rowlette, Katie, Jacksonville, Fl
Rybak, Lisa, Stuart, Fl*
Schultz, Samantha, Oviedo, Fl
Scudder, Amanda, Oviedo, Fl
Shauan, Cindy, Bradenton, Fl*
Sosteri, Richard, Lutz, Fl*
St Onge, Lisa, Tampa, Fl
Stewart, Brittany, Atlantic Beach, Fl
Stift, Carolyn, Saint Johns, Fl
Strickland, Jan, Lawtey, Fl
Thomas, Alecia, Jacksonville, Fl
Thompson, Marilyn, Lakeland, Fl*
Thompson, Shayna, Altamonte Springs, Fl
Torres, Jenifer, Casselberry, Fl*
Velasquez, William, Lake Mary, Fl
White, Amy, Jacksonville, Fl
Wood, Kathleen, Wellington, Fl*
Young, Bernice, Altamonte Springs, Fl
Zhang, Wei, Orlando, Fl

## G

Abdi, Abdalla, Stone Mountain, Ga
Abdulhakim, Abdilatif, Tucker, Ga

Adams, Kayla, Evans, Ga
Ahmed, Keyse, Savannah, Ga
Ahmed, Zikra, Duluth, Ga
Alasmari, Ali, Atlanta, Ga
Alharthi, Hashim, Atlanta, Ga
Alsulayyim, Abdullah, Marietta, Ga
Benefield, Misty, Rome, Ga
Blackmon, Charolette, Augusta, Ga
Bodolosky, Mallory, Evans, Ga
Bold, George, Thomson, Ga
Boone, Tiffany, Augusta, Ga
Brown, Latoriya, Augusta, Ga
Buglione, Amanda, Morrow, Ga
Butts, Keandre, Covington, Ga
Byars, Crystal, Rome, Ga
Byrd, Amanda, Guyton, Ga
Cameron, Patrice, Stone Mountain, Ga
Capers, Julianne, Pooler, Ga
Cartier, Andrew, Richmond Hill, Ga
Charles, Mary, Decatur, Ga*
Clarence, Michael, Thomaston, Ga
Clark, April, Springfield, Ga
Clark, Nomazwe, Stone Mountain, Ga
Coates, Jr, Gregory, Columbus, Ga
Collins, Earlishia, Savannah, Ga
Craig, Theresa, Martinez, Ga
Daguisan, Guerline, Richmond Hill, Ga
Degroot, Nicholas, Savannah, Ga
Devoe, Shamari, Austell, Ga
Dewey, Doug, La Fayette, Ga*
Doolittle, Jo El, Martinez, Ga
Duarte, Maria, Rome, Ga
Ducasse, Delano, Duluth, Ga
Edge, Robert, Dudley, Ga*
Finney, Dareja, Atlanta, Ga
Forbes, Jermaine, Fayetteville, Ga*
Fountain, Brooke, Tiger, Ga
Garnier, Verinese, Savannah, Ga
Gebregiorgis, Andinet, Atlanta, Ga
Gorley, Catherine, Kennesaw, Ga
Groch, Shelly, Pooler, Ga
Hainley, Supinna, Pooler, Ga*
Hall, Autumn, Rome, Ga
Hamilton, Kelley, Harlem, Ga
Harris, Martina, Decatur, Ga
Hatfield, Wanda, Augusta, Ga*
Heald, Corey, Augusta, Ga
Helmes, Tiffany, Dalton, Ga
Holden, Heather, Adairsville, Ga
Hyman, Robin, Lawrenceville, Ga*
Jefferson, Suzan, Augusta, Ga
Jimenez, Jessica, Augusta, Ga
Jones, April, East Dublin, Ga*
Kashlan, Dana, Dunwoody, Ga
Keib, Erika, Savannah, Ga
Kenney, Ashhley, College Park, Ga
Ketchup, Chasney, Savannah, Ga
Leverett, Brittany, Appling, Ga
Lunde, Maria Regina, Tucker, Ga*
Mack, Arneesha, Savannah, Ga
Magnusson, Courtney, Rome, Ga
Mahmood, Rita, Augusta, Ga
Martinez, Whitney, Grovetown, Ga
McCain, Carie, Alpharetta, Ga*
McCauley, Patricia, Woodstock, Ga*
McGhee, Tashay, Atlanta, Ga
McKenzie, Shelby, Albany, Ga*
Mercado, Frances, Savannah, Ga
Messer, Christopher Brandon, Richmond Hill, Ga
Moreland, Tabresha, Griffin, Ga
Morton, Allen (Aj), Savannah, Ga
Nielsen, Lela, Martinez, Ga
Nunn, Kimberley, Marietta, Ga
Pace, Amy, Grovetown, Ga
Partadiharja, Rachman, Lawrenceville, Ga*
Patel, Heena, Savannah, Ga
Patel, Mihir, Lawrenciville, Ga*
Patel, Sanjna, Sandy Springs, Ga
Pelham, Stephanie, Augusta, Ga
Poole, Melissa, Calhoun, Ga
Pope, Niara, Covington, Ga
Pretzello, Heather, Thomson, Ga
Prince, David, Savannah, Ga
Queen, Scarlett, Adairsville, Ga
Rankel, Jennifer, Dallas, Ga
Rice, Kimberly, Elberton, Ga*
Rich, Bernadette, Augusta, Ga
Ricks, Rustan, Villa Rica, Ga*
Roberson, Tyler, Peachtree City, Ga
Rosier, Mary, Thomson, Ga
Sanchez, Leticia, Braselton, Ga
Sanders, Donna, Rome, Ga
Schepisi, Anthony, Ringgold, Ga*
Sconyers, Stacie, Appling, Ga
Scott, Tralissa, Hephzibah, Ga
Seigler, Audrey, Martinez, Ga
Shaddix, Jeri, Stockbridge, Ga
Sheffield, Amy, McDonough, Ga
Shirley, Jennifer, Rome, Ga
Shores, Paul, Atlanta, Ga
Sims, Stephanie, Covington, Ga*
Smith, Georgia, Hephzibah, Ga
Smith, Laquetta, Lawrenceville, Ga
Stanley, Denise, Fayetteville, Ga*
Steele, Summer, Augusta, Ga
Strausser, Franklin, Hephzibah, Ga
Sunbul, Fatemah, Atlanta, Ga
Swaim, Helen, Martinez, Ga
Tekie, Niat, Stone Mountain, Ga
Tesfu, Mahlet, Tucker, Ga
Thomas, Archaiela, Hinesville, Ga
Thomas, Omokayode, Lilburn, Ga
Truong, Phong, Stone Mountain, Ga
Turcin, Elizabeth, Lawrenceville, Ga
Umble, Chantale, Augusta, Ga
Wagner, Lindsay, Evans, Ga
Walker, Brandy, Rome, Ga
Ward, Lucky, Dalton, Ga
Watts, Melinda, Acworth, Ga*
Winter, Ryan, Peachtree City, Ga*
Wyatt, Denise, Macon, Ga*
Young, Courtney, Martinez, Ga
Zewdie, Yordanos, Savannah, Ga

## H

Agnos, Khristian, Honolulu, Hi
Equite, Osvaldo, Honolulu, Hi
Lee, Thomas, Honolulu, Hi
Matthews, Wallace, Honolulu, Hi

## I

Bailey, Brittni, Sioux City, Ia
Baker, Adam, Des Moines, Ia*
Boll, Dustin, Le Mars, Ia
Cale Steinbeck, Diane, Sioux City, Ia
Cuvillier, Rebecca, Keokuk, Ia
Dodson, Kelsey, Sioux City, Ia
Douglas, Margaret, Davenport, Ia*
Franks, Renae, Sioux City, Ia
Greg, John, Fort Madison, Ia
Hackenmiller, Rachel, Burlington, Ia
Hahn, Cindy, Le Mars, Ia
Heston, Colton, Ft Madison, Ia
Irizarry, Shawleen, Sioux City, Ia
Johnson, Angie, Sergeant Bluff, Ia
Johnson, Mitchell, Sioux City, Ia
Klemish, Shery, Sioux City, Ia
Loots, Laura, Danville, Ia
McClelland, Anika, Burlington, Ia
Metz, Michelle, Fort Madison, Ia
Ramirez, Eliana, Sioux City, Ia
Schlarbaum, Abby, Danville, Ia
Smith, Melissa, Sergeant Bluff, Ia
Snoozy, Angie, Le Mars, Ia
Starling, Barbara, Sioux City, Ia
Surratt, Lyonell, Sioux City, Ia
Thomas, Leann, Lime Springs, Ia*
Vigdal, Steve, Sioux City, Ia
Welcher, Alison, New London, Ia
Yoe, Susan, Keokuk, Ia

Cooperman, Mike, Boise, Id
Dacones, Ivy, Meridian, Id
Johnson, Laura, Pocatello, Id*
Looney, Jeri, Meridian, Id
Mathews, Gregor, Meridian, Id
Swanson, Jaimy, Caldwell, Id
Whaley, Bryan, Boise, Id

Arthurs, Janet, Orland Park, Il*
Benson, Phillip, Chicago, Il*
Bhakta, Bindi, Fairview Heights, Il*
Boll, Stephanie, Springfield, Il*
Buffard, Tabitha, West Peoria, Il
De Frates, Ernest, Springfield, Il*
Dean, Marcia, Winfield, Il*
Erickson, Linda, Rockford, Il*
George, Sanish, Des Plaines, Il*
Guest, Cindy, Hudson, Il*
Guevara, Roberto, Palos Heights, Il*
Kinka, Kathy, Winnebago, Il*
Koehne, Lisa, MacHesney Park, Il
Kohrmann, Toni, Germantown, Il*
Krekel, Nancy, Carthage, Il*
List, Tamera, Mason City, Il*
Malaran, John Paul, Peoria, Il*
Martinez, Christina, Melrose Park, Il*
McMillan, Sharon, Herrin, Il*
Mendenhall, Casey, Chicago, Il*
O'Keefe, Jocelyne M, Chicago, Il*
Ollendorf, Thomas, Wheaton, Il*
Peterson, Pamela, Lisle, Il*
Pollard, Wayne, Country Club Hills, Il
Prisco, Seth, Saint Charles, Il*
Pyles, Loretta, Belleville, Il*
Rapien, Debra, Glen Carbon, Il*
Richardson, Terrence, New Berlin, Il*
Rogers, Jessica, La Harpe, Il
Sapigao, Jay, Chicago, Il*
Schneck, Patricia, New Lenox, Il*
Schoenheider, Anne, Dunlap, Il*
Spector, Stephanie, Wilmette, Il*
Spicer, Rhonda, Rockford, Il
Stormer, Denise, Peoria, Il*
Sullivan, Sarah, Winfield, Il*
Tate-Turks, De Anna, Zion, Il*
Ternes, Maria, Oak Lawn, Il*
Walker, Wilton, Libertyville, Il
Wilson, David, Casey, Il*
Woods, Chrystal, Saint Joseph, Il
Wykle, Laura, Roselle, Il

Albaqshi, Yasmine, Indianapolis, In
Almoghalliq, Sara, Indianapolis, In
Amsler, Nathan, Indianapolis, In
Andrus, Gretchen, New Haven, In
Barker, Sheila, Osceola, In
Barnes, Jeremy, Bloomington, In
Bishop, Dwayne, Spencer, In*
Brooks, Joniece, Fishers, In
Buckrop, Anna, Camby, In
Cage, Leah, Indianapolis, In
Chu, Edward, Carmel, In
Dalton, Cheryl, West Baden Springs, In
Day, Jeffrey, Fishers, In
Decker, Sarah, Indianapolis, In
Deeg, Chelsea, Indianapolis, In

Delap, Randi, Indianapolis, In
Dibbern, Vickie, Indianapolis, In
Didion, Danielle, Greenwood, In
Drahy-Villasol, Celia, Noblesville, In
Eaton, Brian, Brownsburg, In
Eller, Jeffrey, Bloomington, In
Elliott, Charisse, Mooresville, In
Fitzpatrick, Tammy, Bloomington, In
Ford, Elizabeth, Nashville, In
France, Jaclyn, Indianapolis, In
Jackson (Pazarena), Amanda, Greenwood, In
James, Ellizabeth, Martinsville, In
John, James, Camby, In
Kirchner, Darla, Brazil, In*
Kubacki, Nicole, Greenwood, In
Landis, Alyssa, Indianapolis, In
Markus, Jodie, Carmel, In
McNealy, Todd, Columbus, In
Meise, Amanda, Indianapolis, In
Metz, Mark, Indianapolis, In
Myers, Lisa, Greenwood, In
Nicholson, Debra, Granger, In*
Odejide, Bolanle, Indianapolis, In
Petrotta, Elaine, Indianapolis, In
Reyes, Jessica, Indianapolis, In
Richey, Daniel, Greensburg, In
Sackley, David, Bloomington, In
Sargent, Chrstina, Springville, In
Schlitts, Amy, Indianapolis, In
Schwab, Benjamin, Indianapolis, In
Sherman, Jeanne, Indianapolis, In*
Smith, Erik, Indianapolis, In
Smith, Hollie, Anderson, In
Smith, Lindsey, Indianapolis, In
Smith, Tiffany, Indianapolis, In
Strunk, Jason, Greenwood, In
Taylor, Jordan, Fort Wayne, In*
Tennant II, Jonathan, Greenfield, In
Torres Gamble, Zuleika, Carmel, In
Ulrey, Casondra, Indianapolis, In
Uppal, Sundeep, Indianapolis, In
White, Jamy, Mooresville, In
Wiles, Meghan, Indianapolis, In
Wuestefeld, Troy, Batesville, In
Zhang, Yu, South Bend, In

## K

Alsallom, Yasser, Lawrence, Ks*
Davis, Tonya, Basehor, Ks
Hartman, Jenice, St Francis, Ks
Harvey, Lacey, Colby, Ks
Hellerud, Tim, Goodland, Ks
Hill, Kelsey, Baxter Springs, Ks
Huynh, Phuong, Kansas City, Ks
Jones, Kerri, Goodland, Ks
Manepalli, Joseph, Lenexa, Ks
Morris, Ryan, Goodland, Ks
Palmer, Brett, Atwood, Ks
Palmer, Roy, Goodland, Ks
Pryor, Chris, Baxter Springs, Ks
Puett, Jason, Olathe, Ks
Snethen, Sharla, Goodland, Ks
Warman, Scott, Atwood, Ks
Wilson, Zackary, Baxter Springs, Ks

Abner, Bobbi, East Bernstadt, Ky
Allen, Jennifer, London, Ky
Arthur, Brandy, London, Ky
Ashley, Karla, Orlando, Ky
Badouan, Regina, Louisville, Ky*
Ball, Matthew, London, Ky
Blackburn, Naomi, Jeffersontown, Ky*
Branton, Jill, Lexington, Ky*
Bruner, Susan, London, Ky
Bryant, Jorden, Corbin, Ky
Bryant, Keshia, Stearns, Ky
Bryant, Steffany, Mount Vernon, Ky
Castle, Shawn, London, Ky
Claxton, Arnold, Corbin, Ky
Collett, Dallas, London, Ky
Cordell, Louie, Strunk, Ky
Cornelius, Ruth Ann, East Bernstadt, Ky*
Cox, Lee, McKee, Ky
Dawson, Fatima, Louisville, Ky*
Faulkner, Danny, London, Ky
Fouts, Robert, London, Ky
Gregory, Casey, Monticello, Ky
Hall, Jessica, Mount Vernon, Ky
Hancock, Ashley, Monticello, Ky
Hargis, Dagney, Henderson, Ky*
Hobbs, Nathena, London, Ky
Jenkins, Kendall, Corbin, Ky
Jenkins, Stephanie, Georgetown, Ky
Jones, Beverly, Mount Vernon, Ky
Jones, Curtis, London, Ky
Kirby, Kelly, Mount Vernon, Ky
Leroy, Amanda, Lexington, Ky*
McDonner, Evie, Lexington, Ky*
Messer, Jeremy, Corbin, Ky
Mobley, Kelly, Berea, Ky
Moore, Julia, McKee, Ky
Osborne, Kenneth, London, Ky
Parrigan, Amanda, Morgantown, Ky*
Pennington, Valerie, Williamsburg, Ky
Ridner, Shelly, Parkers Lake, Ky
Silvers, Britney, Somerset, Ky
Steely, Jeff, London, Ky
Tanner, Laura, Bowling Green, Ky*
Van, Adam, Corbin, Ky
Wilson, Erica, Eubank, Ky

## L

Arevalo, Samantha, Metairie, La
Ashley, Chantez, Shreveport, La*
Boudreaux, Caley, Marrero, La
Brock, Eddie Mitchell, Mandeville, La*
Byrnes, Theresa, Covington, La
Edwards, Aisha, New Orleans, La
Estes, Chastity, Marrero, La
Forrest, Paula, Natchitoches, La*
Fredieu, Elizabeth, Prairieville, La
Hoang, Stephanie, Gretna, La
Parra, Jenna, Houma, La*
Placide, Ashley, La Place, La
Roberts, Dale, West Monroe, La*
Rochon, Blanche, Rayne, La

## M

Adams, Ann, Southbridge, Ma
Bennett, Jeffrey, Beverly, Ma
Bisaccio, Ann Marie, Woburn, Ma
Cabral, Sonedis, Lynn, Ma
Carbonneau, Tammy, Dracut, Ma*
Cavens, Megan, Wilmington, Ma*
Collins, Tom, Springfield, Ma*
Duffy, Daniel, Foxborough, Ma*
Elizabeth, Kwapien, Westfield, Ma*
Ellis, Lauren, Revere, Ma
Flink, Robert, Rutland, Ma*
Grunst, Daniel, Danvers, Ma
Gutierrez Jr, Alberto, Athol, Ma*
Heller, Liliane, Great Barrington, Ma*
Hogan, Judith, Marlborough, Ma*
Jansson, Jeffrey, Charlton, Ma*
Madigan, Maureen, Rockport, Ma*
Mantha, Jennifer, Charlton, Ma*
Mao, Pete, Lynn, Ma
Marsters, Louise, Haverhill, Ma*
Matthew, Heidi, Boxboro, Ma*
Maxwell, Victoria, Arlington, Ma
McNulty, Francis, Lynn, Ma
Moon, Tiffany, North Andover, Ma*
Morales Reyes, Cynthia, Peabody, Ma*
Moriarty, Karen, Haverhill, Ma*
Mustone, Andrew, Wakefield, Ma
Nortelus, Henriette, Somerville, Ma
Nowland, Lu Ann, Taunton, Ma*
Nurse, Vivian, Auburn, Ma*
O'Neill, Karen, Wakefield, Ma*
Panagiotopoulos, Kathleen, Sagamore Beach, Ma*
Robinson, Desirae, Springfield, Ma
Romain, Fred, Marlborough, Ma*
Romano, Beverly, Bradford, Ma*
Sheltra, Shannon, West Newbury, Ma*
Ssembito, Kara, Everett, Ma
Stiefel, David, Boston, Ma*
Sullivan, Alexandra, Gloucester, Ma
Swift, Jaime, Chelmsford, Ma*
Tardanico, Michaela, Peabody, Ma
Teague, Deborah, Merrimac, Ma*
Thelismond, Jesula, Mattapan, Ma
Warford, Suzan, Dracut, Ma*
Wilson, Alexandra, Bedford, Ma
Wojcik, Vincent, Woburn, Ma*
Wood, Jessica, Leicester, Ma*

Amoakohene, Ama, Frederick, Md
Ballard, Craig, Hyattsville, Md*
Bangura, Mbalu, Beltsville, Md
Berluche, Reginald, Hyattsville, Md
Cole, Bridget, Cumberland, Md
Degreenia, Gina, Severna Park, Md*
Dos Santos, Karoline, Dundalk, Md*
Durst, Kelsey, Cumberland, Md
Durst, Krystal, Cumberland, Md
Evans, Tristan, Cumberland, Md
Gelles, Katelyn, Keedysville, Md
Gray, Emelia, Randallstown, Md*
Healy, Catherine, Eldersburg, Md*
Howard, Miatta, Laurel, Md
Huang, Xiao, Cambridge, Md*
Iden, Tesa, Hancock, Md
Jalloh, Assiatu, Clinton, Md
James, Sharon, Baltimore, Md*
Kiflom, Nardos, Rockville, Md
Lawson, Daniele, Warwick, Md
Lord Wilkinson, Cynthia, Germantown, Md*
Maduforo, Christopher, Riverdale, Md
Mishow, Margery, Cumberland, Md
Mubasher, Seemin, Elkridge, Md*
Preston, Charity, Barton, Md
Sandler, Sonja, Frederick, Md
Schild, Michelle, Churchton, Md*
Seid, Jamila, Bladensburg, Md
Shrout, Tracey, Cumberland, Md
Slowe, Amanda, Elkton, Md
Speir, Alex, Frostburg, Md
Warnick, Justin, Lonaconing, Md
Watanabe, Ikuko, Frederick, Md*
Zewde, Makda, Silver Spring, Md

Ahmed, Maksud, Lewiston, Me
Alexander, Ernie, South Portland, Me
Blondi, Mike, York Beach, Me
Clark, Kathaleen, Cape Elizabeth, Me
Dickinson, Alex, Boothbay, Me
Du Bay, Robin, Blue Hill, Me*
Farrow, Rachel, Steep Falls, Me
Gaylord, James, Portland, Me
Green, David, Portland, Me
Hill, Jason, South Portland, Me
Huntington, Jonathan, Brunswick, Me
Johnson, Kate, Portland, Me
Lamunyon, Jessica, Portland, Me
Lawford, Jessie, Gorham, Me

Lessard, Sara, Wells, Me
Miller, Cathy, Berwick, Me*
Ordway, Laura, Yarmouth, Me
Ramsay, Barbara, Bath, Me
Salamone, Chris, Saco, Me
Whitmore, Billie, Wiscasset, Me
Young, Caleb, Saco, Me
Young, Deborah, Scarborough, Me

Abroo, Daliyeh, Warren, Mi
Agius, Lola, Lincoln Park, Mi
Beauvais, John, Sterling Heights, Mi
Bommarito, Stephanie, Macomb, Mi
Bonacorsi, Carrie, Macomb, Mi
Breithaupt, Adam, Clinton Twp, Mi
Brodzik, Alexandria, Warren, Mi
Brown, Rosalie, Saint Clair Shores, Mi
Cage, Dedrah, Sterling Heights, Mi
Cole, Alexanderia, Sterling Heights, Mi
Deason, Heidi, Portage, Mi*
Denherder, Rachel, Rockford, Mi*
Derieu, Valarie, Chesterfield, Mi
Drolshagen, Candie, Chesterfield, Mi
Drouin, Alek, Saint Clair Shores, Mi
Eggleton, Shannon, Eastpointe, Mi
Esselink, Kristin, Macomb, Mi
Foster, Shannon, Clinton Township, Mi
Gabow, Ashley, Saint Clair Shores, Mi
Gauss, Curtis, Warren, Mi
Gekiere, Erika, Ortonville, Mi*
Giles, Matthew, Warren, Mi
Glass, Patricia, Oak Park, Mi*
Gupta, Gupta, Sterling Heights, Mi
Hankins, Wendy, Washington, Mi
Heinz, Anne, Bay City, Mi*
Jackson, Johnny, Detroit, Mi
John, Georgy, Shelby Township, Mi
Jones Croom, Sandy, Detroit, Mi
Kaur, Harleen, Sterling Heights, Mi
Kekic, Zlata, Sterling Heights, Mi
Keqaj, Emiljana, Macomb, Mi
Kerr, Carrie, Sterling Heights, Mi
Kimbrough, Adrienne, Chesterfield, Mi
Krall, Kimberly, Harrison Township, Mi
Kudelski, Emily, Romeo, Mi
Lyijynen, Melissa, Shelby Twp, Mi
Markowski, Steven, Macomb, Mi
Mathai, Pinto, Roseville, Mi
McGowan, Janay, Clinton Township, Mi
Mendlewski, April, Macomb, Mi
Midgett, Melanie, Pontiac, Mi*
Moore, Elizabeth, Spring Lake, Mi
Musial, Kimberly, New Baltimore, Mi
Myers, Jacob, Galesburg, Mi*
Nichols, Robert, Shelby Twp, Mi
Osborn, Scott, Saint Clair Shores, Mi
Paladino, Mary, Clinton Township, Mi
Parks, Kenyetta, Detroit, Mi
Paton, Linda, Harrison Twp, Mi*
Percy Elms, Christien, Sterling Heights, Mi*
Pfeiffer, Jennifer, Roseville, Mi
Pyne, Carol, Plainwell, Mi
Quiles, James, Shelby Twp, Mi
Renaud, Jillian, Clinton Township, Mi
Renaud, Lyndyflor, Warren, Mi
Riehle, Janet, Warren, Mi
Roskelly, Lori, Macomb, Mi
Ross, Denise, Clinton Township, Mi
Roti, Victoria, Macomb, Mi
Sanchez, Margaret, Waterford, Mi
Savage, Kathleen, Imlay City, Mi
Silmi, Jessica, Allen Park, Mi
Skelly, Wendy, Sterling Heights, Mi
Smith, Andrea, New Haven, Mi
Soper, Holly, Clinton Township, Mi
Spencer, Kenneth, Warren, Mi
Stanley, Theresa, Sterling Heights, Mi
Stein, Billiejo, Warren, Mi
Stojcevska, Svetlana, Macomb, Mi
Strawser, Maryanne, Flushing, Mi*
Symons, Jo-Ellen, Mount Clemens, Mi
Timarac, Elizabeth, Clinton Township, Mi
Trzin, Michelle, Clinton Twp, Mi
Uhrick, Kelly, Macomb, Mi
Vang, Jennifer, Warren, Mi
Walma, Cynthia, Wyoming, Mi*
Watson, Quentin, Washington, Mi
White, Alisha, Sterling Heights, Mi
Woodward, Brandon, Clinton Twp, Mi
Woolman, Kalee, Center Line, Mi
Xhialli, Elda, Macomb, Mi
Yatooma, Andy, Shelby Township, Mi

Churchill, Tara, Rochester, Mn*
Gierok, Jim, Zumbro Falls, Mn*
Matzke, Nanette, Rollingstone, Mn*
Trocke Fowler, Cheryl, Fridley, Mn*
Von Arx, Georgia, Byron, Mn*

Akers, Jenny, Fulton, Mo*
Ashton, Fredric, Rocheport, Mo*
Baclian, Joseph, Nixa, Mo
Bean, Crystal, Bakersfield, Mo
Beck, Joan (Liz), Bakersfield, Mo
Blair, Dustin, Springfield, Mo
Boak, Stephen, Camdenton, Mo
Bolinger, Haley, Joplin, Mo
Brown, Janna, Springfield, Mo*
Butts, Levi, Joplin, Mo
Carpenter, Chance, Nixa, Mo
Claudio, Claudia, Saint Louis, Mo*
Cloud, Clint, Joplin, Mo
Conner, Heather, Springfield, Mo
Costello, Jamie, Springfield, Mo
Delagardelle, Shelby, Joplin, Mo
Dodd, Robyn, Springfield, Mo
Ewing, Casey, Oldfield, Mo
Haper, Brittany, Duenweg, Mo
Hill, Britany, Springfield, Mo
Hunt, Aaron, Duenweg, Mo
Jacobs, Jonathan, Willard, Mo
Karnes, Craig, Springfield, Mo
Knetzer, Daryl, Republic, Mo
Lyckman, Tara, Carthage, Mo
Maggard, Dewayne, Jasper, Mo
McCracken, Jamie, Webb City, Mo
Mertens, Adysen, Carl Junction, Mo
Monroe, Alyssa, Joplin, Mo
Moritz, Meredith, Carl Junction, Mo
Myrick, Tonya, Nixa, Mo
O'Connell, Sean, Springfield, Mo
Oconnor, Michael, Republic, Mo
Ogle, Ivy, Jasper, Mo
Owens, Ryan, Saint Louis, Mo
Phillips, Heather, Carthage, Mo
Pope, Stephanie, Springfield, Mo
Proctor, Katherine, Anderson, Mo
Ragains, Brianna, Joplin, Mo
Richards, Amy, Springfield, Mo
Semple, Jason, Springfield, Mo
Stevrson, Meggan, Carthage, Mo
Taylor, Juanita, Saint Louis, Mo*
Teeter, Jessica, Revere, Mo
Thompson, Kasie, Neosho, Mo
Wallen, Cody, Clever, Mo
Weibel, Adonia, Carl Junction, Mo
Witthaus, Kendra, McGirk, Mo*
Woods, Whitney, Branson, Mo

Arinder, Steve, Pachuta, Ms*
Belt, Madora, Brandon, Ms
Boarden, Darrell, Ridgeland, Ms*
Bolden, Anjenette, Ridgeland, Ms
Book, Frances, Yazoo City, Ms
Brady, Makeya, Clarksdale, Ms
Brewer, Roger, Brandon, Ms
Bruce, Jeanette, Booneville, Ms
Bruff, Michelle, Brandon, Ms
Chambers, Casey, Baldwyn, Ms
Clark, Charles, Jackson, Ms
Cohran, Chris, Morton, Ms
Collins, Lesia, Sumrall, Ms*
Coyt, Erwin, Byram, Ms
Dean, Adrina, Tchula, Ms
Ealy, Lakrystal, Canton, Ms
Edwards, Etta, Hattiesburg, Ms*
Edwards, Lindsay, Brandon, Ms
English, Caleb, Myrtle, Ms
Errington, Cory, Brandon, Ms
Evans, Lillie, Brandon, Ms
Farmer, Shinerica, Coldwater, Ms
Finnie, Jennifer, Nettleton, Ms*
Fleming, Holly, Saltillo, Ms
Floyd, Marlon, Corinth, Ms
Furrh, Rebecca, Madison, Ms*
Gales, Jade, Byram, Ms
Gales, Leah, Greenville, Ms
Garrett, Bruce, Flora, Ms
Griffin, Kierston, Byram, Ms*
Hale, Shauna, Pascagoula, Ms*
Hannah, April, Indianola, Ms
Harris, Dalton, New Albany, Ms
Haynie, Amanda, New Albany, Ms
Hughes, Susan, Pearl, Ms
Jeannette, Brian, Pearl, Ms
Johnson Jr, Clarence, Greenville, Ms*
Joseph, Lisa, McComb, Ms*
King, Sherry, Summit, Ms
Latham, Cosslen, Southaven, Ms
Lewis, Brenda, Mantachie, Ms*
Marcy, James, Tupelo, Ms
McCoy, Amber, Greenville, Ms
McDaniel, Paula, Sumrall, Ms*
McNeese, Katherine, Waynesboro, Ms*
McVey, Nathan, Booneville, Ms*
Mitchell, Kelsey, Vicksburg, Ms
Nowell, Ashley, Clinton, Ms
Parson, Kharion, Vicksburg, Ms
Payne, Ledexter, Clarksdale, Ms
Penry Moss, Mary, Jackson, Ms*
Perkins, Libby, Marks, Ms
Pierce, Pamela, Columbia, Ms*
Price, Jamie, Corinth, Ms
Ramos, Jessica, Richland, Ms
Reed, Kayla, Waterford, Ms
Rhodes, Amanda, Brandon, Ms
Ricks, Alan, Booneville, Ms
Roberts, Stephanie, Terry, Ms
Rodgers, Christy, Rome, Ms
Sanders, Brittney, Greenville, Ms
Standifer, Zakiya, Cleveland, Ms
Starks, Rekeja, Greenwood, Ms
Stutts, Daniel, Marietta, Ms
Thomas, Christopher, Jackson, Ms
Thompson, Alesha, Jackson, Ms
Touchstone, Katie, Laurel, Ms*
Tucker, Tiffany, Corinth, Ms
Turner, Casey, Carrollton, Ms
Washington, Stormee, Clarksdale, Ms
Woullard, Linet, Hattiesburg, Ms*

Biggins, Michael, Seeley Lake, Mt
Blackburn, Daniel, Libby, Mt
Boyd, Janey, Missoula, Mt
Casaray, Amanda, Missoula, Mt
Chaffey, Tamara, Missoula, Mt
Clay, Patrick, Missoula, Mt
Fricke, Mark, Missoula, Mt
Gaugler, Sharrie, Billings, Mt*
Geary, Hugh, Miles City, Mt
Hall, Fred, Missoula, Mt

Hotchkiss, Kristen, Lolo, Mt
Jensen, John, Missoula, Mt
Jones, Rebecca, Missoula, Mt
Labrel, Marnee, Missoula, Mt
Luce, Kayla, Missoula, Mt
Mickelson, Dennis, Missoula, Mt
Nickol, Shelah, Missoula, Mt
Peacock, Sarah, Missoula, Mt
Reisinger, David, Missoula, Mt
Russo, Fred, Missoula, Mt
Selwyn, Jesse, Florence, Mt
Smith, William, Missoula, Mt
Sriraman, Sabine, Missoula, Mt
Stauffer, Robert, Great Falls, Mt*
Steinberg, Michael, Missoula, Mt
Urdahl, Leah Urdahl, Missoula, Mt
Vanboxel, Amber, Missoula, Mt
Walton, Brady, Missoula, Mt
Wilson, Tara, Missoula, Mt

## N

Adkins, Robin, Mooresville, NC
Alexander, Kayte, Canton, NC
Allman, Michelle, Matthews, NC
Baker, Alesha, Charlotte, NC
Barfield, Season, Albemarle, NC
Barrow, Katelyn, Snow Hill, NC
Barseghyan, Lilit, Albemarle, NC
Baucom, Benton, Albemarle, NC
Belcher, Peggy, Morganton, NC
Bennes, Marie, Denver, NC*
Berti, Christi, Fayetteville, NC*
Blakemore, Ashley, Ellenboro, NC
Blaylock, Brent, Waynesville, NC
Bletsas, Ashley, Rocky Mount, NC
Bolens, Justin, Charlotte, NC
Bolick, Ashley, Franklin, NC
Bolick, Jeremy, Maiden, NC
Brabson, Toni, Franklin, NC
Braddy, Heather, Sims, NC*
Bradley, Lisa, Sylva, NC
Bridgeman, Timothy, Hickory, NC
Bruner, Jessica, Maiden, NC
Burnette, Gail, Mt Pleasant, NC*
Burris, Amy, Concord, NC*
Burris, Jessica, Albemarle, NC
Cabe, Jessica, Sylva, NC
Caggiano, Dorithy, Concord, NC
Caldwell, Kimberly, Charlotte, NC
Cannon, Natasha, La Grange, NC*
Chandler, Lauren, Denver, NC
Connor, Harley, Indian Trail, NC
Culp, Amy, Albemarle, NC
Davis, Kelvin, Greenville, NC*
Degiosio, Robert, Kinston, NC
Di Nunzio, Susan, Raleigh, NC*
Dixon, Catrina, Albemarle, NC
Dixon, Lakisha, Newton, NC
Downs, Pansy, Taylorsville, NC
Duncan, Shawn, Charlotte, NC
Edwards, Lauren, Winterville, NC
Exon, Paul, Hickory, NC
Ferguson, Mary, Clyde, NC
Fisher, Carl, Hendersonville, NC
Fouts, Celeste, Mooresville, NC
Francois, Stanley, Monroe, NC
Furr, Ashley, Albemarle, NC
Gilliam, Gregory, Louisburg, NC*
Gonzalez, Tabitha, Ayden, NC
Green, Ryan, Lumberton, NC
Greene, Angela, Albemarle, NC
Greenway, Gary, Ayden, NC
Griffin, Leslie, Lumberton, NC
Hagerman, Robert, Davidson, NC
Haigler, Shavon, Charlotte, NC
Hamilton, Danny, Greenville, NC*
Hanley, Joanne, Greenville, NC
Harris, Benessa, Wilson, NC
Harris, Luv, Fountain, NC
Harris, Tyler, Albemarle, NC
Head, Nathalie, Canton, NC
Helton, Ashley, Lenoir, NC
Hensen, Daniel, Asheville, NC
Hoerr, Jill, Statesville, NC
Hudson, Addie Maiya, Wilson, NC*
Hudson, Miranda, Greenville, NC
Hults, Kimberly, Sherrills Ford, NC
Ivey, Angela, Wilmington, NC*
Johnson, Amber, Clemmons, NC*
Kadija, Damir, Raleigh, NC
Kinley, Karen, Albemarle, NC
Lagamba, Christopher, Albemarle, NC
Lambert, Amber, Albemarle, NC
Lambert, Vanessa, Bryson City, NC*
Lehman, Katherine, Greenville, NC
Lemire, Joseph, Balsam, NC
Lister, Jennifer, Charlotte, NC
Locklear, Brittany, Rowland, NC
Lucas, Anita, Pittsboro, NC
Lynch, Deborah, Albemarle, NC
Manley, Stacey, Charlotte, NC
Miller, Benjamin, Asheville, NC
Moody, Trent, Indian Trail, NC
Morgan, Ryan, Sylva, NC
Mull, Leisa, Hickory, NC
Murensky, Phillip, Charlotte, NC
Murray, Kimberly, Rockwell, NC*
Nines, Allison, Castalia, NC
Owen, Laura, Canton, NC
Patel, Shraddha, Matthews, NC
Pearce, Brittany, Greenville, NC
Pearson, Amanda, Kings Mountain, NC
Perez, Jose, Winston Salem, NC
Phoebus, Frances, Waynesville, NC
Poplin, Kathryn, Albemarle, NC
Purdie, Ahkalamesha, Greenville, NC
Rabara, Poojaben, Mount Holly, NC
Reid, Harold, Huntersville, NC
Robertson, Toshia, Albemarle, NC
Rogers, Shana, Fayetteville, NC
Roman, Raquel, Charlotte, NC
Rose, Mallory, Greenville, NC
Sales, Tawana, Greenville, NC
Schaefer, Denise, Clemmons, NC*
Schark, Candace, St Pauls, NC
Schiavon, Mariana, Albemarle, NC
Sides, Candace, Locust, NC*
Sink, Joy, Clemmons, NC*
Smith, Susan, Greenville, NC*
Somers, Hillary, Albemarle, NC
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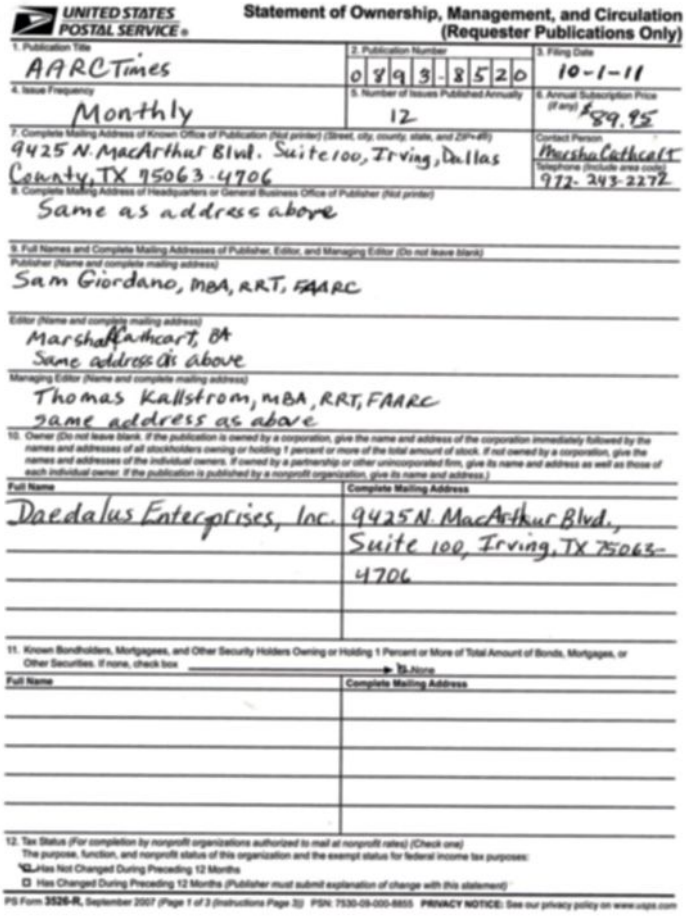

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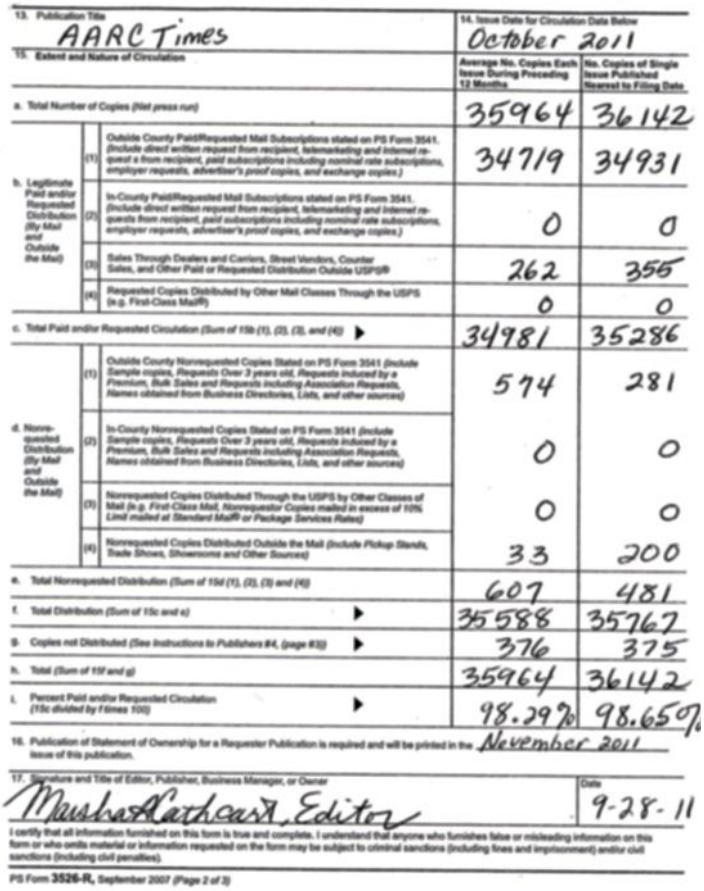

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# Classifieds

ADVERTISING SECTION

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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 November 24. 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

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For Recruitment Display Ad Rates, go to http://www.aarc.org/marketplace/media_kit/recruitment.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

# Calendar of Events

## AARC & State Society Programs

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

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

**October 27**
Newark, DE
18th Annual Trends in Respiratory Care Conference
Contact John Emberger at (302) 733-3565 or www.delawarelung.org

**November 4**
DRIVE4COPD
Great American Screen Off
Contact AARC, (972) 243-2272, www.aarc.org, or www.drive4copd.com

**November 4**
Tampa, FL
Pre-Congress Course — Hospital Readmissions: The Global Impact on Respiratory Therapy
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

**November 4**
Tampa, FL
Pre-Congress Course — Mechanical Ventilation 2011
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

**November 5–8**
Tampa, FL
AARC Congress 2011
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

## Other Meetings

November 16
World COPD Day
Contact GOLD at www.goldcopd.org

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

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

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