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AARC Strategic Objectives

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

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

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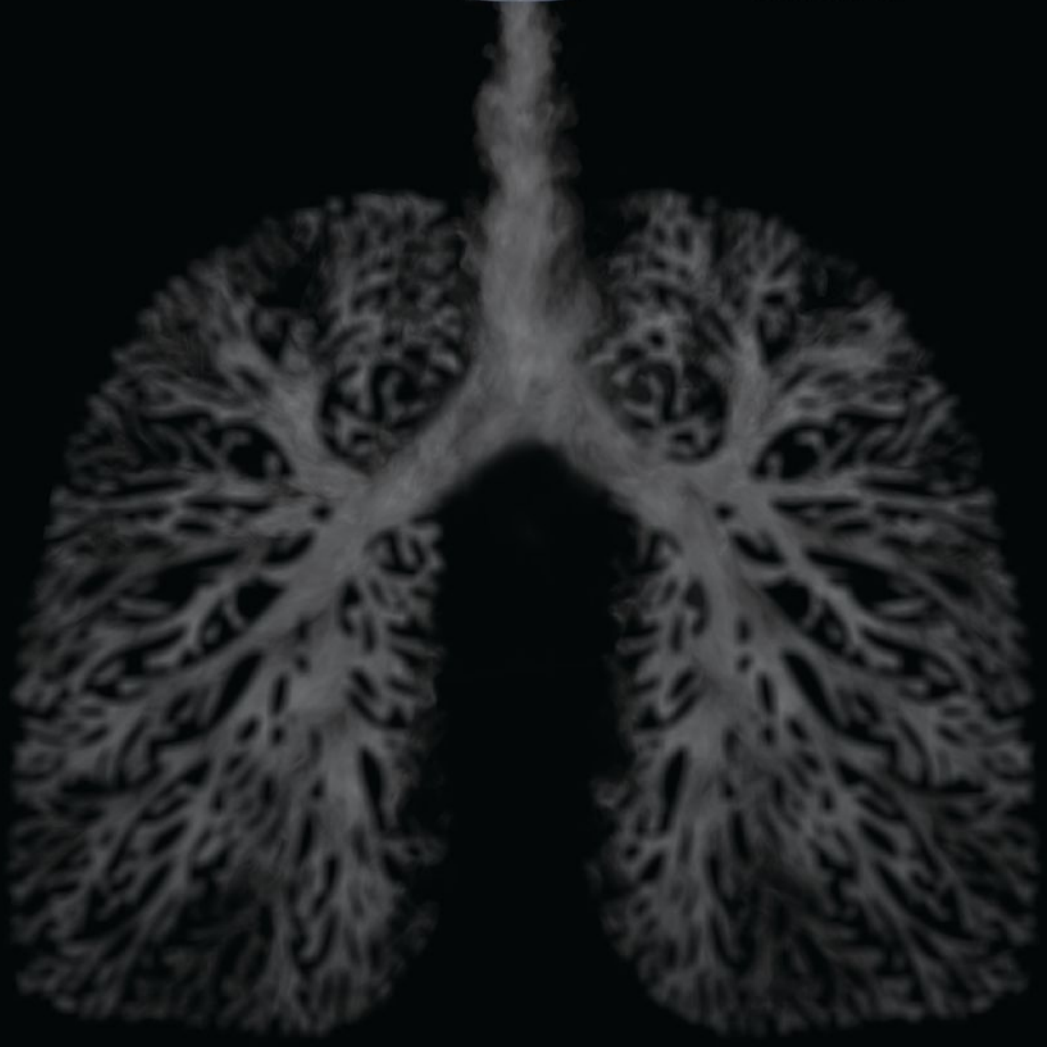

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Chronic Disease Manager

Pediatric Asthma Disease Management

by Robert C. Cohn, MD, FAARC

Jake is a three-year-old who attends day care and coughs on a daily basis when he plays. Blake is a 10-year-old who frequently misses school because of shortness of breath. Elise is a 16-year-old who has had cough and wheezing since the age of four. She uses albuterol four times per week and has nighttime awakenings from cough five times per month.

Do these children have asthma? If so, how severe is it, what is the outpatient management approach, and what is the role of the respiratory therapist in their care?

Making the diagnosis

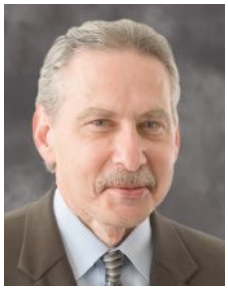
More than 32 million people in the United States have been diagnosed with asthma at some point in their lifetime, and 12 million suffer from asthma attacks annually. While asthma can almost always be successfully managed, it can still be fatal in some cases.

Childhood asthma affects between 3–7% of U.S. children, which translates to 7 million American children with the condition. Asthma is the No. 1 chronic condition causing children to be absent from school and is the most common cause of emergency room visits for children from birth to 14, as well as pediatric hospitalizations in the 5–14 year-old age group. Well over 200,000 hospitalizations, along with 13 million physician visits per year, are attributed to asthma.[1,2]

Despite these statistics, asthma is frequently under-diagnosed in children. Clinicians should suspect the diagnosis of asthma when there is a history of recurrent symptoms consistent with asthma — such as cough, wheeze, shortness of breath, and scratchy throat. Asthma should also be considered if symptoms are made worse by noticeable triggers, if they improve after a bronchodilator treatment, or if they occur or worsen at night. However, it is also important to consider and exclude other diagnoses that can mimic asthma — such as airway abnormalities, gastroesophageal reflux disease, foreign body aspiration, and cystic fibrosis.

Risk factors for children from birth to age four include either a parental history of asthma, a physician diagnosis of atopic dermatitis, or sensitivity to aeroallergens. Risk is also increased if a young child has two of the following: evidence of food sensitivity, 4% or more eosinophils in the blood, or wheezing apart from colds. Other childhood risk factors include exposure to tobacco smoke, living in an urban area with increased exposure to air pollution, low birthweight, obesity, rhinitis, pneumonia, or other severe lower respiratory tract infections, inflamed sinuses, and being male.[3]

about the author...



Robert C. Cohn, MD, FAARC, is a physician with Mercy Pediatric Pulmonary Specialists in Moreland Hills, OH.

Severity and control

Once the diagnosis is made, it is important to clarify the severity and manage asthma control. According to the "Expert Panel Report 3" (EPR 3) issued by the National Asthma Education and Prevention Program, the key elements of assessment and monitoring are severity and control and responsiveness to treatment. Severity is determined when first initiating therapy. Control is emphasized for monitoring and adjusting therapy.

The goals of the EPR 3 are to reduce asthma impairment and associated risks.[4] We can reduce impairment by preventing chronic and troublesome symptoms and minimizing the use of inhaled short-acting beta agonists (SABAs). Our goals should be to maintain the patient's activity levels and ensure pulmonary function remains as normal as possible. Meeting patients' and families' expectations and satisfaction with asthma care is critical as well.

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Table 1. Symptom Class: Current Clinical Features

Severity	Features
Intermittent	Symptoms (wheeze, cough, dyspnea) < or = 2 times a week Brief exacerbations Nighttime asthma symptoms < or = 2 times a month Asymptomatic between exacerbations
Mild Persistent	Symptoms > 2 times a week but < 1 time per day Exacerbations may affect activity and sleep Nighttime symptoms > 2 times a month but < 1 time per week
Moderate Persistent	Symptoms daily Exacerbations > or = 2 times a week; may last days and affect activity Nighttime symptoms >1 time a week
Severe Persistent	Continuous symptoms Frequent exacerbations Frequent nighttime symptoms Physical activities limited by asthma symptoms

From: National Heart, Lung, and Blood Institute. National Asthma Education and Prevention Program, Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. See Reference 4.

Risk is reduced by working to prevent recurrent exacerbations as well as progressive loss of lung function and minimizing the need for ER visits and hospitalizations. This should be done by providing optimal pharmacotherapy with minimal or no adverse effects. Before initiating treatment, however, asthma severity must be determined. Classifying asthma severity is as easy as asking these three questions:

1. How many days per week does your child have daytime symptoms?
2. How many days per month does your child awaken at night with asthma symptoms?
3. What is your child's forced expiratory volume in first second (FEV_1)/peak flow?

Asthma severity can then be classified as either intermittent, mild persistent, moderate persistent, or severe persistent. Table 1 outlines the symptoms, exacerbations, and nighttime symptoms that can be expected at each level.

Once a child is on medications, asthma control can be determined. Table 2 lists the parameters that define well-controlled asthma. One of the most important determinates of control is the frequency of SABA use; albuterol is a reliever medication and should be used only when a patient is symptomatic. The more albuterol is needed, the poorer the asthma control. Standardized questionnaires for assessment and monitoring can be used to evaluate the degree of current asthma control as well. Examples include the Asthma Control Test, Asthma Therapy Assessment Questionnaire, and Asthma Control Score.

Medications and assessment

A stepwise approach for the selection of asthma controller medications is illustrated in Table 3. Each of the six steps includes a preferred and alternative treatment strategy to allow the therapy to be customized to the specific needs of the patient.

Assessment of asthma control is recommended at one- to six-month intervals. When assessing your patient's ability to control his or her asthma, keep these four components of asthma management in mind: objective measurement, pharmacologic logic, environmental control, and patient education.

Respiratory therapists should advocate for spirometry in children five years of age and older. This simple test can provide an objective measurement of severity and control. Usually, spirometry is attempted at initial assessment, after treatment is initiated, when there appears to be a loss of asthma control, and at least every one to two years. Once spirometry has been measured for assessment, peak flow can be used to monitor con-

Table 2. Is Asthma Well Controlled?

1. Daytime symptoms < or = 2 days per week and
2. Awakens at night from asthma < or = 1 time per month and
3. No activity limitation and
4. Uses SABA for symptom control < or = 2 days per week and
5. < or = 1 burst of oral corticosteroids per year
6. FEV_1 > or = 80% predicted
7. FEV_1/FVC > or = 85% (5–19 years of age)

Based on: California Asthma Public Health Initiative, September 2008.

Table 3. Stepwise Approach for Managing Asthma (Step up or down depending upon control)

Step	Severity	Treatment
1	Intermittent	SABA as-needed
2	Mild Persistent	Preferred: low-dose inhaled corticosteroid (ICS) Alternative: leukotriene receptor antagonist (LTRA), cromolyn, nedocromil, or theophylline
3	Moderate Persistent	Preferred: medium dose ICS or low-dose ICS plus long-acting beta agonist (LABA) Alternative: low-dose ICS plus LTRA (or theophylline or zileuton)
4	Moderate Persistent	Preferred: medium dose ICS plus LABA Alternative: medium dose ICS plus LTRA (or theophylline or zileuton)
5	Severe Persistent	Preferred: high dose ICS plus LABA (and consider omalizumab) Alternative: high dose ICS plus LTRA
6	Severe Persistent	Preferred: high dose ICS plus LABA plus oral corticosteroids (and consider omalizumab)

trol. Spirometry should be performed first so that peak flow zones can be determined for an individual patient.

Underlying airway inflammation in asthma should be treated with controller medications, and bronchodilators/bursts of oral steroids can be used to relieve acute obstruction. Many asthma patients will also respond to the removal of irritants or allergens from their environment, and RTs can work with the patient to determine the best way to limit or eliminate this exposure. Respiratory therapists also have an important role to play in educating the patient and family about self-management skills, empowering the patient and family to take control of the child's asthma, and providing the family with an action plan they can use to determine what to do when asthma symptoms change or worsen.

Four more questions

What can you do if your patient remains uncontrolled despite your best efforts? If control is difficult to attain, ask yourself these four questions:

1. Is it asthma? Remember: "all that wheezes is not asthma." Could the symptoms be due to an anatomic lesion, vascular ring, foreign body, or other medical condition such as cystic fibrosis instead?
2. How well is the patient adhering to his medication, and is he using correct technique?
3. Did your patient run out of medication and not realize it? (Metered-dose inhalers without dose counters can activate propellant with no active medication.)
4. Could there be a continual trigger exposure (environmental, occupational, or dietary) that has not been recognized?

If you've addressed all of these issues and the patient remains uncontrolled, advocate for a second opinion from a specialist if necessary. With all of the knowledge and medications we have in our asthma arsenal today, there is no reason why anyone — especially a child — should be suffering from uncontrolled asthma. ■

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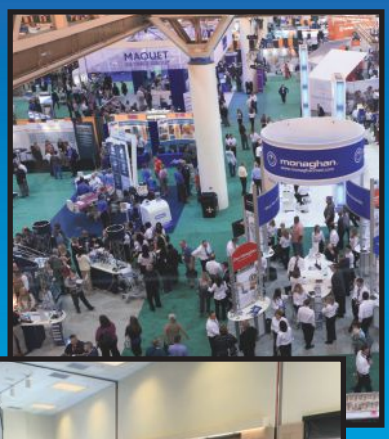

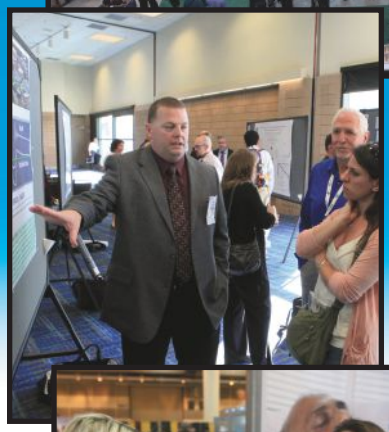

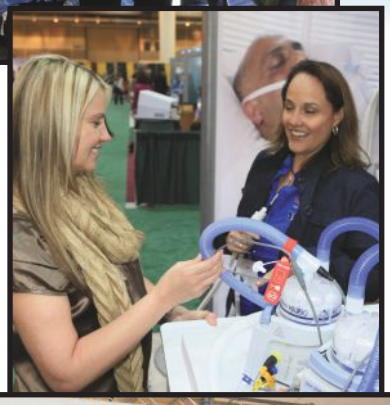

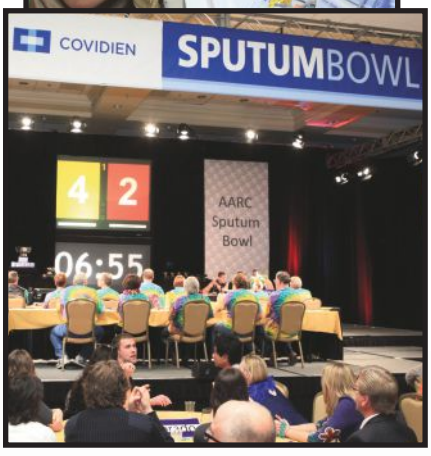

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Aerosol Delivery for the Mechanical Ventilation Patient

by Douglas S. Gardenhire, EdD, RRT-NPS, FAARC

Aerosol generators have been used with mechanical ventilators for as long as most of us can remember. Although the application is common today, the concept of how and why we deliver medication to the airway of a ventilated patient should be considered. Understanding factors created by the ventilator, the ventilator circuit, the endotracheal tube (ETT), and the specific aerosol device that is selected can enhance the delivery of aerosolized medication.

Ventilator factors

The modern mechanical ventilator has a host of modes that may be used for specific patient situations. Selection of the ventilation mode may affect aerosol delivery, although this may be due more to the patient's breathing pattern and inspired volume than to the mode itself. In one study, the selection of continuous positive airway pressure (CPAP) resulted in higher aerosol delivery compared to controlled mechanical ventilation (CMV), assist control (AC) ventilation, or pressure control (PC) ventilation; the latter three modes demonstrated similar results.[1] Spontaneous breathing modes increase medication delivery as they allow the patient to inhale to full inspiratory capacity. If appropriate, the use of an aerosol device in this mode is recommended.

When a spontaneous mode is not appropriate, the tidal volume used should be at least 500 mL in an adult patient.[1] The use of lower tidal volume during mechanical ventilation has become a standard of practice, with many recommendations and evidence-based research describing the reasoning (e.g., it can improve outcomes in acute lung injury and acute respiratory distress syndrome).[2] However, when delivering aerosol it has been found that the tidal volume must be larger than the volume of the circuit, including the ETT.[1,3,4] The larger the volume, the more aerosol will be delivered. However, while larger tidal volumes may increase aerosol delivery, over-ventilation can cause barotrauma. Caution should be exercised so this does not occur.

Increasing the percent inspiratory time increases aerosol delivery as well. It has been recommended that the inspiratory percent be equal to or greater than 0.30 when administering aerosols.[3] But the most important factor may be flow: the lower the inspiratory flow, the more effective the aerosol medication delivery. Higher flows create more turbulent airflow in the circuit and airway and contribute to a higher incidence of aerosolized impaction in the airway, reducing the amount of aerosol. In one study it was reported that a flow of 40 L/min compared to 80 L/min produced a greater than twofold increase in aerosol delivery.[4] More laminar, slower moving air will more likely achieve better deposition.

The change in airflow may also be altered by waveform selection because waveform selection on the mechanical ventilator may play a role in deposition of aerosol as a factor of inspiratory time. A square waveform results in less deposition than the use of descending or sinusoidal waveform due to the time it takes to achieve inspiration. However, this impact is likely to be greater on nebulizers than metered-dose inhalers (MDIs).[5]

Circuit/ETT factors

When administering aerosol medication in-line during mechanical ventilation, a dry circuit results in higher

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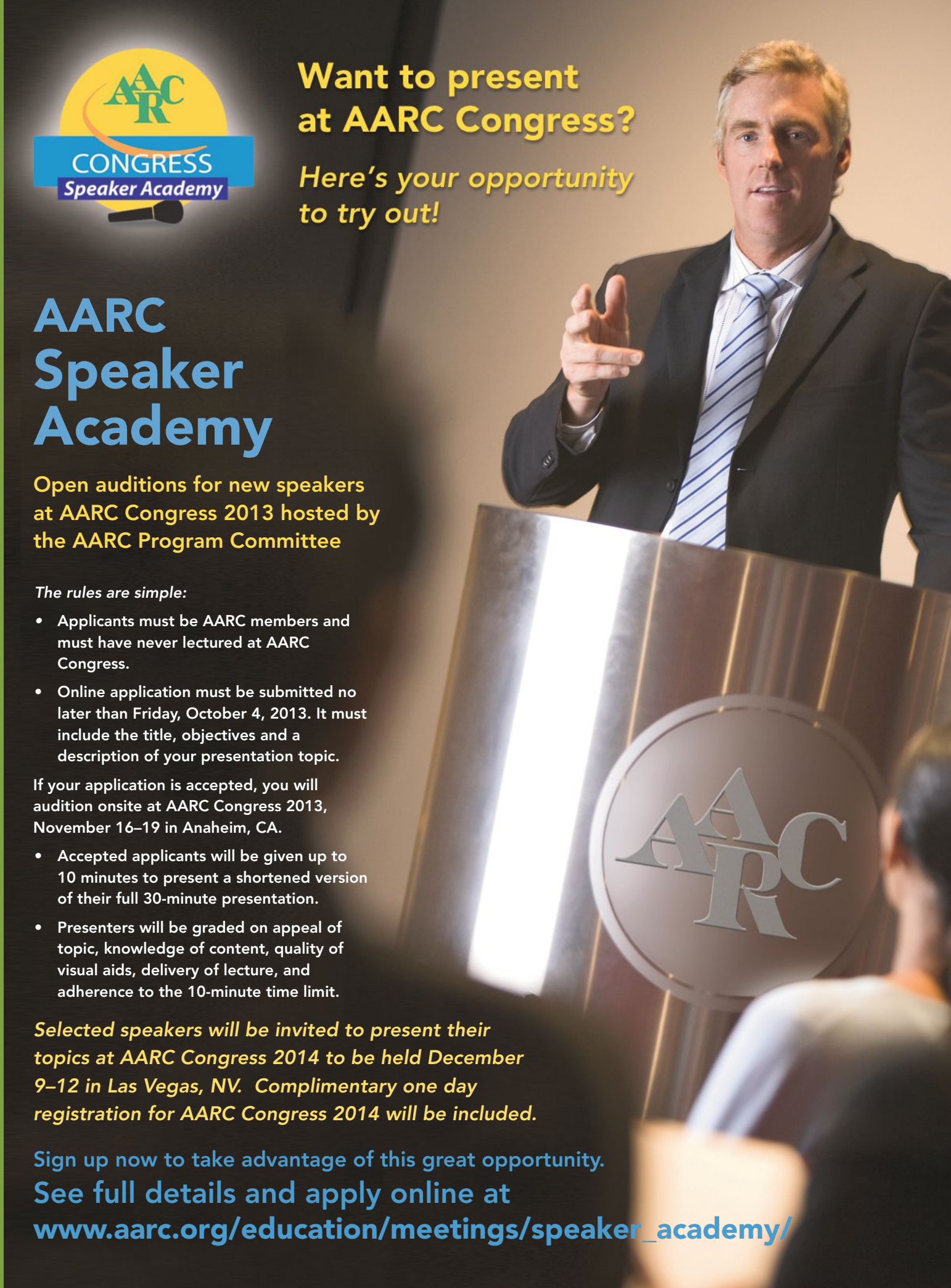

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amounts of delivery. Heated and humidified ventilator circuits reduce aerosol delivery[6] through the expansion of aerosol particles caused by the humidity in the circuit that makes the particles larger and heavier. The larger and heavier the particle, the more likely it will fall out of suspension. However, heating and humidification are necessary to prevent drying of the airway in patients on mechanical ventilation. The premise of disengaging the humidifier during aerosol delivery is actually contraindicated because cool, dry air promotes bronchoconstriction. The use of heat and humidity is needed when the upper airway is bypassed. The RT may want to consider something as simple as delivering a greater amount of drug to offset any loss from a humidified circuit.

As a more economical alternative to active humidification, many patients will be placed on a heat and moisture exchanger (HME). If this is the case, the HME should be removed or bypassed for effective aerosol delivery as it acts as a filter and will absorb all of the medication. Devices are available that will allow you to bypass the HME when delivering aerosol medication without breaking the circuit.

The ETT size is another factor to consider with aerosol delivery as the smaller the internal diameter, the less aerosol is delivered.[6] While ETT size is determined by a number of factors, aerosol delivery should be considered when making that determination. As a result, it is imperative that the respiratory therapist monitor the inner diameter of the ETT for narrowing or occlusions that may result from secretions.

Aerosol device factors

Aerosolized medication can be delivered to a mechanically ventilated patient using a number of aerosol devices. The most commonly used devices are the traditional pneumatically powered jet nebulizer (JN) and pressurized MDI. However, the use of electrically powered nebulizers such as the vibrating mesh nebulizer (VMN) or ultrasonic nebulizer (USN) have been used as well. A number of studies have described the use of these de-

vices, with varying degrees of success.[7-10] The jet nebulizer is probably considered the most economical form of aerosol delivery and is predominantly the generator of choice for most facilities. This, however, does not suggest that it is the most efficient device in delivering aerosolized medications to the mechanically ventilated patient.

Where you place a device in the circuit appears to be critical in increasing efficiency and effectiveness. A jet nebulizer should never be placed between the ETT and Y. For optimal results, a JN should be placed in the inspiratory limb as far away from the Y as possible. The closer the JN is placed to the ventilator, the more effective the treatment will be because the continuous nebulization of the aerosol fills the inspiratory limb that serves as a reservoir. Placement of an MDI, VMN, and USN six inches from the Y in the inspiratory limb of the circuit is most effective.[10]

Choosing the proper aerosol device can be difficult. As noted earlier, the JN is inexpensive, and a large selection of medication is available in liquid form for nebulization. But while the VMN and USN have higher costs, they can be much more efficient. The MDI may be the most utilized due to its simplicity; however, higher cost associated with a hydrofluoroalkane propellant-driven MDI may be cost prohibitive. Costs associated with a spacer and the need for a circuit adapter to actuate the medication must be considered as well.

Recommendations for the respiratory therapist

There are so many factors that influence aerosol delivery in mechanically ventilated patients that it may be difficult to control them all. All devices are different, and some are more efficient than others. A department would be best served by a policy and procedure that allows for the selection of a device based on drug availability, cost, patient population, and efficiency. The policy and procedure may help to streamline cost and better educate the RT on factors to consider when selecting a device. A better understanding of the factors that influence aerosol delivery for the mechanically ventilated patient may allow the respiratory therapist to deliver a more efficient and effective treatment. ■

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Consent Means Never Having To Say You're Sorry

by Anthony L. DeWitt, JD, RRT, FAARC

A therapist I used to work with often described the battle that was nasotracheal suctioning as something like WWF Wrestling without the money or the costumes. Patients were old, sometimes cantankerous, and he once came out of a room sporting bite marks that would have made Dracula blush. But being the good therapist that he was, he always accomplished the task and no doubt extended the lives of many of the patients under his care.

In today's litigious climate, however, patients' families often look on medical procedures less for the benefit they bring the patient than for the potential to turn a profit in a medical negligence lawsuit. And if patient autonomy and respect for patient rights is not accorded the proper degree of nuanced understanding necessary, it can create just that set of circumstances.

Right to die

Elderly patients in nursing homes, hospitals, and home care settings retain their rights to consent to and refuse to consent to medical treatment so long as they can do so intelligently and knowingly. In the absence of the ability to make an informed decision, in most states the doctrine of "presumed consent" takes over. That doctrine says that if a patient was rational and knew their life was in danger and would be saved by the treatment, that a rational person would consent to it. For 99% of the patient population, it's probably an accurate description.

When Nancy Beth Cruzan's case made it to the Supreme Court of the United States, the ability for a patient to consent to, or refuse to consent to, life-sustaining treatment took center stage. In that case, the U.S. Supreme Court determined that individual states have the right to determine what evidence is necessary to make decisions for patients who cannot make decisions for themselves.

One result of the "right to die" cases, including those arising from Dr. Kevorkian's actions, is the increased focus on advanced directives. Advanced directives are meant to guide health care decisions for persons who cannot make their own decisions. They take the form of "if/then" statements:

"If I am not able to relate to the world, then I do not want to be kept alive by artificial means."

A more secure way to ensure the same result is to appoint a durable power of attorney for health care. A "durable" power of attorney is meant to be in effect even after a person can no longer revoke it. It gives the right to the "agent" to make decisions on behalf of the "principal" or patient. However, as with all legal documents, the durable power of attorney has its limits. If a person is temporarily comatose because of illness but is expected to recover, an avaricious grandson can't simply pull the plug and claim that's what his grandma would have wanted. Physicians, nurses, and hospital personnel serve an important function to make sure that agents adhere not only to the letter of such documents but to their spirit as well. And if they suspect ulterior motives, they can always seek an order from the court to appoint a guardian if relatives seem more interested in their chances of inheriting from Grandma's estate than in her chances of recovery.

The "murky" world of choices

In spite of the advanced directive and the durable power of attorney, everyday therapists navigate through

about the author...

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a murky world of choices about patients who may be demented and either do not have an advanced directive, have a vague advanced directive, or the directive does not cover something like nasotracheal suctioning.

The result is that a therapist goes in, does the procedure, and has the patient endure 10–15 minutes of unpleasantness (often accompanied by yelling and screaming "help"). If family members walk in, they may wonder if the therapist is helping or hurting their loved one. They may claim the therapist is actually assaulting their loved one.

When a patient cannot consent and has visitors, it is incumbent upon the therapist to explain *what* is being done to the patient and explain that it will be uncomfortable; but they should also explain that it is necessary to make sure their loved one survives. Even if everyone in the room swears they don't mind staying, a therapist should insist on family leaving during such a procedure. It protects against misunderstandings.

If the family presents objections to the procedure, they should be directed to the physician, and the therapist should simply wait until they are not in the room to perform the procedure. Just because a family member thinks something is not good for the patient does not trump a physician's order; and so until the order is changed, a therapist has a duty to carry it out.

Family objections

Also, unless the family member has a power of attorney that authorizes them to make health care decisions, their objection is simply that: an objection. It can be compassionately ignored, and you could say, "I'm sorry you feel that way, but I have to carry out the doctor's order."

Occasionally patients will have family members who are not, in fact, whom they claim to be. In one instance, a nurse was asked to discontinue treatments by the patient's "wife" who claimed to have a durable power of attorney. The woman had the same last name as the patient; and the document was duly notarized, although it was 11 years old. The nurse smelled something "fishy" and went to her supervisor. As they were discussing what they should do, the current wife came to the hospital and got into a fight with the ex-wife, who was representing herself as the current wife. Had the nurse acted on the ex-wife's direction and her long-out-of-date power of attorney that expired when she divorced the man, the hospital could have faced wrongful death allegations from the patient's real wife.

If a patient is alert, oriented, and understands that refusing therapy could be detrimental to his health, a therapist does not have the power to go against that patient's wishes. If there is any doubt, the therapist should get an order from the physician determining the patient's competence before acting. And as with any procedure at any time, everything of importance should be documented. ■

Therapists navigate through a murky world of choices about patients who may be demented and either do not have an advanced directive, have a vague advanced directive, or the directive does not cover something like nasotracheal suctioning.

A View of Hill Day and All That Goes With It

by Carolyn A. Williams, BS, RRT

The AARC has a dedicated government affairs department that works all year long on issues pertinent to respiratory therapists. However, there is one time of the year when the tables are turned and the AARC staff really depend on the RTs. Speaking for myself and the other Political Advocacy Contact Team (PACT) members, I can tell you we are very active for the three months prior to the annual Washington, DC, Capitol Hill Advocacy Day, held every March for the past 13 years.

It begins in December when we start to receive email communications from Cheryl West, MHA, the AARC's director of government affairs, with the who, what, when, where, and why about the upcoming Hill Day. This year we were advocating for congressional support of the Medicare Respiratory Therapist Access Act. This legislative initiative would amend Medicare Part B to provide coverage of chronic disease self-management services furnished by qualified respiratory therapists in the physician setting for patients diagnosed with pulmonary diseases such as asthma, COPD, and pulmonary hypertension.

The planning process

Here in the Maryland/DC Society, we started studying background documents and information on the purpose and rationale in January so that we would be well prepared for our visit on "The Hill." Meanwhile, Maryland/DC PACT member Susan Lockwood, MA, RRT, RN, requested appointments for the one House of Representatives member representing Washington, DC, as well as the two senators and the eight House members representing Maryland. From the 11 possible appointments to be obtained, we were successful in securing meetings with eight of the Maryland/DC congressional representatives.

Local participation

Since the PACT was coming to our home turf, we also wanted to garner a healthy participation from our local members. By Hill Day, we had 41 members signed up to join us on the Hill. This included students from three respiratory care programs in the immediate area (the University of the District of Columbia Community College, Washington Adventist University, and Prince George's Community College).

Along the way, I was contacted by Jason Moury, BS, RRT, the AARC's DRIVE4COPD/COPD coordinator, about recruiting RTs to participate in a screening for members of Congress on Hill Day. The participants were to provide educational material and population screenings, as well as perform peak flow measurements. Since we had 24 RC students registered to attend, I felt this would be a great experience for them as they would be able to demonstrate some of the many skills they learned from their clinical instructors.

We were given a special room in the Capitol to have the DRIVE4COPD screening, and the students were excited about testing out their new skills on congressional staff. Some of them were also able to spend some quality time with AARC leaders like Executive Director and CEO Thomas J. Kallstrom, MBA, RRT, FAARC, and Jason Moury. The students asked about job placement for new graduates and what they should expect in the field of respiratory therapy.

about the author...

Carolyn A. Williams, BS, RRT, is a respiratory therapist at Children's National Medical Center in Washington, DC. She also serves as the chairperson of the DC Board of Respiratory Care.

Let the meetings begin

Of course, the main event was our meetings with the congressional representatives. We had meetings in nearly every House and Senate Office Building that day, starting at 10:30 a.m. and ending at 4:30 p.m. While all of our meetings were productive, a couple of them stand out from the rest.

When Jason Spear, legislative associate for DC Congresswoman Eleanor Holmes Norton, realized we had 20 people in our group, he quickly changed our meeting place from the small Hill office to the cafeteria to ensure that he could see everyone. We spoke to him about the importance of the Medicare Respiratory Therapist Access Act and how it would positively impact the health of patients with pulmonary diseases.

Spear was very impressed with the 15 students who were present as they spoke about the self-management services they would be able to provide one day. He offered the students words of encouragement, and they invited him to the DRIVE4COPD screening they were volunteering for that afternoon. He was very interested in the comments from our patient advocates as well, and how they expressed the importance of having RTs in their lives after their lung transplants.

During our meeting with Walter Gonzales, senior policy advisor to Maryland Rep. C. A. "Dutch" Ruppersberger, we informed him of the importance of the Medicare Respiratory Therapist Access Act and how self-management of pulmonary patients leads to better patient outcomes and quality of life. He was familiar with our previous bill (H.R. 941) and the key roles RTs play in the delivery of health care, so our presentation focused on patient self-management of chronic disease. Gonzales spoke directly to the students and encouraged them to continue to lobby for their professional organization. He told them it was very important for them to get involved and stay involved, as they will be the leaders of tomorrow.

It truly "takes a village…"

The quote "It takes a village to raise a child" can be applied to my experience during this year's Capitol Hill Lobby Day. I can without a doubt say "It takes a village" to make an event like this a success. We had participation from Maryland and DC respiratory therapists, students and instructors from area RC programs, and pulmonary patient advocates. We're looking forward to even bigger and better representation for the 2014 Capitol Hill Lobby Day. ■

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Respiratory Care 2015 and Beyond

by George W. Gaebler, MSEd, RRT, FAARC

From time to time it is important to look at the current status for signs of progress in the Respiratory Care 2015 and Beyond initiative.[1] We do post this update on our website, www.AARC.org, so that our members can get up-to-date information on this transition. Much has happened since this was officially launched over five years ago. This multi-year, strategic initiative outlined the necessary steps to be followed in order to optimize the value of the future respiratory therapist workforce. This included a look into future needs of patients in light of likely changes in health care, technology, and reimbursement. Competencies of the RT of the future were identified as well as suggested directions on the educational needs of tomorrow's therapist. In order to be certain that this was a strategic process to advance the profession, essential transitional attributes were adopted by the AARC's Board of Directors (BOD) to assure that any proposed changes did not deviate from or negatively impact the profession, the job market, or fall out of line with the provisions of licensure.

The American Association for Respiratory Care's BOD has gone on record as stating that graduating and practicing RTs should seek and obtain the advanced level credential of Registered Respiratory Therapist. The BOD also declared an aspirational goal of obtaining a baccalaureate degree or higher by all Registered Respiratory Therapists with an associate's degree. We fully support and encourage those who fall into these categories to become registered and possess, at minimum, a bachelor's degree in respiratory care or another health sciences degree.

This approach is in line with the vision of nursing as seen with their initiative titled The Future of Nursing.[2] This roadmap seeks to provide direction to the over 3 million nurses practicing today. This is similar to the AARC Board of Directors' recommendations of Respiratory Care 2015 and Beyond, which specifies a need for a more advanced workforce in order to provide and obtain the requisite competencies necessary to deliver high-quality care. Thus, achieving higher levels of education and training are essential.

Transitions and trends

In 2013 the market is transitioning and steps are being assessed and implemented to assure that in the future the number of RRTs with an advanced degree grows. The AARC surveyed 423 Commission on Accreditation for Respiratory Care (CoARC) accredited programs in early 2013 with a response rate of 57%. The results identified that 47% of current respiratory therapy associate's degree programs have an articulation agreement already in place.[3] Additionally, 33% of the remaining programs without a current articulation agreement are negotiating to develop articulation agreements. The market is showing that the respiratory care community has indeed recognized the need to facilitate processes that allow RTs who seek advanced degrees to have a seamless mechanism toward that goal. We are encouraging this trend and expect to see it increase in coming years.

As we see the trend shifting, it is also important to remember that there is an inherent danger when reopening state license acts. The most obvious is that once an act is opened it is subject to reexamination by not just the respiratory care community but by others as well. Other disciplines can legally seek to alter language that could

about the author...

George W. Gaebler, MSEd, RRT, FAARC, is the current president of the American Association for Respiratory Care. He is also the director of respiratory care at SUNY Upstate Medical University in Syracuse, NY.

This multi-year, strategic initiative outlined the necessary steps to be followed in order to optimize the value of the future respiratory therapist workforce. This included a look into future needs of patients in light of likely changes in health care, technology, and reimbursement.

change the intent of the statute to one that is advantageous to their purposes or could ultimately restrict or limit the practice of the respiratory therapist.

While a couple of states have initiated and taken action to mandate the RRT credential as the minimal licensure standard or a tiered classification that mandates RT managers must possess a bachelor's degree and RRT credential, we would ask that a more cautious approach be taken as the health care market shifts during these unconventional times. By mandating advanced level credentials and/or degrees, states potentially place RTs in a position that could potentially negatively impact bedside care due to a limited workforce.

Preparing, analyzing, and adapting

Combine these potential risks with the unknowns of the Affordable Care Act (ACA) and it becomes even more important to ascertain how the profession will need to adapt, expand, and change in the coming years. One area identified in the Respiratory Care 2015 and Beyond process was that the respiratory therapist of the future likely will play a more critical key role in chronic lung disease management of patients with chronic lung disease. This aligns with our current initiative of obtaining Medicare Part B reimbursement for Registered Respiratory Therapists with bachelor's degrees (Centers for Medicare and Medicaid Services-mandated criteria) to provide disease management in physicians' practices. Additionally, we will continue to analyze the future workforce requirements part of the ACA mandate that the National Health Care Workforce Commission gauge the demand for health care workers through the National Center for Workforce Analysis, which would support data collection and analysis.

The Respiratory Care 2015 and Beyond effort is being actualized today in market-driven fashion based on trends and demands at the state level, and the market is undergoing positive changes in order to prepare our future workforce. We are encouraged by these developments and will continue to monitor trends and market shifts moving forward. At the same time, we ask that states be patient regarding making any significant changes in licensure acts until these market changes and the effects of the ACA are more fully realized before considering movement that seeks to change practice parameters by law and thus unintentionally cause a negative impact on the scope of practice of respiratory care. The AARC will continue to monitor these trends and market movements as we move through this process and will continue to update you through our electronic communications. ■

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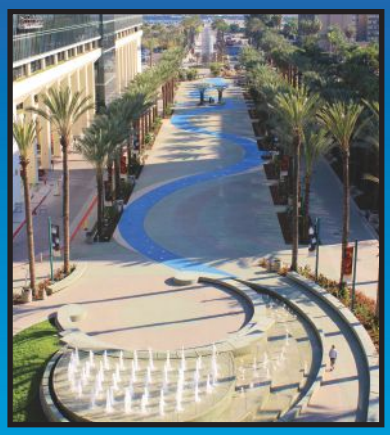

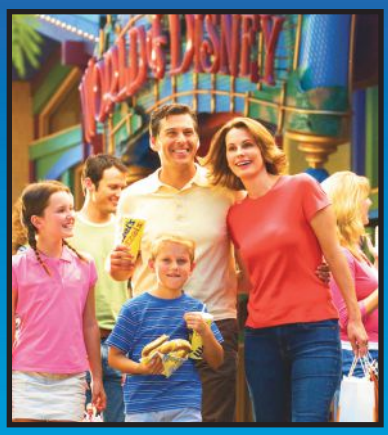

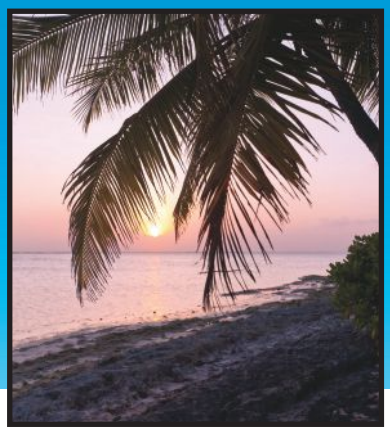

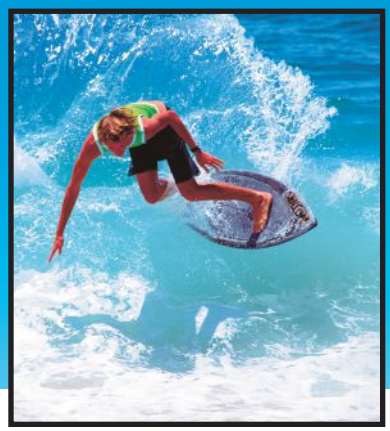

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Keeping RTs Competent in Performing Infrequent High-risk Procedures

by Allen Wentworth, MEd, RRT, FAARC

Managers, have you ever wanted to challenge your respiratory therapists by taking on an advanced procedure but ran into the old barrier: "How will you maintain competency when the volume is so low?" Well, today there is probably a simulation lab in your organization (or at least right around the corner) for you to train and maintain competency on those low-volume, high-risk procedures.

Simulation is booming in health care today. Simulation can assist your organization by enhancing provider assessments, augmenting interventions, optimizing communication, and improving patient and family satisfaction in a risk-free environment. Simulation has been shown to allow participants to learn and maintain competency on low-volume, high-risk procedures or events. When used correctly, simulation leads to increased provider confidence and improved patient outcomes.[1] Respiratory managers and educators must understand the various types of simulation, methods to improve participants' outcomes, and the technology that can assist in teaching and maintaining competency with these procedures.

about the author...

Allen Wentworth, MEd, RRT, FAARC, is director of the WELLS Center, respiratory care, ancillary health technicians, pulmonary diagnostics, and pulmonary rehabilitation at the University of Colorado Hospital in Denver, CO.

Types of simulation

There are different types of simulation, and each provides training for very specific purposes. Simulation can include task trainers, virtual simulation, standardized patients, and/or high-fidelity simulation. Task trainers are used to teach specific skills, such as airway management, arterial blood gas punctures, and arterial line insertions. Virtual simulation includes using computer technology to simulate the clinical scenarios, allowing the participants to assess patients and intervene as required. Standardized patients use scripted actors to play the role of patients and families and are very influential in teaching communication skills. High-fidelity simulation uses a combination of the previously mentioned types of simulation and incorporates mannequins with advanced technology.

It is helpful for respiratory educators to understand the fundamental differences between high-fidelity simulation and a skills lab. Skills labs are important and necessary; however, in certain circumstances they may not be the best use of a high-fidelity $80,000 mannequin. The less expensive, yet still realistic, task trainers — such as a half-torso intubation mannequin — may be a better option if the scenario's learning objective is for the RT to learn the skill of intubation.

High-fidelity simulation incorporates many tools and techniques that help make the scenario as realistic as possible. Such scenarios should incorporate the same equipment and supplies used by the participants in their real work setting. Additionally, the entire team that would normally be involved in delivering care (scripted family members and the patient) are all essential for creating a realistic simulation.

Mannequins are also an important aspect for creating a more realistic scenario. Today's mannequins can provide numerous physiological states. Technological advances in mannequins now allow the display of various types of vital signs seen in an ICU, such as heart rate (HR), respiratory rate (RR), blood pressure (BP), saturation measured via pulse oximetry (SpO_2), end-tidal carbon dioxide ($EtCO_2$), pulmonary airway pressure

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(PAP), carbon monoxide (CO), etc. Additionally, mannequins can display waveforms associated with electrocardiograms, arterial and pulmonary artery pressures, along with $EtCO_2$ and SpO_2 monitoring. Mannequins have the capacity to provide the learner with breath sounds, bowel sounds, and cyanosis. Some models can even cry, drool, mimic local tonic/clonic seizures, change airway resistance/compliance, simulate oxygen consumption and carbon dioxide (CO_2) production. They can exhale CO_2 or be in conscious/unconscious states, have reactive pupils, and more. It's the technological advances that bring realism into the scenario. However, do not let the mannequin and its capabilities distract from all the other elements of creating a great scenario. It's important to remember that good simulation is a technique and not a technology.[2]

Vital components of simulation

Utilizing an experienced simulation educator or facilitator helps to ensure the participants get the most out of simulation. This educator will need to identify and write a scenario to meet the key objectives. They will additionally assume the important role of facilitating the scenario and performing a post-scenario debriefing.

A trained facilitator will ensure that the scenario runs as intended and meets the objectives. Facilitation includes orienting participants to the mannequins, educating participants to their roles, providing the history leading up to the event, ensuring a focus on the objectives, and providing the best opportunity for learning. A facilitator will need to ensure the scenario is well written to accommodate many possible responses that may be made by the participants. The facilitator or delegate should monitor the team's performance. Frequently, a checklist is used to monitor what was and was not completed during the scenario. The facilitator should not intervene during the simulation except to stop the scenario and immediately move to debriefing.

> Simulation can assist your organization by enhancing provider assessments, augmenting interventions, optimizing communication, and improving patient and family satisfaction in a risk-free environment.

The debriefing is a very important aspect of the learning experience, which should engage all participants, allowing them to express how they felt and what they experienced. The debriefing should include a diffusing period for venting feelings experienced during the scenario. Following the diffusing phase, the analyzing phase allows everyone to evaluate and discuss which parts of the simulation did or did not go well. Frequently, the checklist of events that was filled out during the scenario is used to assist with the analysis phase of the debriefing. During this time, participants should express what they would have done differently if presented with the scenario again. The debriefing should end with a summary of the objectives and take-away points. In order to allow for enough time to debrief, the facilitator should allow from one to one-and-a-half times the amount of time it took to run the scenario.

Low-volume, high-risk procedures

What is considered low-volume procedures or events varies by institution. For instance, in a larger facility that has a high-risk maternal fetal program, neonatal resuscitation may occur daily. However, for the smaller, rural hospital that may not even have an obstetrics/gynecology physician, a 28-week mother presenting to the ER who is crowning poses a different challenge due to the low frequency in which this occurs. On the other hand, extracorporeal membrane oxygenation in almost any facility presents a low-volume high-risk situation in which simulation can play a large role in training and maintaining competency. Examples of other possible low-volume, high-risk scenarios that could be taught and competency maintained via simulation include:

- Difficult airways
- Arterial line insertions
- Tracheostomy tube changes on ventilator-dependent patients
- Rapid response teams
- Code Blues
- Transitioning a patient to an oscillator or airway pressure release ventilation (APRV)
- Conscious sedation.

Using simulation for some of these difficult situations may include just the participants trying to successfully complete a procedure using a task trainer. Other situations may include a difficult procedure with an interdisciplinary team and all the associated team challenges. Here are a couple of examples.

Addressing the difficult airway — A traditional task-training mannequin may not adequately provide a realistic "difficult airway." For this scenario, a more advanced mannequin may need to be selected. A mannequin that can present the learner with a swollen tongue, laryngospasm, oropharyngeal trauma, fixed jaw, and/or a c-spine injury is ideal. The simulation should take place in a patient care area, and the participants should have available all the equipment that their hospital has in its difficult airway kit. Once the learner performing the intubation has acquired the necessary skills as assessed by a checklist (see Figure 1), the code blue or rapid response team should be integrated to assist as they would in a real situation. If possible, video/audio should record the event for playback during the debriefing. Then during the debriefing, allow the team to discuss the intubation, the team communication, and any patient or family interaction that occurred during the event.

Figure 1. Sample Checklist for Emergent Code Blue Difficult Airway Role: RT Intubating

	Yes	No
Assess for potential difficult airway	☐	☐
Preparation of equipment	☐	☐
Oxygenate and ventilate with mask/bag	☐	☐
If unable to mask ventilate, place supraglottic device	☐	☐
Call for difficult airway kit	☐	☐
First attempt to intubate	☐	☐
If failed, bag/mask or supraglottic ventilation	☐	☐
Second attempt to intubate	☐	☐
If failed, use airway adjunct (i.e., videolaryngoscope, tracheal tubes, flexible fiberoptic laryngoscope)	☐	☐
Validate placement with breath sounds/epigastric	☐	☐
Validate placement with capnography	☐	☐

Advanced modes of ventilation — This can be a little more challenging to do technically. First, you need to ensure your mannequin interacts appropriately with the ventilator. Not all mannequins respond similarly to positive-pressure ventilation. Ensure that the mannequin can handle the pressures required for the simulation and can trigger the ventilator. Getting the mannequin to interact with the ventilators can be a challenge for the lab's simulation technician and the respiratory therapist acting as the subject matter expert. Therefore, it's important to be sure you have plenty of time to run through the scenario to ensure it is as life-like as possible.

Once the mannequin and ventilator are synchronous, review your hospital's procedure or guideline for this intervention. Again, it's important to have a multidisciplinary team present that would be there in a real-life situation for your organization. You should have available the blood gas values, chest x-rays, CT scan information, and whatever your guideline uses to determine that a new mode of ventilation needs to be attempted. You can write complications into the scenario and see how the participants react by dropping SpO_2, changing BPs, developing a tension pneumothorax, cardiac dysrhythmias, etc. It can become more meaningful if you base your scenario on a recent risk issue that your organization has experienced to assess the respiratory therapist's and team's response.

Risk-free educational strategy

Simulation is an exciting educational strategy that allows a participant to learn and maintain competency on high-risk, low-volume procedures in a risk-free environment. Advances in mannequin technology have made simulation much more realistic. Simulation allows RTs to master difficult procedures and improve assessment and intervention skills while interacting with other health care providers. If you are unsure of how to find a local simulation center, accredited centers can be found at http://ssih.org/accreditation/sim-center-directory. However, there are many labs not yet accredited that can provide a great experience. You can also ask health care schools in your area if they have a simulation center you can use. Google provides a pretty accurate list of simulation centers.

Ultimately, the use of simulation will continue to help the health care industry reduce the frequency of errors and provide quality care, much like simulation has aided the aviation industry in reducing the number of bad outcomes. ■

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Side Effects of Commonly Used Respiratory Medications

by Douglas S. Gardenhire, EdD, RRT-NPS, FAARC

Among all the countries in the world, only the United States and New Zealand allow direct-to-consumer advertising of medication.[1] Pharmaceutical companies spend, on average, $30 billion in promoting medication in the United States every year.[2]

Direct-to-consumer advertising is delivered through magazines and Internet advertising, but television commercials account for the largest expenditure. However, television commercials often spend more time on the benefits of the agent than the risks.[1] In today's world of media bombardment, is this pharmaceutical advertising useful in providing information needed to treat a condition? Or should patients be getting more of their information about their medications from health care professionals?

While patients receive their information from different sources, it is unlikely that a licensed health care professional is providing them with the bulk of their knowledge of their medications,[2] especially pulmonary medications that a respiratory therapist delivers. RTs spend a considerable amount of time at the bedside, and this time should be spent educating the patient about his medication.

Most RTs are well versed in the benefits of the medications they administer, but they must also understand, observe, and document the side effects of these drugs. Indeed, now that hospital reimbursement is being tied to the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction survey — which clearly asks patients whether they were always informed of the side effects of their medications at every treatment — improving the RT's knowledge of side effects is paramount. While RTs come into contact with a large number of medications, inhaled adrenergic bronchodilators, anticholinergic bronchodilators, and corticosteroids are the most common.

about the author...

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Adrenergic bronchodilators

Therapeutically, adrenergic bronchodilators (ABs) stimulate alpha-adrenergic and beta-adrenergic receptors. The most commonly reported side effects include nervousness and anxiety, usually a result of skeletal muscle tremors rather than direct stimulation of the central nervous system.[3] Other common adverse effects may include headache, irritability, and insomnia. Most of these effects are dose related, especially with oral dosing. This provides the rationale that ABs are better inhaled because a lower dose is used and the lungs are targeted.

Another prominent side effect of ABs is cardiac involvement. This is due to alpha and beta-1 stimulation. However, these are seen in much older agents, such as racemic epinephrine and epinephrine, which are not beta-2 selective. These agents are more likely to cause tachycardia; as a result, they increase cardiac output and oxygen consumption. These are dangerous side effects for individuals with congestive heart failure.

Since racemic epinephrine has recently been released at retail stores around the country without a prescription, some patients, particularly those who have a hard time affording their pulmonary prescription medications, may use it as a last resort. RTs should be prepared to address these side effects with those patients and explain to them that filling their prescriptions is a better option. Providing patients with resources for prescription drug assistance may be necessary to achieve that goal.

Beta-2 specific agents such as albuterol can also cause reflex tachycardia and vasodilation due to beta-2 recep-

tors in the heart.[4] Although this may be seen as a negative, it can be a positive in the presence of congestive heart failure and bronchoconstriction. Beta-2 specific agents cause vasodilation, increasing cardiac contractility without increasing oxygen consumption.

Of course, some side effects (such as nervousness or tachycardia) may be due to the underlying disease that is being treated rather than the medication; and it is important for the respiratory therapist to assess for this difference. These side effects are dose related as well. It should also be noted that there is no difference in side effects between the use of racemic albuterol and levalbuterol, even though some reports have indicated fewer cardiac side effects with levalbuterol.

Tolerance and loss of bronchoprotection occur as a consequence of ABs. A fall in arterial oxygen tension (PaO_2), metabolic changes, propellant toxicity, and sensitivity to additives are side effects. These side effects are often difficult to pinpoint or are dismissed as a random occurrence.

Tolerance occurs with repeated use of an agent, and this is no different with ABs. Repeated use of ABs causes a drop in the number of beta receptors, which is termed downregulation. We combat downregulation[5] by administering a corticosteroid. Corticosteroids increase beta receptors and their affinity for ABs. This is the rationale behind the use of products such as Advair® (GlaxoSmithKline, London, United Kingdom) Dulera® (Merck, Whitehouse Station, NJ), and Symbicort®(AstraZeneca, Wilmington, DE). The repeated use of ABs also causes a loss of bronchoprotection, making the airways more susceptible to allergens and irritants.[6]

As mentioned earlier, ABs cause vasodilation, though when the medication is inhaled, this is a minor effect. Bronchoconstriction causes under-ventilated portions of the lung, causing vasoconstriction from regional alveolar hypoxia. This effect attempts to shunt blood to areas in the lung with higher concentrations of oxygen. The use of ABs causes vasodilation to increase blood flow to under-ventilated areas, resulting in a drop in arterial oxygen tension.

Adrenergic bronchodilators can also increase blood sugar and insulin levels. RTs should be cognizant when administering ABs to diabetic patients. Hypokalemia is another side effect caused by ABs, but this is only seen with systemic use and in large inhaled doses. This side effect may be prescribed to treat hyperkalemia in emergent situations.

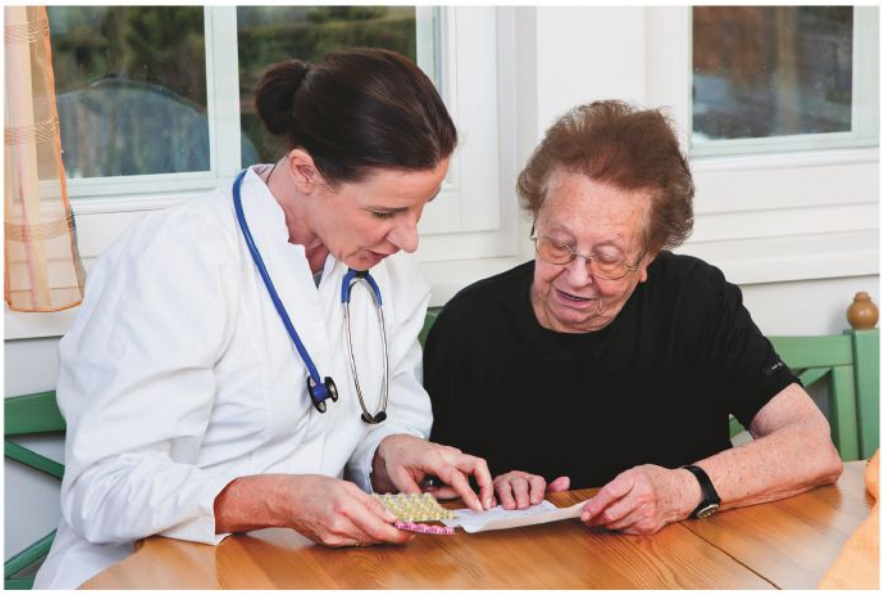
RTs should be aware of propellants and additives used with inhaled agents as well. Bronchospasm may occur with individuals who have sensitivity to ingredients in metered-dose and dry-powder inhalers. These sensitivities may be found through a good assessment and history or a documented allergy to an ingredient. Sensitivity may also be found in liquid ABs used with a small volume nebulizer. Patients may experience bronchospasm from preservatives found in the solution.

Anticholinergic bronchodilators

Anticholinergic bronchodilators (ACBs) have fewer side effects than ABs.[7] This may be due to poor systemic absorption of the agents. The most common inhaled ACBs are ipratropium, tiotropium, and aclidinium. The most common side effects of these agents are dry mouth and cough. Urinary retention can be a problem as well. An increased risk of cardiac death has been seen in patients taking tiotropium.

Respiratory therapists should also be aware that inhaled ACBs can cause paralysis of the eye muscle and dilation of the eye, increasing intraocular pressure.

When educating patients about the side effects of their respiratory medications, RTs must clearly state whether a side effect is minor or serious and whether it is common or rare.



Therefore, patients with glaucoma should be carefully assessed when using ACBs. RTs should make sure that ACBs remain away from the eyes when used as an inhalation therapy, a mouthpiece should be used over a mask, and a valved holding chamber should be used with a metered-dose inhaler.

Corticosteroids

Use of exogenous systemic corticosteroids, such as prednisone, can cause a number of side effects, most notably hypothalamic-pituitary-adrenal (HPA) suppression limiting endogenously produced steroids. Depending on dose and length of treatments, systemic corticosteroids may cause immunosuppression, osteoporosis, slowed growth in children, fluid retention leading to hypertension, and cataract formation. RTs should be aware that the use of systemic corticosteroids can cause increased glucose uptake inducing diabetes as well. Plus it can increase white blood cells.

There are significantly fewer side effects associated with inhaled corticosteroids (ICS). Inhaled corticosteroids could cause HPA suppression or restrict growth in children, but this is unlikely due to the lower doses that are typically prescribed. In fact, very few patients require high doses of ICS. Reports of serious side effects like osteoporosis, hypertension, and cataract formation are rare with ICS therapy as well.

The most common side effect from ICS is oropharyngeal fungal infection.[8] Candida albicans or Aspergillus niger can occur, but can be treated with antifungal medications. The likelihood of these infections can be dramatically reduced with good oral care, mouth rinsing, and the use of a spacer or valved holding chamber to reduce oral impaction.

Inform, don't frighten

Evidence shows that pulmonary pharmacology in asthma and COPD has a benefit.[9,10] However, the side effects of these medications should be known and understood by patients and RTs alike. When educating patients about the side effects of their respiratory medications, respiratory therapists must be sure to clearly state whether a side effect is minor or serious and whether it is common or rare. Citing rare and serious side effects without making this distinction only serves to frighten the patient.

It is also important for the RT to educate the patient on strategies to avoid side effects whenever possible: such as stressing the importance of mouth-rinsing when using inhaled corticosteroids. This education should be a part of the overall medication education delivered to the patient, including information on the benefits of the drug, proper technique, and the pitfalls that come with non-adherence. This knowledge can be used to ensure proper therapy is being utilized and is effective.

Expanding role

In 2009, the Centers for Disease Control and Prevention reported that about 25 million individuals suffered from asthma in the United States. Over half were reported to experience an asthma exacerbation in 2008 and more than 3,400 died as a result of asthma in 2007. Asthma cost the United States more than $56 billion in 2009, which translates to more than $3,300 per person.[9]

Meanwhile, COPD accounts for almost $30 billion in direct costs and over $20 billion in indirect costs. Moreover, the majority of costs are related to COPD exacerbation. Research finds that the more severe the COPD, the more costly it will be to treat.[10]

It is important for RTs to understand that improperly treated patients result in sicker patients, longer admissions, and more deaths. The cost of no or poor education on respiratory medications is a variable RTs can impact. The changing environment of health care reimbursement should persuade RTs to work on educating patients to better understand their disease, how to treat it, and the proper medication usage. Informing patients about side effects is part of the process.

As patients continue to receive medical information from various sources — including the ubiquitous television commercial — the role of the RT must expand to include more than just administering therapy. The interaction RTs have with their patients at the bedside must always include medication education. The respiratory therapist should remain the patient advocate. ■

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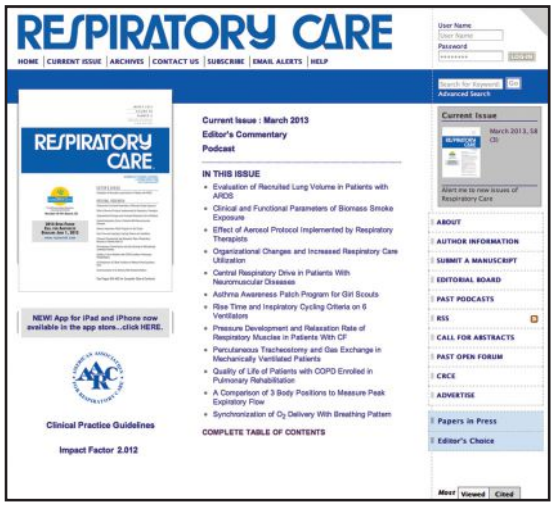

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Sharon McRee's "Ah-ha Moment"

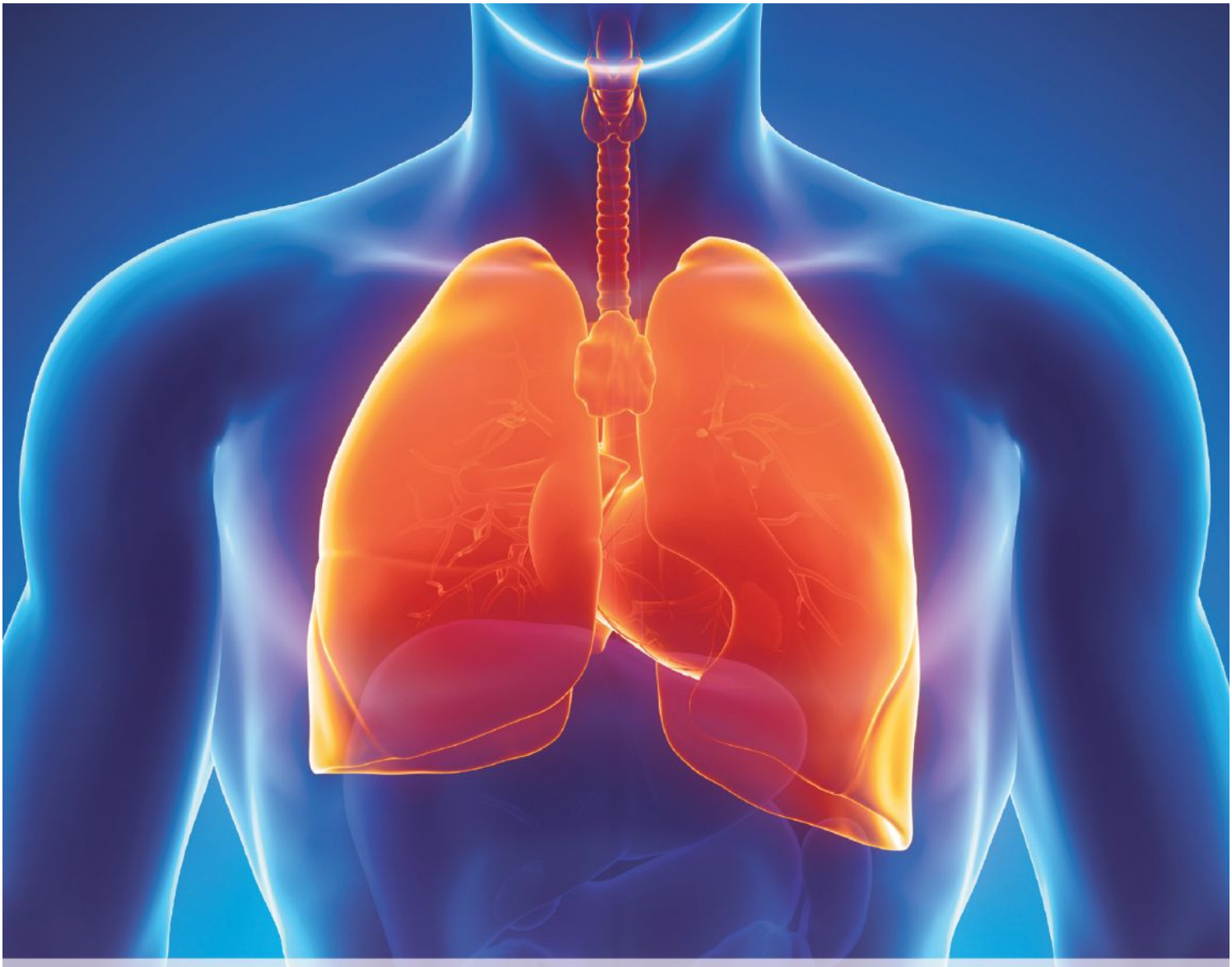
How a North Carolina AARC member has breathed new life into lung transplantation

by Debbie Bunch

Organ donation offers a second chance for people in need. Sharon McRee's protocol is making sure more of them really get it.

Lung transplantation saves thousands of lives every year. However, among the many patients and families who receive the happy news that a match has been found, there are too many others who never get the joyous news. Those patients die before they can receive a transplant, and their families walk away thinking it was just the luck of the draw — that no match came along while they were on the waiting list.

But the truth is, there very well may have been a match. Statistics from the Organ Procurement and Transplant Network (OPTN) show that only a small percentage of potential donor lungs are ever procured for



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"I feel a responsibility and obligation to these families to make sure the organs they so unselfishly donated save the lives of as many people as possible." — Sharon McRee, RRT

transplant. Among 16,178 lungs from 8,089 donors in 2007, for example, only 2,489 — or 15% — were deemed suitable for a recipient. In 2008, the OPTN recorded 6,758 lungs from 3,379 donors, with just 1,065 procured, for a success rate of 16%.

Thanks to AARC member Sharon McRee, RRT, those numbers are now improving, at least at hospitals that use the LifeShare Of The Carolinas lung donor ventilator management protocol that came about after she and a LifeShare coordinator at Mission Hospital in Asheville, NC, had what she calls their "ah-ha moment."

Getting on the same page

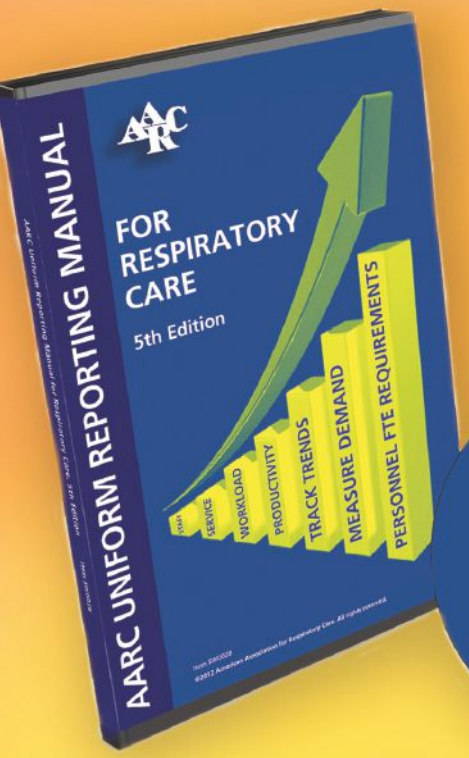
"In 2007 we had an organ donor who, per the trauma physician, had lungs that were pristine but the arterial oxygen tension (PaO_2) was dropping," recalls McRee. "The LifeShare coordinator asked me if I could fix it." The respiratory therapist suggested placing the patient on the aggressive ventilator settings used in the hospital's evidence-based trauma ventilator management protocol, and the coordinator agreed it was worth a try. "The PaO_2 came up, and we were able to procure the lungs."

After that incident, three or four additional donors came along while McRee was on duty and she placed them on similar parameters. They were able to procure those lungs as well. "From there, the ICU manager asked me to write down the parameters I used so if I was not there other therapists would know what to do," she explains. That became the genesis for the Mission lung donor ventilator management protocol, which eventually was adopted with only minor revisions by LifeShare and circulated to all 40 of the hospitals in the organization's 22-county area in Southwest North Carolina.

Looking back on it now, McRee says the strategy seems intuitive; but at the time, her hospital (like many others) did not have any special procedures in place to handle the lungs once a potential organ donor was declared brain dead. "The donors were left on basic ventilator parameters with minimal positive end-expiratory pressure (PEEP)," she says. "We were not aware that there were certain criteria needed by the United Network for Organ Sharing for someone to become a lung donor, one of which was a minimum PaO_2 amount while on 100% FiO_2 (fraction of inspired oxygen);[1] and LifeShare coordinators did not know there were things that we could do to help bring the PaO_2 up, like reversing and preventing atelectasis." The recognition of this discrepancy was the "ah-ha moment" McRee noted earlier.

"Once we found out what the criteria was, we had a goal," she says. For her, that goal became even more important when she discovered that of the 12 to 16 organ donors at her facility every year, only one to two sets of lungs were able to be procured — a figure that translates to about the national average of 16–18%.[2] "The challenge for me became to make that better and see how many lung donors we could get."

Tools to Make Respiratory Management Easier



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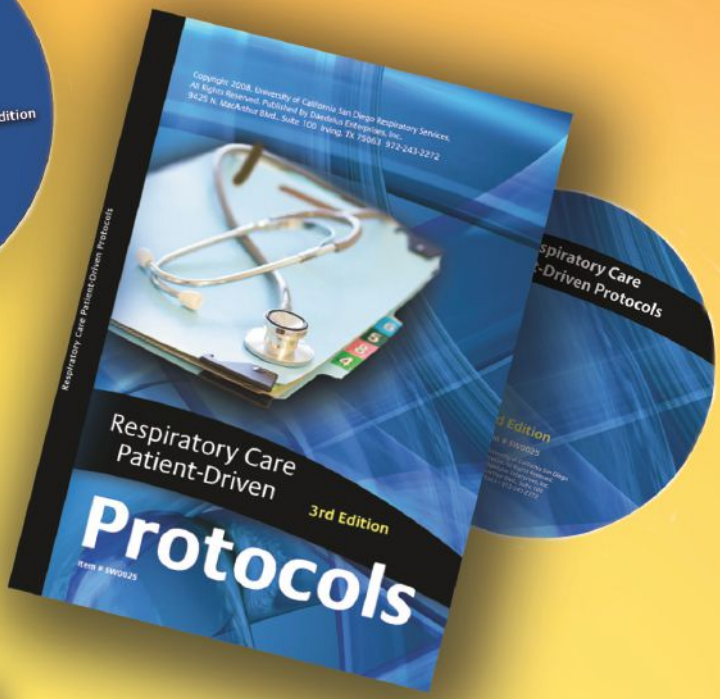

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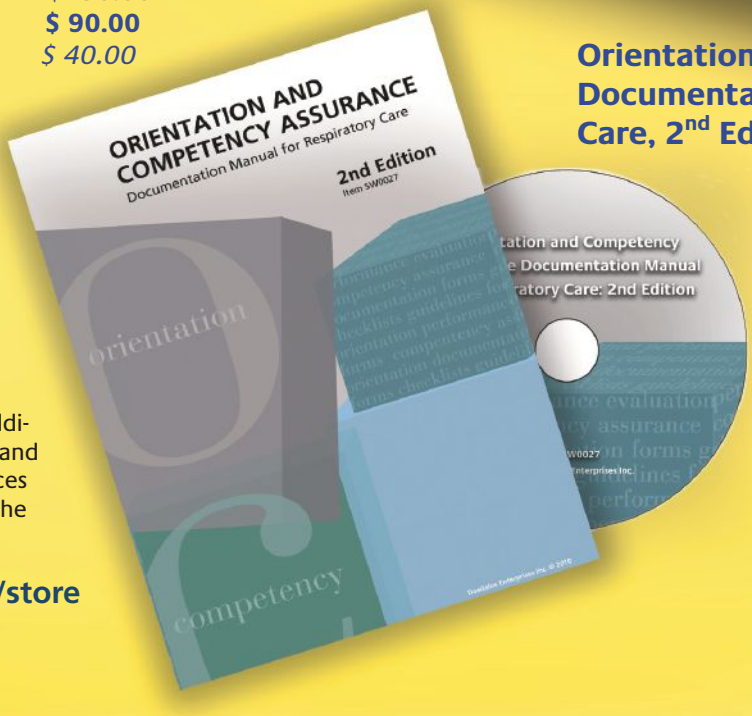

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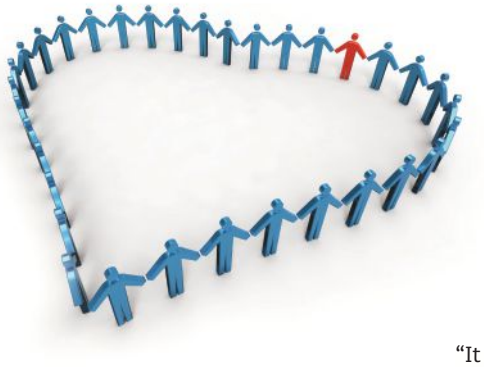
Idea well received

After McRee and the transplant coordinator shared that "ah-ha moment," McRee went to one of the trauma physicians on staff, Michael Buechler, MD, FACS, FCCM, and her department educator, and began work on the protocol. "The idea was very well received," she says. "In fact, Dr. Buechler said he did not know why they had not thought of it before."

"Sharon McRee has achieved something few clinicians achieve — to implement a clinical practice change that will save hundreds of lives and affect thousands of people."

— Michael Buechler, MD, FACS, FCCM



"It was an incredibly logical approach to the problem of failing to maintain donor lungs during the placement and procurement process," agrees the physician, noting that the hospital had already experienced an impressive decrease in ventilator days and ICU length of stay in its trauma patients using the trauma ventilator management protocol. "By adopting a consistent management approach to donor lungs and educating all staff involved with these patients, the success of maintaining lungs until the time of procurement increased dramatically," he notes. "This effort was driven by Ms. McRee."

The protocol calls for respiratory therapists to place the donor on the ventilator parameters they would typically use for a critically ill trauma patient. "We use higher PEEP (a minimum of 10 and up to 18 if needed); bi-level or pressure control with a 1:1 inspiratory-to-expiratory ratio to help recruit and avoid atelectasis; and low FiO_2 to avoid micro atelectasis," explains the RT. She works to avoid high respiratory rates whenever possible to optimize the longer inspiratory time and set high PEEP or inspiratory pressure to keep tidal volume (V_T) 6–8 cc/kg for lung protection.

Aggressive pulmonary toilet is also a key part of the protocol. "We manually turn the donors high lateral — greater than or equal to 45° — right side to left side and never on their back every hour to help minimize dependent atelectasis," says McRee. "We use assisted ('quad') cough every four hours and metered-dose inhalers as needed." (For a look at the entire protocol, go online to www.aarc.org/members_area/AARC_Times/More_of_the_Story/ and select Protocol for Ventilator Management Orders for Consented Organ Donors.)

McRee emphasizes that with the exception of the high lateral turns and quad coughing, which she felt were necessary to keep the donor lungs clear and assist in recruitment, these parameters are essentially the same parameters con-

tained in the hospital's evidence-based trauma ventilator management protocol. That made educating staff RTs on the donor protocol fairly easy. "We just needed to know that there were minimal criteria for lung donors and to think of organ donors as sick living patients and become proactive and even reactive if the PaO_2 was not where it needed to be."

Pleased with the results and impressed by the efforts of all involved, Dr. Buechler and his colleagues decided to get more involved with the donors as well. "Once we started increasing the number of lungs procured, the trauma surgeons agreed to assist LifeShare with donors," says McRee. "So they will perform the bronchoscopies, insert lines, and serve as a resource for the coordinators if they are having difficulty managing them."

Positive outcomes

Outcomes from the protocol have been positive. In 2008, McRee presented the findings of a study she co-authored along with Dr. Buechler and another trauma physician, Abenámar Arrillaga, MD, FACS, FCCP, at the Open Forum at the AARC's International Respiratory Convention & Exhibition in Anaheim, CA. The research compared lung procurements before and after implementation of the protocol. Prior to the protocol in 2006, Mission had two lung procurements from 13 potential donors, for a success rate of 15%. In 2007, the hospital had 12 lung procurements from 16 potential donors, for a success rate of 75%. The total number of organs that could be procured from donors rose as well, from 2.81 in 2006 to 3.78 in 2007.

LifeShare Of The Carolinas has also enjoyed a significant improvement in lung procurement in its 40 member hospitals since implementation of the protocol. Before the protocol, only 4% of donor lungs were procured at these facilities. With the protocol, that number has been sustained at 29–32%, significantly exceeding the national average of 18%. Over the years in which the protocol has been in place at Mission, the hospital has been able to recover lungs from around 31% of its donors.

These improvements have led to widespread recognition for McRee from the transplant community. At its 2008 meeting in Boston, MA, the North American Transplant Coordinators Organization (NATCO), along with the Association of Organ Procurement Organizations (AOPO), awarded LifeShare its Quality Award for the lung donor ventilator management protocol; and McRee was invited both to present at the conference and accept the award on behalf of the organization. She presented at the 2009 NATCO meeting as well, and has also been recognized for her work by the Health Resources and Services Administration. Last year she received the North Carolina Society for Respiratory Care's Practitioner of the Year Award. Perhaps most importantly, the protocol is now being shared with many other hospitals as well, as a best practice through NATCO and the AOPO.

"To my knowledge, every center that has adopted this protocol has seen an increase in the number of lungs procured," says Dr. Buechler. "Each year hundreds of people die while on the waiting list for a lung transplant. Each additional lung donated and procured is a life saved. It's as simple and as elegant as that. Ms. McRee has achieved something few clinicians achieve — to implement a clinical practice change that will save hundreds of lives and affect thousands of people."

A smiling heart

Since national policy dictates that all organ recipients remain anonymous, Sharon McRee does not know very much about the people whose lives have been turned around by her organ donor protocol. She and her colleagues are only given basic information like age, sex, marital status, and a brief biography. But a couple of cases have remained with her in the years since the protocol went into effect. "One was a young woman from up north somewhere who was going to get the gift of breath from a donor we had at Mission," she recalls. "Unfortunately, she passed away as the team was in the air on their way to Mission to procure lungs for her."

The other involved a young cystic fibrosis patient who was so sick he was going to be taken off the transplant waiting list if the donor lungs they were working on could not be procured. "This patient did receive his gift of breath from the donor from Mission and, last we heard, had left the hospital and was doing great."

It is the donor families, though, that really tug at her heart. "I am still amazed that families in the depths of sorrow and despair can somehow find it in their hearts to save the lives of total strangers by donating their loved one's organs," says the respiratory therapist. "Now that I know we can make a difference, I feel a responsibility and obligation to these families to make sure the organs they so unselfishly donated save the lives of as many people as possible. It makes my heart smile every time we are able to send a donor to the operating room knowing we are procuring the lungs." ■

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How ACA Is Changing

Affordable Care Act brings a new dynamic to

Before health care *reform* in the United States, hospitals defined value as decreasing costs while enhancing revenue. Today the focus has shifted to *quality and outcomes*, and that spells *opportunity* for respiratory therapists.

by Richard M. Ford, BS, RRT, FAARC

Ten years ago, most of us were using cell phones only to make voice calls or check our email on the go, but we were still thrilled with the value they added to our lives. Today the smartphones many of us have are also cameras, Internet search engines, books, video games, TV shows, movies, calculators, calendars, flashlights… well, you get the picture. "Value-added" might be what you would call them.

Clearly, "value" is a key word throughout our society today, so it should be no surprise to any of us that the same is true in health care. While cost concerns are still at the forefront, a plethora of new initiatives in the Affordable Care Act (ACA) are now requiring hospitals to do more. ACA defines a new beginning in how the Centers for Medicare and Medicaid Services will pay health care providers. For the first time, hospitals across the country will be paid for inpatient acute care services based on quality. This new beginning is bringing new opportunity for clinicians who can add value every step of the way. Fortunately for those of us in respiratory care, opportunities for added value are just about everywhere we turn. We simply have to be willing to seek them out and embrace them.

Why respiratory therapists?

The first thing we need to do when looking at added value is to ask ourselves the question, "Why RTs?" What do we bring to the table that our hospitals can use to enhance the value of its services? I believe the list is long. Not only are we at the bedside 24/7, we work throughout the hospital, which means we can be cross-trained across procedures, units, and sites. We also operate via flex staffing models, which makes us an efficient resource responsive to changing patient needs; and we bring a unique expertise in both respiratory care physiology and technology.

Before we decide how to add value to our departments, however, it is critical that we understand how our administrations are now *measuring* value. These days, much of their rationale is firmly entrenched in the Affordable Care Act. Although cutting costs is certainly still important, provisions in the ACA are all about adding value by enhancing quality of care and improving outcomes. The government is driving hospitals to embrace these provisions by issuing stiff penalties and reductions in reimbursement for facilities that do not measure up. So cutting costs without addressing quality is like robbing Peter to pay Paul.

"Added Value"

the table for RTs

The AARC's 2015 and Beyond conferences looked at a myriad of factors related to the provision of respiratory care services and concluded that RTs can thrive in a future where reimbursement is linked to quality — just the future we now find ourselves in. We will have to evolve to make that happen, but the impetus is there. Two of the most important ACA provisions that now carry stiff penalties for hospitals that fail to excel are the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction survey and the Hospital Readmissions Reduction Program. RTs have a role to play in both.

Striving for "always"

HCAHPS has been around for a number of years now, but only this year has the government begun to reward or penalize hospitals for their scores on the survey. Now included in the Patient Experience of Care Domain in the Hospital Value-Based Purchasing provisions of the ACA, the survey is sent to all

patients following discharge and asks questions about their hospital stay. Hospitals that excel on the survey ("excel" means patients largely report staff "always" met their expectations in various areas) are paid more than hospitals that achieve lesser results.

While the HCAHPS survey does not specifically include questions about care delivered by respiratory therapists, many of the areas it covers — courtesy and respect, maintaining quiet, explaining treatments and side effects, etc. — fall within our ability as RTs to influence. If therapists do not "always" meet each of the goals, the patient is likely to give the hospital a lower score because the patient is not going to know, or remember, or even care whether that clinician who did not explain the side effects of his treatment or would not take the time to get him another blanket, was a nurse, an RT, or another clinician. The patient is only going to remember that his needs were not "always" properly addressed.

In other words, these days it's not about how many patients we can see or how many treatments we can perform. It's about ensuring the patient leaves totally satisfied with the care we provided.

COPD readmission reduction program coming soon

The other component in the ACA with the most potential to affect respiratory care — and certainly the one with the most potential for us to show added value — is the Hospital Readmissions Reduction Program. This government program currently withholds reimbursement for hospitals with excessive readmissions for heart attack, congestive heart failure, and pneumonia, but we expect COPD will be added to the list beginning in 2015. Respiratory therapists certainly play a role in the care of patients with the first three diagnoses, but our role will expand exponentially when COPD joins them. Why? COPD is currently the fourth leading cause of 30-day readmissions, each readmission costs an average of $20,757, and current readmission rates for COPD run as high as 28%.[1]

Strategies

Here are just some of the strategies we can implement to help our hospitals reduce their 30-day readmissions for COPD:

We can place our therapists in emergency rooms and clinics, where they can **provide patient education and disease management services** to help the patient manage his condition at home.

We can **develop inpatient protocols and guidelines** to ensure patients receive state-of-the-art care when they are admitted.

We can help **evaluate the patient for discharge readiness** and provide disease-specific education and an action plan designed to help the patient and family avoid another admission.

We can **follow up with the patient and family once they are home** to ensure they are following their care plan and to answer any questions they may have.

And we can **refer our patients to pulmonary rehabilitation programs**, where they stand the best chance of not only avoiding the next exacerbation but gaining ground on their COPD.

In relationship to health care reform, there is no doubt in my mind that addressing the COPD 30-day readmission rate is the single-most important thing we, as RTs, can do to add value to our services. Evidence shows that if you provide just some education to the patient at discharge, you can reduce your 30-day ER readmission rate by up to 50%.[2] We need to get these patients out to the clinics, to pulmonary rehabilitation, to smoking cessation — our minds should be racing with all the things we can do to move the meter on the COPD issue and make a difference.

Other opportunities

Other provisions in the ACA offer opportunity for RTs as well. In addition to focusing on patient satisfaction, the Value-Based Purchasing Program incorporates quality initiatives built on inpatient reporting and will offer greater pay for better value and outcomes versus volume. For example, under the Clinical Process of Care Domain for pneumonia and congestive heart failure, smoking-cessation counseling is a key element. Smoking-cessation counseling in the inpatient setting is a critical element in the clinical process scorecard that impacts reimbursement. That's a *golden opportunity* for RTs. We can go up to the patient's room and provide a brief smoking-cessation counseling session, and then the hospital can check off "done" on that Clinical Process of Care Domain.

Of course, the ACA isn't the only thing driving our opportunities to add value. As noted earlier, reducing expenses also remains an important strategy. We can do that by leveraging new technology and more cost-effective technology to our advantage. Here at the University of California, San Diego (UCSD) Health System, we saved $430,000 a year by offering a less expensive aerosolized medication as an alternative to nitric oxide. We saved another $90,000 by avoiding the use of high-cost metered-dose inhalers in cases where less costly unit-dose solution would treat the patient just as effectively.

We can also take on new clinical roles that fit within the RT's scope of practice. By consolidating services under the respiratory care umbrella, hospitals can save on administrative costs and we can ensure that our RTs are viewed as indispensable. We've done that at UCSD, too. We saved $158,000 in administrative expenses by bringing our pulmonary rehabilitation and pulmonary function

AARC Resources Can Help You "Add Value"

Identifying opportunities to add value to your respiratory care department is one thing. Turning those opportunities into fully functioning services is another. The AARC has a number of resources that can help.

- **Affordable Care Act Best Practices Community:** Hosted on AARConnect **(http://connect.aarc.org)**, this is a place where AARC members can come together to share the new programs and services they have implemented to address provisions in the Affordable Care Act (ACA).

- **Clinical Practice Guidelines:** The AARC's CPGs **(www.rcjournal.com/cpgs/)** can provide the starting point for the development of protocols in your facility.

- **Uniform Reporting Manual:** Updated in 2012, our "AARC Uniform Reporting Manual for Respiratory Care" **(https://store.aarc.org/detail.aspx?id=SW0028)** contains the time standards you need to evaluate staff productivity and make budgeting decisions. In addition to inpatient hospital services, the updated version also includes pulmonary rehabilitation services along with echo/noninvasive cardiology, blood gas, pulmonary diagnostics, sleep disorders, and hyperbaric medicine labs.

- **AARC Benchmarking:** Created by RTs, for RTs, the AARC benchmarking system **(www.aarc.org/resources/benchmarking/)** provides accurate data to support administrative decisions and identify and promote best professional practices. If you see a best practice you would like to emulate, simply pick up the phone and call the manager who implemented it.

- **Pulmonary Rehabilitation Program Toolkit:** Whether you have an existing pulmonary rehab program or want to start one, this toolkit **(www.aarc.org/resources/pulmonary_rehab_toolkit/)** will walk you through the process of setting the charge for G0424 — the code assigned to Medicare's pulmonary rehabilitation program benefit.

- **AARC Management Section:** Join the Management Section **(www.aarc.org/sections/management)** and you can take advantage of numerous ways to pick the brains of your colleagues who may have already implemented the value-added services you are considering, including a dedicated discussion list on AARConnect.

departments into the respiratory care department. Another $150,000 went back into the hospital coffers when we incorporated inpatient EKGs into our department.

It is also important to keep in mind that respiratory care protocols are a must and remain the single most important tool we have to demonstrate our unique and unquestionable value across the board. RC protocols have been shown time and again to reduce unnecessary care and ensure necessary and appropriate care is delivered to the patient in a timely manner. Both of those factors are critical to our hospitals in this era where costs must be contained while quality care and patient satisfaction is significantly improved. These protocols save on costs as well. UCSD realized $600,000 in savings following the initiation of patient-driven protocols and has held those gains since 1994.

Resource No. 1

As we all strive to add value to our departments, we need to remember that we don't have to go it alone. The AARC has a number of resources we can use to enhance our worth to our facilities.

Finally, don't forget to tap into the No. 1 resource every department has, and that is the respiratory therapists on staff. Here at UCSD, staff members play a critical role in decision making. Indeed, without their full participation and support, adding value to my department would be like trying to watch a movie on my 2003-era cell phone. ■

About the Author

Richard M. Ford, BS, RRT, FAARC, is director of respiratory services at the University of California San Diego Health System in San Diego, CA. This article was adapted from one of his recent AARC meeting presentations.

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

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

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

AARC Election 2014

All Active and Life members of the American Association for Respiratory Care will soon vote for the candidates running for 2014 officer and director positions in the AARC leadership on an online secure website.

As an AARC member, you have the important responsibility of choosing individuals to lead the profession and our professional association. All of the candidates are introduced briefly here in *AARC Times*.

A biographical sketch about each candidate, and their answers to questions posed by the AARC Elections Committee, are available for your review at www.aarc.org/member_services/election14/. You may review candidate biographies beginning Aug. 12, 2013. The actual voting site will not be activated until Sept. 1, 2013, and voting will continue through Sept. 30, 2013. All AARC members who are eligible to vote will sign on with their member number and password. Only Active and Life members of each specialty section may vote for the chair of their respective sections.

If you cannot access information online, contact the AARC Executive Office to request a paper ballot: AARC Elections Committee, 9425 N. MacArthur Blvd., Suite 100, Irving, TX 75063-4706, (972) 243-2272, Fax (972) 484-2720.

The secure election website includes a ballot for you to cast your vote for each candidate. Please be sure to read through all the biographical information and questions the candidates have answered online before proceeding to the ballot web page for casting your votes. Your thoughtful consideration of this information before voting will help ensure the most qualified people are chosen to lead your professional association. ■

President-Elect

Frank Salvatore, MBA, RRT, FAARC
Director of Respiratory, Sleep Medicine, and Wound Care Services
Orange Regional Medical Center
Middletown, NY

Colleen Schabacker, BA, RRT, FAARC
Director of Respiratory Care
Cookeville Regional Medical Center
Cookeville, TN

All AARC election candidate information is available beginning Aug. 12 at www.aarc.org/member_services/election14/. Then cast your vote between Sept. 1–30.

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Bill Lamb, BS, RRT, CPFT, FAARC
National Clinical Manager
Ohio Medical Corp
Gurnee, IL

John Lindsey, MEd, RRT-NPS
Director, Respiratory Care/ NeuroDiagnostics
Mercy Hospital
Hot Springs, AR

Camden McLaughlin, BS, FAARC
CEO/President
MEDIAS, Inc., Sleep Medicine Services
Blacksburg, VA

Curt Merriman, BA, RRT, CPFT
VP, Marketing and Sales
C.O.R.E. Respiratory Services
Burnsville, MN

Karen Schell, DHSc, RRT-NPS, RPFT, RPSGT, AE-C, CTTS
Director, Cardiopulmonary Services
Newman Regional Health
Emporia, KS

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Respiratory Therapy Clinical Research Coordinator
Cincinnati Children's Medical Center
Cincinnati, OH

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Supervisor, Adult Critical Care
UnityPoint Health
Des Moines, IA

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Pulmonary Diagnostics & Respiratory Therapy Services
University of Virginia Medical Center
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Special Pulmonary Laboratory
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Kevin McCarthy, RPFT
Manager, Pulmonary Function Laboratories
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Georgianna Sergakis, PhD, RRT, CTTS
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Online Instructor
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All AARC election candidate information is available beginning Aug. 12 at www.aarc.org/member_services/election14/. Then cast your vote between Sept. 1–30.

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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.**

Suctioning Alternative

The new CoughAssist T70 from Philips Respironics provides an effective, comfortable alternative to traditional suctioning and may minimize the risk of infections that can lead to hospital readmissions. The next-generation device clears secretions by gradually applying PAP to the airway and then rapidly shifting to negative air pressure, thus creating a high expiratory flow that simulates a deep, natural cough. Instead of introducing a suction catheter into the airway, air is delivered through a facemask, mouthpiece, or simple adapter that allows the device to function with an endotracheal or tracheostomy tube. www.philips.us/coughassistT70

Single Patient Use Nebulizer

The Aeroneb Solo is a compact, single patient use nebulizer that can be used for continuous and/or intermittent nebulization. Using a micropump nebulizer, the Aeroneb Solo produces a fine particle, low velocity aerosol optimized for targeted drug delivery. Its effective dose delivery of physician prescribed inhalation solutions makes it safe for use with all patient groups. The silent operation of the Aeroneb Solo allows it to be used in pediatric ICUs where noise levels are critical. www.aerogen.com/index.php?page=aeroneb-solo

New Ventilator

The HT70 Plus™ is the newest member of Newport Medical's HT70 family of ventilators. In addition to the clinical capabilities found on the HT70™, the HT70 Plus™ offers an on-airway flow sensor that provides expanded monitoring with alarms and the choice of flow or pressure trigger. The updated software includes waveform graphics, an oxygen cylinder usage calculator, and an internal battery use time estimator. The larger format color touchscreen makes navigation quick and easy; and the newly designed, patented, micro-piston technology eliminates the need for external compressed gas. www.ventilators.com/HT70Plus.asp

Hand-held Medical Suction

The Vortran RES-Q-VAC® Hand Held Medical Suction device is ideal for numerous settings in the hospital, including the ER, elevators, parking lot, hospital lobby, and patient transport. The device features wall suction level performance in a portable unit and is always ready to go, with no set up required and no batteries to recharge or replace. Powerful enough to suction in all situations, its patented 0.22 equivalent micron filter ensures maximum infection control. A complete range of sterile catheters is available to meet all requirements, and convenient one-handed operation makes it ideal for tracheostomy and ventilator patients. www.vortran.com

Auto Bilevel System

The latest addition to DeVilbiss Healthcare's IntelliPAP line is the IntelliPAP AutoBilevel system. The device incorporates the comfort of AutoAdjust® and Bilevel Technology to deliver comfortable therapy, particularly at higher prescription pressures. The IntelliPAP AutoBilevel automatically adjusts to the user's pressure requirements on both inhalation and exhalation, using the unique DeVilbiss AutoAdjust algorithm featuring event set measurement. www.devilbisshealthcare.com

Industry Watch

DeVilbiss Healthcare celebrates 125 years

DeVilbiss Healthcare is marking its 125th anniversary this year. The company was founded in 1888 by Dr. Allen DeVilbiss, a nose and throat specialist who invented the first atomizer in his backyard woodshed to replace the process of using a cotton swab to apply medication to patients' throats. "Over the years, DeVilbiss has undergone many significant developments in the respiratory products it manufactures, which are now distributed worldwide," notes company representative Christine Brown. "DeVilbiss Healthcare is proud to reach this 125-year milestone, offering products that improve the quality of life for the patients who use them."

GSK, Theravance announce FDA approval

According to GlaxoSmithKline plc and Theravance Inc., the FDA has approved BREO™ ELLIPTA™ as an inhaled long-term, once-daily maintenance treatment of airflow obstruction in patients with COPD, including chronic bronchitis and/or emphysema. It is also indicated to reduce exacerbations of COPD in patients with a history of exacerbations. BREO ELLIPTA is a combination of the inhaled corticosteroid, fluticasone furoate "FF," and the long-acting beta-2 agonist, vilanterol "VI" (FF/VI 100/25 mcg). "This approval means that we can now realize our plan to bring BREO ELLIPTA to appropriate COPD patients in the United States," says GSK representative Darrell Baker.

Dräger unveils new technology

Dräger unveiled the next generation of its handheld Infinity M540 monitor and Infinity CentralStation at the 2013 National Teaching Institute & Critical Care Exposition in Boston, MA, in May. According to the company, the monitor moves seamlessly from bedside to transport, providing continuous monitoring locally and at the Infinity CentralStation to reduce undetected events and support a more complete patient record. "Even during transport, the Wi-Fi enabled M540 continually captures and broadcasts patient data to the Infinity CentralStation," reports Vice President of Marketing Sam Larson. "This provides a continuous data record throughout the patient's stay that can be integrated with the hospital's IT systems and the patient's electronic medical record."

Ron Richard named CEO of InnoMed Technologies

InnoMed Technologies Inc. has appointed Ron F. Richard to the position of CEO. In his new position he will also oversee the sister companies of Mergenet Medical (which is gearing up to launch a HI-FLO therapy device) and Respcare Inc. Richard recently served as CEO for the Americas Division of (REKHEAP) REKA Health Inc. and has more than 30 years of experience in the health care industry, working as a clinician in respiratory care as well as in sales, marketing, product development, and strategic planning. "I'm very excited about joining the InnoMed team, as they have been innovative in the field of sleep and respiratory care for many years," Richard was quoted as saying.

AARC members to study more appropriate use of nebs at UCSF

AARC members Brian Smith, RRT, and Brian Daniel, RRT, are part of a team at the University of California, San Francisco that has just received an award of up to $50,000 through the "Caring Wisely" initiative underway at the university's Center for Healthcare Value. Through a project titled "Nebs No More After 24," their goal is to decrease nebulized bronchodilator therapy usage in all hospitalized patients by at least 15%, provide better patient education on proper MDI self-administration, and improve physician and nursing knowledge regarding the use of appropriate respiratory therapies. The project is one of two to receive the award from a field of 20 proposals submitted to the initiative.

Ablynx studies severe allergic asthma treatment

Ablynx has initiated preclinical development of its anti-IgE Nanobody®, ALX-0962, for the treatment of severe allergic asthma with the goal of commencing Phase I

clinical development in the second half of 2014. ALX-0962 consists of a highly potent anti-IgE Nanobody with a unique dual mode of action together with a serum albumin binding Nanobody for *in vivo* plasma half-life extension. Due to the Nanobody's potency and dual mode of action, Ablynx believes that ALX-0962 could address a wider patient population, including those currently not eligible to be treated with omalizumab because of their high IgE-to-body weight ratios. Furthermore, the company says ALX-0962 has the potential to exhibit a better safety profile, have a faster onset of action, and offer more convenient dosing regimens.

Hill-Rom receives FDA approval to market its new technology

Hill-Rom Holdings Inc. has received 510(k) clearance from the FDA to market the MetaNeb 4.0 System, the company's latest advancement in airway clearance technology. Delivering therapy through airway oscillation and continuous pressure, the company notes the MetaNeb 4.0 System helps to enhance normal mucus clearance from the lungs, delivers lung expansion therapy, and assists in the treatment and prevention of pulmonary atelectasis. The system also has the ability to provide supplemental oxygen when used with compressed oxygen. "The design enhancements to the MetaNeb System represent another great example of Hill-Rom's dedication to improving outcomes for patients and their caregivers," says Senior Vice President Greg Pritchard.

VentriPoint Diagnostics' PAH submission under FDA review

VentriPoint Diagnostics has received a short list of suggestions, clarifications, and requests for additional information from the FDA to complete the review of the company's pulmonary arterial hypertension (PAH) 510(k) submission for VMS™, a diagnostic tool for measuring right ventricle heart function. "We are very pleased the FDA has reviewed our submission so expeditiously, and we now have a small number of modifications to the filing to prepare," says VentriPoint CEO Dr. George Adams. VMS is already approved for clinical use in Canada and Europe.

Picomole reports 98.5% accuracy for lung cancer breath test

According to Picomole Inc., its breath test for lung cancer was 98.5% accurate in preliminary tests, making it more accurate than any other technique currently used for the detection of lung cancer. The Picomole breath test is based on the quantitative analysis of a small set of trace chemicals found in exhaled breath samples. According to the company, the breath samples were analyzed using LISA™ (Laser Infrared Sample Analysis), a new analytical method recently patented by Picomole scientists. The pilot study of 40 clinical samples included healthy controls as well as patients diagnosed with other pulmonary diseases. The results indicated the Picomole breath test had a sensitivity of 100% and a specificity of 97% in the detection of lung cancer.

Ingen acquires telecom company

Ingen Technologies Inc. has acquired ATMC Inc., a Southern California-based telecommunications company. "Ingen is diversifying its portfolio of industries to include medical and telecommunications," Chairman Gary B. Tilden was quoted as saying. "Our future objectives are to combine our medical technologies with the telecommunications industry with a proprietary product, SaraS-One, for consumers who are using handheld multi-media devices, such as the digital mobile phone technology, to access online noninvasive therapy and physician consultations."

Big Tobacco loses in court

A Palm Beach County jury has found three tobacco companies partly responsible for a grandmother's COPD, emphysema, and lung cancer death, awarding more than $2 million in actual damages and for pain and suffering. The plaintiffs, Delray Beach resident David Cohen, 92, and the estate of his wife, Helen Cohen, claimed her smoking caused her chronic illness and eventual death. The jury found R.J. Reynolds Tobacco Company, Lorillard Tobacco Company, and Liggett Group LLC, mostly responsible for her 2006 death, noting that she was addicted to the nicotine found in cigarettes.

DBV Technologies partners with Stallergenes

DBV Technologies has entered into a strategic research partnership with Stallergenes S.A., a worldwide leader in allergen immunotherapy. DBV will conduct all preclinical work, up to proof-of-concept studies, using its skin patch Viaskin® and Stallergenes' aeroallergens. Stallergenes will finance all of DBV's research on these aeroallergens and will have development and commercialization rights. In the coming months, the parties will enter into license agreements for each aeroallergen, defining the opt-in terms for development and commercialization.

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

RC Currents

IN THE NEWS

AARC Launches Online Exam Preparation Course

Respiratory care is a challenging profession, so it should come as no surprise to anyone that the exams administered by the National Board for Respiratory Care to validate competency are challenging as well. Preparing for these exams takes perseverance and discipline, and that is even more true when preparing for the advanced-level RRT exam. Since the entry-level CRT credential is required for state licensure, new RTs have to study hard and earn the credential. Too many people, however, decide to take a breather after earning their CRT and put the RRT credential on the back burner "for now."

In today's increasingly competitive job market, that would be a big mistake because as health care organizations have more choices in hiring and promoting, they are just naturally turning to RTs who have earned the advanced-level credential. And as any RT who has postponed the RRT exam will tell you, it only gets harder to prepare for it as the years go by and life intervenes. The AARC designed its new Exam Prep Course to help RTs at all levels get past the stumbling blocks. The online course offers everything a newly graduating RT needs to study to pass the CRT exam, then goes on to cover content on the advanced-level RRT exam as well.

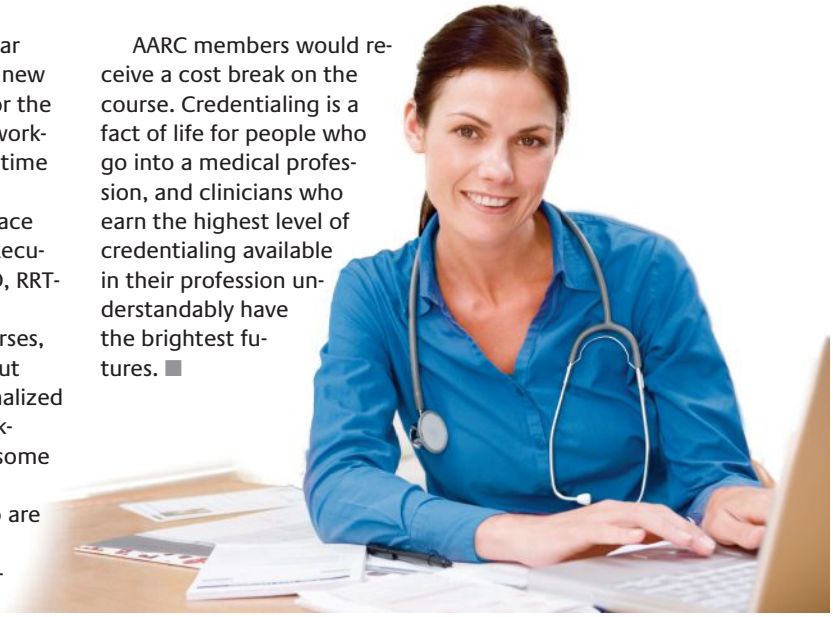
Since the course is accessible for one full year after enrollment, it serves as a springboard for new graduates seeking to quickly follow up study for the CRT exam with study for the RRT. It also gives working therapists with full and busy lives plenty of time to finally earn that advanced level credential.

"We call it a program that is at your own place and at your own pace," says AARC Associate Executive Director-Education Shawna Strickland, PhD, RRT-NPS, FAARC. That level of convenience sets the course apart from traditional registry prep courses, and she says other factors also make it stand out from the crowd: Every enrollee receives personalized materials based on his own strengths and weaknesses, and the course module videos feature some of the biggest names in the profession.

The latter is especially beneficial to RTs who are studying for the advanced level RRT because these well-known individuals bring a level of insight to exam prep that is missing in typical courses. "The AARC wants participants not only to pass the exams but to think like Registered Respiratory Therapists and positively affect their practice at the bedside," Dr. Strickland says. Here's a quick overview of what RTs would receive upon enrollment for Exam Prep:

- Accessibility for 365 days
- Free access to NBRC CRT and/or written RRT practice exams
- A personalized study prescription based on actual NBRC practice test results
- Over 28 hours of video instruction (including PDF handouts) from top educators, respiratory therapists, and physicians
- Study materials addressing all 17 categories in the NBRC CRT/RRT test matrix
- Option to view study modules as many times as desired. View all modules or just those recommended from the prescription
- Tips for developing excellent test-taking skills
- Opportunity for currently credentialed therapists to earn continuing education credit by viewing the instructional modules and passing a post-test.

AARC members would receive a cost break on the course. Credentialing is a fact of life for people who go into a medical profession, and clinicians who earn the highest level of credentialing available in their profession understandably have the brightest futures. ■



Best Practices Community Launched

AARC has launched an Affordable Care Act Best Practices repository, a community on AARConnect for you to share information and documents. With the looming implementation of the Affordable Care Act (ACA) and the readmissions penalties and payment reductions expected to challenge this profession, a member-to-member best practices community will serve as a clearinghouse for ideas.

"The AARC Board hopes that members will freely share implemented programs and outcomes that showcase the respiratory therapist in the untraditional roles of disease manager, patient educator, and discharge planner," says AARC President George Gaebler, MSEd, RRT, FAARC. "This repository of best practices will better position the respiratory therapist to add meaningful value in their respective organization."

These best practice ideas may take the form of an inpatient or outpatient protocol, COPD admission/readmission order sets, medication protocols, and more. Once these are collected, they will be vetted and made available to AARC members to use in designing their own programs.

For more information on submitting ideas or joining the ACA Best Practices community, log on to www.aarc.org/headlines/13/05/best_practices_community/. ■

"New Members" Column Now Online

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

RC Week 2013 — Bringing Breath to Life

RC Week, celebrated Oct. 20–26, is that time of year when respiratory care professionals everywhere are honored for their contributions. This year's theme, Bringing Breath to Life, reflects what respiratory therapists do each and every day. Share your enthusiasm in your chosen profession by planning events large or small for recognition, fun, and awareness with your RC team, your patients, your community, local students, and more. As the official sponsor for Respiratory Care Week, the AARC provides a great website at www.AARC.org/rcweek. The site is packed with event ideas, planning tips, photo sharing, and more.

BRINGING Breath TO life RESPIRATORY THERAPISTS

Visit the 2013 RC Week store at www.aarc.org/rcstore for a complete line of decorative items, gifts, t-shirts, and other product choices of official themed items.

RC Week products are offered in partnership with Jim Coleman Ltd. ■

Colorado Members go to State Capitol for World Asthma Day

Gov. John Hickenlooper performs a lung function test while Edna Fiore and RT student Grace Noynay look on.

World Asthma Day offers a great opportunity for respiratory therapists to educate their elected officials about asthma and other lung health issues, and that's just what the Colorado Society for Respiratory Care (CSRC) has been doing for several years. The most recent event, held May 7 at the state capitol in Denver, drew six CSRC members, 17 students from Pickens Technical College, one student from Concorde College, and long-time patient advocate Edna Fiore — all of whom were especially impressed when Gov. John Hickenlooper came by their table to take part in the lung testing they were offering to legislators and the public.

"The students thought this was a fun event, especially when the governor came to the table," says CSRC President-elect Jamie Sahli, BS, RRT, AE-C. "They really enjoyed getting out of the classroom and sharing what they have been learning with the public."

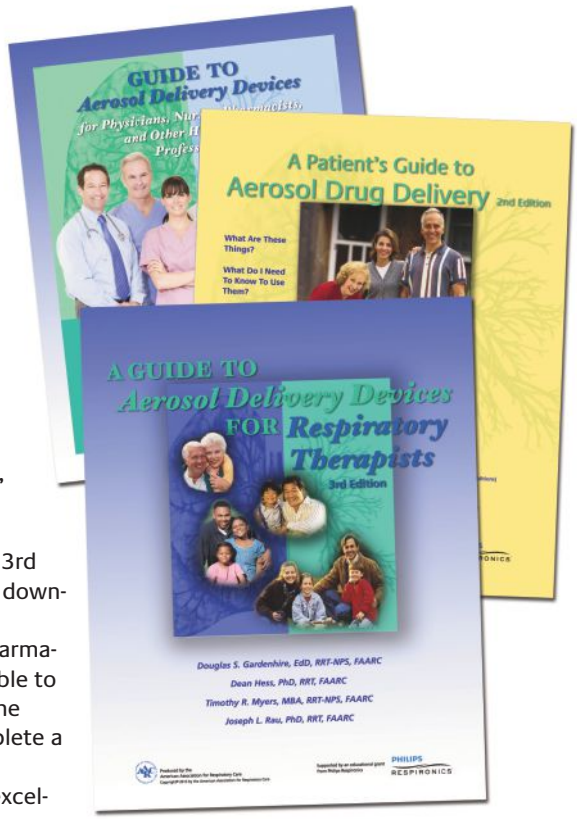
Sahli says their visit with the governor gave them the chance to educate him on who respiratory therapists are and what they do for the health of Coloradoans. "We explained to him that we were respiratory therapists and students with the CSRC and that we play a large role in asthma management with patients in the state of Colorado," she explains. Gov. Hickenlooper then performed a peak flow test and continued to visit with the AARC members until an aide escorted him away to other pursuits. "He's very personable and willing to learn about public affairs."

Patient advocate Edna Fiore (center) joined CSRC members Jamie Sahli (left) and Grace Noynay at the WAD event.

In addition to speaking to the governor about their role in asthma, the RTs also visited with members of the legislature about their licensure law, which is up for sunset review in 2015. "We told a few elected officials about the importance of our profession, and they stated that they appreciated us educating them and would watch for our bill next year," says Sahli.

This event at the state capitol is accompanied every May by a similar outing on World COPD Day in the fall, and Sahli says both of these excursions pay off for her state society in a heightened awareness of respiratory therapists. During the fall event, for example, CSRC therapists performed a spirometry test on Lt. Gov. Joseph Garcia, so now the state society has had personal contact with both of the top officials in Colorado, not to mention many of its legislators. "They all seem interested in anything health care, which is such a big area of political focus right now," says the AARC member. ■

Aerosol Resources



Aerosol therapy is considered to be one of the cornerstones in the management and treatment of chronic respiratory disease and exemplifies the nuances of both the art and science of 21st century medicine. As chronic respiratory disease continues to grow in prevalence and consume a large portion of health care dollars, an explicit understanding of the science of aerosol therapy, the nuances of the different delivery devices, and the ability to provide accurate and reliable education to patients become increasingly important.

The AARC has acknowledged these simplistic but difficult objectives for many years as part of the core scope of clinical practice for respiratory therapists. Several years ago, the strategic decision was made to develop a comprehensive set of aerosol delivery device guidelines to help achieve these objectives with clinicians and patients alike. Now in their updated and revised editions, the AARC is proud to present the following three aerosol guides:

- "A Guide to Aerosol Delivery Devices for Respiratory Therapists – 3rd Edition" comes with six CRCE hours free to members and can be downloaded at www.aarc.org/resources/aerosol_resources/.
- The "Guide to Aerosol Delivery Devices for Physicians, Nurses, Pharmacists and Other Health Care Professionals – 2nd Edition" is available to AARC members at www.aarc.org/resources/aerosol_resources/. The same site provides access to non-members where they can complete a form and receive an emailed copy.
- "A Patient's Guide to Aerosol Drug Delivery – 2nd Edition" is an excellent education tool that your patients will thank you for. It can be accessed at www.aarc.org/resources/aerosol_resources/. ■

Enter the 2013 AARC Photo Contest

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

Team-based Care Is Imperative for Rapid-response Teams

Clinical expertise among its members is paramount to the success of any rapid-response team but so is strong teamwork and good communication skills, report California researchers who explored team structure, organizational culture, expertise, communication, and teamwork as they relate to these teams.

The investigators found that while rapid-response teams functioned well in managing patients at risk for or in crisis, the day-to-day fluidity of team members limited opportunities to develop relationships or team skills. Team training also fell short when it came to addressing interpersonal communication, collaboration, and teamwork — skills even more important for rapid-response team members than other clinicians who may work together under less stressful or time-pressured conditions.

"Team-based care delivery is not an optional approach in the quest to achieve safe and reliable care for every patient, every time — it is an imperative," study author Linda Searle Leach, PhD, RN, assistant professor in the school of nursing at UCLA, was quoted as saying. The research appeared in the May edition of the *American Journal of Critical Care*. ■

Leap of Faith

COPD hasn't grounded Matt Steen.

COPD patient Matt Steen's love of skydiving came early in life; and by the time he was 16, he had made his first jump. From there came a stint in the military, where he served in the Special Forces and was a paratrooper during the Vietnam War. But when he learned he had COPD back in 1980, he figured his skydiving days were behind him. When he began experiencing exacerbations from the condition in 2000, he was sure he'd never again do any of the things he loved, let alone jump from a plane.

He could not have been more wrong. After finally kicking his two-pack-per-day smoking habit in 2003 and enrolling in the pulmonary rehabilitation program at Upper Valley Medical Center (UVMC) in Troy, OH, things slowly began to change for the better. "Matt credits taking control of his disease and still being alive to the helpful and caring staff in the department," says Marcia Smith, RRT, RPFT, one of Matt's RTs in the program. "He feels that the education he received helps keep his breathing under control and has overall improved his quality of life."

When the program ended, he continued to attend rehabilitation three days a week as a phase III maintenance patient; and as his strength and stamina continued to improve, he decided that all the doom and gloom he had foreseen for himself when COPD first became a part of his life wasn't as bad as it had once seemed. "I owe a great deal to the RTs who have, over the past 10 years, helped me to learn that I don't have to give up simply because I am a COPD patient," says Matt. "The professional knowledge and abilities and caring attitudes of these ladies is without a doubt the main reason that not only myself, but many other UVMC patients are still able to lead fulfilled and productive lives."

Matt credits the RTs in his pulmonary rehab program with helping him stay in good shape.

For Matt, "fulfilled and productive" went to the extreme in the summer of 2011 when he decided to take a leap of faith — literally as well as figuratively. The tandem jump you see pictured here took place in Middletown, OH. Smith says Matt talked with his physician about making the dive, who didn't have any objections. So plans went forward, with a pulmonary rehab lead nurse-volunteer paramedic (who was scheduled to make her first dive that day too) in attendance to help in case Matt had any medical needs.

"One of the main reasons I did the jump was so that my grandchildren, who weren't even born when I made my last jump, could see me do it, even if only in a video," says Matt. He figured his experience might inspire other COPD patients as well. "If seeing that I was able to make a parachute jump while still taking treatments for COPD helps other patients realize that they don't have to quit enjoying life when they have COPD, then I am very happy to share my story with them."

More jumps are not out of the question for Matt, but his next trip into the skies will be a little more laid back. "The next thing planned is a hot air balloon ride," says Smith. ■

▶ Strange But True…

The nose knows: Rats are well known for spreading disease. But finding it? According to a group in Tanzania, they can. They are training jumbo-size African rodents to sniff out tuberculosis in a patient's sputum. So far, trained rats have been able to accurately identify TB about two-thirds of the time. The skill could be useful in countries where sophisticated testing is unavailable.

Desperate measures: A Sacramento woman was so desperate to quit smoking that she decided to go to the one place where she knew she could never smoke: jail. The woman got herself incarcerated by walking up to a police officer and slapping him in the face.

From good to bad: HDL cholesterol is known to help the heart, but that might not be the case for people who breathe in excessive amounts of motor vehicle emissions. Researchers from UCLA and elsewhere find the inhalation of emissions significantly lowers the protective antioxidant and anti-inflammatory properties of HDL. (June issue of *Arteriosclerosis, Thrombosis and Vascular Biology*)

Rising from the ashes: Physicians from the University of Michigan recently made a splint out of biological material to carve a path through the blocked airway of an infant suffering from a rare obstruction in the lungs called bronchial malacia. That's remarkable enough, but the really amazing part is the splint was created on a 3D printer that can engineer structures using a powder known as polycaprolactone. The physician on the case termed it "taking dust and using it to build body parts."

The origin of itch: Could that itch you feel on your arm originate in your spinal cord? According to National Institutes of Health researchers publishing in *Science*, the answer may be yes. In mouse studies, they discovered that a small molecule released in the spinal cord triggers a process that is later experienced in the brain as the sensation of itch. The finding could lead to new treatments for chronic conditions such as eczema and psoriasis. ■

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

- Updated App Streamlines Communications — www.aarc.org/headlines/13/06/membercentric/
- Palliative Care Roundtable Forms — www.aarc.org/headlines/13/05/palliative_care.cfm
- AARC Launches Exam Prep Course — www.aarc.org/headlines/13/05/exam_prep.cfm

COPD + Allergies = Trouble

Current COPD guidelines do not address the role allergic disease may play in the condition, but maybe they should. Researchers from the Johns Hopkins Asthma & Allergy Center have found that COPD patients with an allergic phenotype or allergic sensitization are more likely to suffer from respiratory symptoms that could exacerbate their COPD.

The study involved data from two cohorts:

- 296 COPD patients with an allergic phenotype (defined as self-reported doctor-diagnosed hay fever or allergic upper airway symptoms) who were included in the National Health and Nutrition Survey III (NHANES III)
- 77 former smokers with COPD.

Patients in the NHANES III cohort were more likely to wheeze, have chronic cough, and have chronic phlegm. They also had a significantly increased risk of experiencing a COPD exacerbation that required an acute physician visit.

Patients in the other cohort were significantly more likely to wheeze, experience nighttime awakening due to cough, and have COPD exacerbations requiring antibiotic treatment or an acute visit to the physician.

Although emphasizing that causality could not be determined in this cross-sectional analysis, study author Nadia N. Hansel, MD, MPH, was quoted as saying: "Our findings in two independent populations that allergic disease is associated with greater severity of COPD suggest that treatment of active allergic disease or avoidance of allergy triggers may help improve respiratory symptoms in these patients." The study was published online ahead of print in the *American Journal of Respiratory and Critical Care Medicine* in May. ■

A Privileged Life

AARC member Paul Andreas was pleased to bear witness to this impressive catch on the part of his friend and patient, Bob Paulson.

As a lifelong fisherman, it was probably inevitable that Paul Andreas, BS, CRT, would develop a special bond with his patient Robert Paulson. "Bob owned a cabin on Lake of the Woods in the far northern part of Minnesota," explains the clinical services supervisor at Sanford Health HealthCare Accessories in Bemidji, MN, "and he loved to fish just like I do."

A local pharmacist and CPAP patient, Bob Paulson first met Andreas when the AARC member was employed at a local home care company. Over the years of working together to treat Bob's condition and sharing their fishing stories, the two became fast friends. When Bob eventually needed supplemental oxygen to treat his emphysema, his respiratory therapist was always there to help him with whatever he needed to maintain an active lifestyle. As the disease progressed and Bob became increasingly hesitant to go out on his beloved lake alone, Andreas was happy to become his fishing buddy, too.

"Bob was at home on the lake and at peace in his life there," says Andreas. "But like most of our oxygen-dependent people, the increasing shortness of breath brought on anxiety and he was afraid to be alone on the lake. He asked me to go with him." The two made several excursions over the years, always splitting expenses as they went. But for Andreas, the value in these trips could never be counted out in dollars.

"What I got out of the trip was a deeper understanding of life both for my patients and myself. In the world of health care today, we are having to work so hard to meet budget requirements and focus on the business of health care that we not only forget to live life ourselves but that these are real people that we take care of," says the AARC member. "When they leave our office, they take their disease with them; and for them it is a 24-7 life with shortness of breath and chronic cough."

Andreas still remembers the day Bob caught the seven-pound great walleye pictured here. "The thrill in catching a fish like that is being able to share the moment with someone," he says. Andreas was thrilled to be the person who was there to share that special moment with Bob.

Robert Paulson passed away last Christmas, but his memory will live on not only in this photo Andreas snapped of him to mark his fishing fame, but also in the heart of his respiratory therapist, who will always remember the appreciation his patient had for the things he was still able to do, despite his chronic lung condition. "One evening as we were sitting in his cabin after fishing he said to me that 'it is a privilege to be here,'" recalls the therapist. "He was not talking about his cabin, he was referring to how unbelievably privileged he was to experience life in this way." ■

Transitions

Amy Weiford, MPA, RRT, has received the DMACC Alumni Early Achievement Award from Des Moines Area Community College in Des Moines, IA. As director of clinical education at Hawkeye Community College in Waterloo, IA, she serves on the boards of the HCC Foundation, National Board for Respiratory Care, and the Iowa Society for Respiratory Care. She is also helping to ensure adequate health care during an emergency situation through her membership on one of the government's Disaster Medical Assistance Teams.

Dennis Pfleiger, BSRC, RRT, has been named vice president of health care services at Einstein Medical Center Montgomery in East Norriton, PA. In his new position he will be responsible for numerous departments and services, including materials management, facilities and security, patient access/patient financial services, health information management, biomedical engineering, and environmental services. Pfleiger comes to the position from Sacred Heart Hospital in Allentown, where he served as vice president of operations/business development.

Kay Raffield, BHS, RRT, passed away on May 7. A respiratory therapist at the Medical Center of Central Georgia in Macon, she is remembered by her many colleagues for her work with the Georgia Society for Respiratory Care and her support for students at her alma mater, Middle Georgia State College (MGSC). MGSC students memorialized Raffield by wearing lavender ribbons at their recent pinning ceremony and lighting a candle in her honor. (Photo 1)


1

Curtis Malone, BS, RRT, was tragically killed in an automobile accident on April 29. He had served as clinical director of education at Darton State College in Albany, GA.

Edward D. Murphy, RRT, CPFT, passed away in April at age 76. Murphy began his long and distinguished career in respiratory therapy in 1957 at The Ohio State University Hospitals in Columbus, OH, and moved up the ranks from there, serving as an assistant director of respiratory care at Miami Valley Hospital in Dayton, OH, in the late 1960s to early 1970s before rejoining Ohio State as director of respiratory therapy in 1972. From there he served as RT director at Mt. Carmel Medical Center in Columbus from 1975–1990. He had also served as president of the Ohio Valley Chapter, one of three organizations that merged to become the Ohio Society for Respiratory Care. After retiring from his management position he continued to work as a staff therapist, first at Grant Medical Center in Columbus and then at Ohio State until this year.

Albert Marflak died on April 14. A Vietnam veteran who earned the Purple Heart and National Defense Service, Vietnam Service, and Vietnam Campaign medals while in the Navy, Marflak graduated from the RT program at York College and St. Joseph's Hospital in Lancaster, PA, after his discharge from the service. He spent the next 40 years practicing in the profession, the last 25 at Memorial Medical Center in Savannah, GA. He had retired in 2011.

Donald J. Artes, BA, RRT-NPS, passed away in May after complications from an infection. A neonatal-pediatric therapist at Sinai Hospital in Baltimore, MD, at the time of his death, Artes also worked for many years at the University of Maryland Medical Center. He will be remembered by his many colleagues for his excellent care and his community service activities, which included medical mission trips to Ecuador. (Photo 2)


2

You can submit news about AARC members by going to www.AARC.org/transitions. ■

Asthma Management and Support Initiative Pays Off

Research led by investigators from the Center for Managing Chronic Disease at the University of Michigan School of Public Health has found that low-income children living in areas with wide-ranging support for improving asthma outcomes experience fewer hospitalizations and emergency department visits when compared with similar children in other communities.

The study examined health care utilization by low-income children ages 2–18 from 2002–2006 to see what effect the Allies Against Asthma initiative (established in 2002 with support from the Robert Wood Johnson Foundation) was having on the use of hospital inpatient units, ERs, and urgent care centers. Allies Against Asthma brought established asthma organizations, health care leaders, health departments, and local community and volunteer organizations together to work on policy, care coordination, environmental issues, and education. The goals were to improve health status and reduce health care utilization in children and teens with asthma. The study was published in the April issue of the *American Journal of Public Health*. ■

Augmentation Therapy Reduces Lung Density Loss in Alpha-1

The largest clinical trial to date to look at outcomes among alpha-1 antitrypsin deficiency (AATD) patients treated with alpha-1 proteinase inhibitor (A1-PI) augmentation therapy shows the treatment is effective. The randomized, placebo-controlled, double-blind, multinational, multicenter phase III/IV study compared the efficacy and safety of A1-PI with placebo in 180 subjects with emphysema due to AATD. Patients received A1-PI intravenously 60 mg/kg weekly or matching placebo for over two years.

The effect of A1-PI on the progression of emphysema was assessed by the decline of lung density as measured by CT scan. Changes in exercise capacity, symptoms score, and pulmonary exacerbation rate over two years were examined as well. No difference in baseline characteristics such as age and FEV_1 (forced expiratory volume in first second) were noted between the two groups. However, the annual rate of lung density loss was significantly less in A1-PI-treated patients. Changes in the other variables did not differ significantly between the groups, and adverse reactions were about the same as well. The study was presented at the 2013 American Thoracic Society International Conference in May. ■

Researchers Study Oxygen Saturation in Extreme Preemies

A new study out of Children's Hospital of Philadelphia and the University of Pennsylvania is shedding some light on the role oxygen saturation plays in the treatment of extremely preterm infants. The randomized, multinational trial included 1,201 infants with gestational ages of 23 weeks 0 days through 27 weeks 6 days who were enrolled within 24 hours of birth between December 2006 and August 2010. Follow-up assessments began in October 2008 and ended in August 2012.

Study participants were monitored until postmenstrual ages of 36–40 weeks using pulse oximeters that displayed saturations of either 3% above or below the true values. Caregivers adjusted the concentration of oxygen to achieve saturations between 88–92%, which produced two treatment groups with true target saturations of 85–89% or 91–95%. Alarms were triggered when displayed saturations decreased to 86% or increased to 94%.

The researchers found that targeting lower versus higher oxygen saturations had no significant effect on the rate of death or disability at 18 months. "Of the 578 infants with data for this outcome who were assigned to the lower target range, 298 (51.6%) died or survived with disability compared with 283 of the 569 infants (49.7%) assigned to the higher target range," write the authors. "Of the 585 infants with known vital status at 18 months in the lower saturation target group, 97 (16.6%) had died, compared with 88 of 577 (15.3%) in the higher saturation target group."

Targeting lower, compared with higher, saturations reduced the average postmenstrual age at last use of oxygen therapy but had no significant effect on any other outcomes, including the rate of severe retinopathy of prematurity. The study appeared in the May 5 edition of JAMA. ■

RT Student Members: Send Us Your Stories and Editorials

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

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

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

"r u having symptoms?"

Want to get the attention of your young patients with asthma? Try texting them, say researchers from the Georgia Institute of Technology. They found kids who were sent regular text messages asking questions about their symptoms or providing information about their asthma had improved pulmonary function and a better overall understanding of asthma when compared to their peers.

In two studies, the researchers randomly assigned 30 asthmatic children from a private pediatric pulmonology clinic in Atlanta to one of three groups: a control group that did not receive any text messages, a group that received text messages on alternate days, and a group that received text messages every day. The children were between 10–17 years old, owned a mobile phone, and could read at least at a fifth-grade level.

Over four months, the intervention groups received and responded to text messages 87% of the time, and the average response time was within 22 minutes. After the study, the research team analyzed patients who had follow-up visits with their physician and found that sending at least one text message a day, whether it was a question about symptoms or about asthma in general, improved clinical outcomes. The investigators presented their findings at the recent ACM SIGCHI Conference on Human Factors in Computing Systems 2013. ■

Improving Influenza Vaccination Rates

Hospital Corporation of America researchers report good results from the implementation of a program to increase influenza vaccination among clinical personnel at their facilities. Over the first three years the program was in operation, more than 90% of clinicians were vaccinated, a significant jump from the 58% vaccinated in 2008. Investigators in the study (published in the *Journal of Healthcare Quality* in April) cite these factors as contributing to their success:

- A multidisciplinary team designed and implemented the vaccination program and made certain it was evidence-based and supported by leaders and experts in various clinical disciplines.
- Corporate leadership communicated consistent patient safety messages and allowed program teams to focus on distributing resources and assisting facilities with program implementation.
- Several communication and employee education initiatives were utilized, including an influenza email account and corporate intranet to explain the rationale for immunization and address vaccination safety concerns.
- Rates of vaccination acceptances and declinations were communicated to leadership weekly, and policies were modified based on feedback. For example, three new vaccine options (nasal, high-dose, and intradermal) were added; and
- Supply-chain managers helped facilities with vaccine ordering and ensured timely delivery. ■

Classifieds

ADVERTISING SECTION

For Sale/For Rent

ACCS Study Guide
Oakes' ACCS Study Portal and Practice Exam, $34.95. Seven Oakes' books, plus one year online access to Oakes' Critical Care Library, all for $99. Visit www.RespiratoryUpdate.com and www.RespiratoryBooks.com.

AARC Times Classified Advertising Information & Requirements:

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

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

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

Recruitment Display Advertisements

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

AARC Times Photo Contest

Call for Entries

Go to http://tinyurl.com/72qfqt5

- Take the photo at your highest quality setting
- Email your photo by Oct. 15 to knauf@aarc.org or send a CD to: Photo Contest, _AARC Times_, 9425 N. MacArthur Blvd., Irving, TX 75063

- You must be an AARC member.
- Contest finalists will receive one year *FREE DUES* on membership renewal.
- Finalists will be in the Dec. 2013 issue for members to vote on.
- The winning photo will be on the March 2014 cover.
- All photos become the property of the AARC.
- You must provide a signed release form for everyone in the photo.
- Go to www.aarc.org and type *photo release* in the search box or have Karen fax you one. Call (972) 406-4661.
- If you have a story for the photo, please send that, too.

Calendar of Events

AARC & State Society Programs

July 24–26
Biloxi, MS
42nd Annual TriState Respiratory Care Conference
Contact: TSRCC Registrar, www.tsrcc.net

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

August 9
Richmond, VA
Virginia Society for Respiratory Care Capital City Symposium
Contact: Ken Ours, oursboy@gmail.com or www.vsrc.org/go/events

September 25–26
Sturbridge, MA
MSRC's 36th Annual Meeting
Contact: Valeri-Ann Bolduc, O2val@aol.com

September 25–27
Hot Springs, AR
42nd Annual ASRC State Meeting and Educational Seminar
Contact: John Lindsey, (501) 620-3281

September 26–27
Mars, PA
PSRC's Western Regional Conference
Contact: Thomas Lamphere, (215) 687-2904, www.psrc.net

September 27
Fredericksburg, VA
Virginia Society for Respiratory Care's Pediatric/Neonatal Conference
Contact: Tabatha Dragonberry, dragonberry@me.com or www.vsrc.org/go/events

September 30 – October 1
Frankenmuth, MI
Michigan Society for Respiratory Care's Fall Conference
Contact: (866) 989-6772

October 3–4
Indianapolis, IN
Indiana Society for Respiratory Care's 39th Annual Fall Seminar
Contact: Pat Ingle, (317) 962-5058

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

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

November 1
Urbandale, IA
Iowa Society for Respiratory Care's Annual Meeting
Contact: Amy Weiford, (319) 296-2329

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

December 5–6
Springfield, MO
MSRC's 9th Annual Fall Specialty Conference
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