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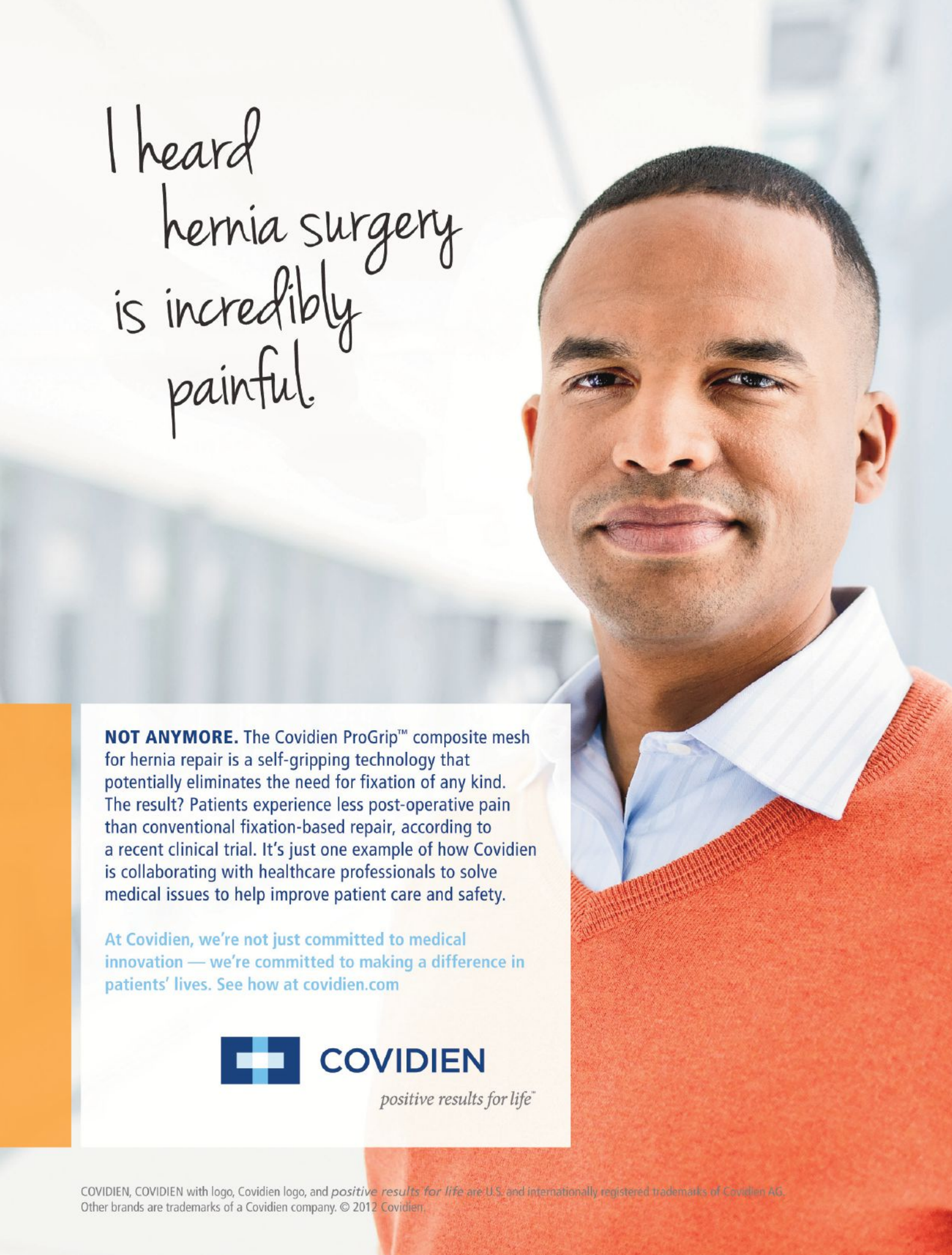

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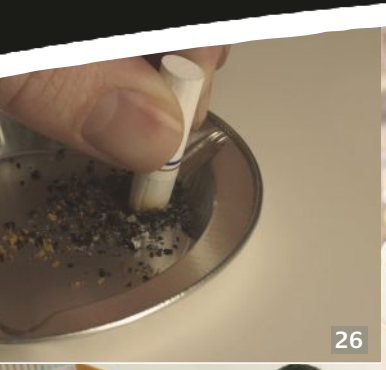

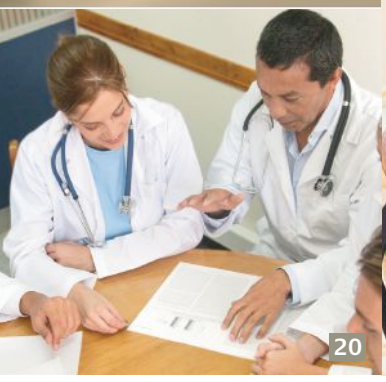

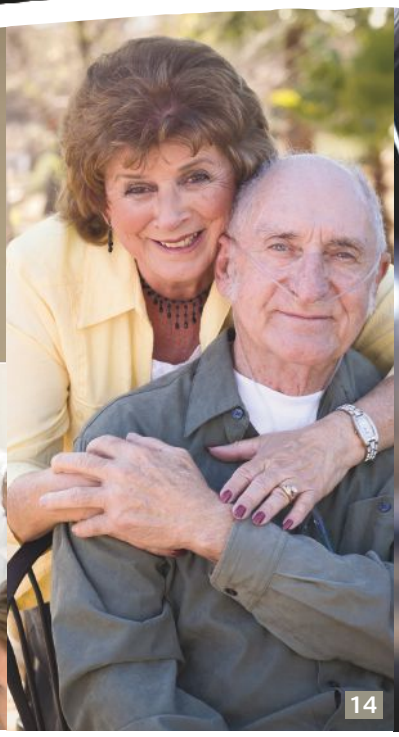

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AARC Strategic Plan

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

AARC Strategic Objectives

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

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

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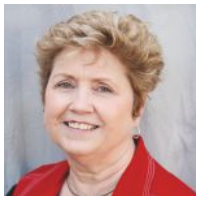

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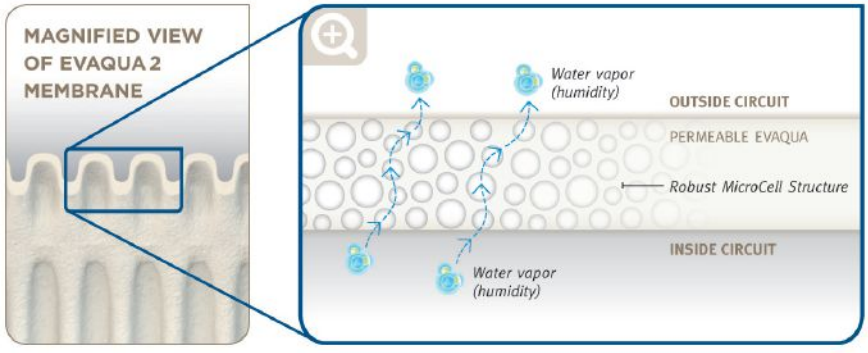

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Ventilation for Life

A Review of the Literature

The following studies on mechanical ventilation have been published within the last few months.

Which posture is best?

French investigators publishing ahead of print in *Intensive Care Medicine* on Oct. 24 took a closer look at the role posture plays in breathing effort among difficult-to-wean patients. The prospective, crossover, physiologic study involved 24 intubated patients on pressure support ventilation who had previously failed a spontaneous breathing trial or extubation episode. The median duration of mechanical ventilation was 25 days.

Patients were measured for breathing pattern, occlusion pressure, intrinsic positive end-expiratory pressure (PEEPi), inspiratory muscle effort, and work of breathing during ventilation in three postures: a seated position in bed simulating sitting in a chair, a semi-seated position where the patient was at a 45° angle, and the supine position. The positions were applied in random order. Results showed the lowest levels of effort and occlusion pressure with the semi-seated position, and patients reported this position was also most comfortable.

"A 45° position helps to unload the respiratory muscles, moderately reduces PEEPi, and is often considered as comfortable," write the authors. "The semi-seated position may help the weaning process in ventilator-dependent patients."

ECMO can be a bridge to lung transplantation for some

Extracorporeal membrane oxygenation (ECMO) is not considered an appropriate option for bridging to lung transplantation in many transplant centers, but according to Italian researchers it can be successful in certain patients. They compared outcomes among seven patients who received ECMO during spontaneous breathing with four who received it while on invasive mechanical ventilation, finding a significantly lower increase in the sequential organ failure assessment score for the spontaneously breathing patients during bridging.

Following lung transplantation, the spontaneously breathing patients required shorter times on invasive mechanical ventilation as well, and they also had shorter ICU and hospital stays. The one-year survival rate was significantly higher for the spontaneously breathing group, 85.7% versus 50%. The authors believe these results show that ECMO in spontaneously breathing patients is "a feasible, effective and safe bridge to lung transplantation." The study was published ahead of print by *Interactive Cardiovascular and Thoracic Surgery* on Oct. 24.

ADLs make a difference

COPD patients with higher activity of daily living (ADL) scores may be more likely to be weaned from mechanical ventilation after an acute exacerbation and less

Mask may beat prongs for preemies

A new study out of Ireland suggests premature infants fare better when receiving nasal continuous positive airway pressure (NCPAP) via a mask than they do when the therapy is given via nasal prongs. The research involved 120 infants born at less than 31 weeks gestation who were randomized to mask or prongs. Infants who met two of five criteria signifying a worsening condition were intubated and ventilated.

Among the infants receiving NCPAP via prongs, 52% were intubated within 72 hours. That compares to 28% of those randomized to receive NCPAP via mask. No other statistically significant differences were noted between the groups. "In premature infants, NCPAP was more effective at preventing intubation and ventilation within 72 hours of starting therapy when given via nasal masks compared with nasal prongs," conclude the investigators. The study was published ahead of print in *Pediatrics* on Oct. 22.

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likely to have succumbed to the disease at a six-month follow-up. That's the take-home message from researchers who studied 25 COPD patients admitted to the hospital with acute respiratory failure and placed on mechanical ventilation. Weaning was successful in 68% of the patients, and those patients had higher ADL scores. Overall, an ADL score of four or higher was associated with successful weaning in about three quarters of the cases, while an ADL score under four was associated with success in only about a quarter.

No differences were seen between the groups in pulmonary function tests, arterial blood gases collected during a period of clinical stability and at admission, and nutritional status. The mortality rate was 36% at six months, and patients with lower ADL scores were significantly more likely to have died. The researchers suggest adding the ADL score to any strategy aimed at predicting weaning success in these patients. They published their findings ahead of print in *BMC Pulmonary Medicine* on Oct. 18.

CDH: more surgery but not higher survival

British investigators who retrospectively analyzed all consecutive infants who were referred to two European pediatric surgical centers for treatment of congenital diaphragmatic hernia (CDH) over an 11-year period find more infants over time received surgical repair for the condition but that survival rates remained unchanged. The proportion of infants receiving high-frequency oscillatory ventilation, inhaled nitric oxide, or extracorporeal membrane oxygenation remained constant as well. The research involved 234 infants, of whom 205 were stabilized and underwent surgery. The survival rate was relatively high, at 79%. The study was published ahead of print in *Pediatric Surgery International* on Oct. 23.

Intervention pays off in lower incidence of pneumothorax

Researchers from Thomas Jefferson University Hospital in Philadelphia report good outcomes from a quality improvement project that was implemented in their neonatal ICU after benchmarking revealed their unit had an above average incidence of pneumothorax when compared to units in similar facilities. The project was divided into two phases. In the first, the investigators followed all very low birth weight (VLBW) infants for six months to gauge the incidence of pneumothorax. Cases were reviewed by a multidisciplinary team, which concluded that high tidal volumes (VTs) were noted around the time of pneumothorax.

In the second period, guidelines were implemented to improve monitoring and rapid feedback of VT and peak inspiratory pressure between nurses and clinicians. Infants were again followed for six months, and results showed a significant drop in the incidence of pneumothorax, which went from 10.4% in period one to just 2.6% in period two. The authors believe similar interventions targeting increased vigilance and real-time monitoring of VT and peak inspiratory pressure could help other hospitals reduce their pneumothorax rates in VLBW infants.

The study was published ahead of print in *Pediatrics* on Oct. 8.

ALI in the ED: more common than you think

U.S. investigators expected to find a low incidence of acute lung injury (ALI) among mechanically ventilated adult nontrauma patients treated in the emergency department, but instead noted that 8.7% of these patients met the criteria for ALI. The researchers reviewed the cases of 552 patients who received mechanical ventilation in the ED, finding that 134 met hypoxemia criteria. Among that number, 34 showed evidence of left atrial hypertension, which ruled out ALI based on the American-European Consensus Conference criteria. Chest radiography findings did not indicate ALI in 52, and two did not have chest radiography performed. In the remaining 46 patients, ALI criteria was met, and clinical evidence of ALI was noted in two additional patients who died in the ED.

The authors conclude, "Further study is required to determine which types of patients present to the ED with ALI, the extent to which lung protective ventilation is used, and the need for ED ventilator management algorithms." The research appeared in the September edition of *Academic Emergency Medicine*.

Nonpayment policies called into question

Do government programs aimed at discontinuing payment to hospitals for certain hospital-acquired conditions really lead to a drop in those conditions? That's the question Harvard researchers asked in a study that compared rates of two conditions affected by a Centers for Medicare and Medicaid Services (CMS) policy to reduce payments that was implemented in 2008 — central catheter-associated bloodstream infections and catheter-associated urinary tract infections — and one that was not — ventilator-associated pneumonia.

The researchers found decreasing secular trends for both the targeted and untargeted infections long before the nonpayment program was put into place and noted no differences in quarterly rates for any of the infections during the post-implementation period. They conclude, "We found no evidence that the 2008 CMS policy to reduce payments for central catheter-associated bloodstream infections and catheter-associated urinary tract infections had any measurable effect on infection rates in U.S. hospitals." They published their findings in the Oct. 11 edition of *The New England Journal of Medicine*. ■

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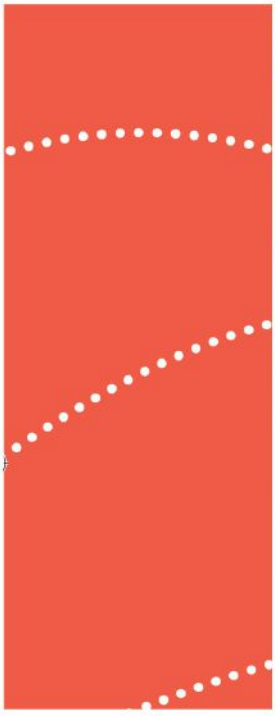

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Atypical Sleep-disordered Breathing Patients

by Suzanne Bollig, RRT-SDS, RPSGT, FAARC

In a study by Young and associates, 24% of men and 9% of women aged 30–60 years were estimated to have sleep-disordered breathing (SDB).[1] While diagnosis and treatment of obstructive sleep apnea (OSA) and central sleep apnea is perhaps most familiar to respiratory therapists and sleep technologists, there is another subset of patients with neuromuscular disease that can also develop significant respiratory compromise as a consequence of their disease. The incidence of SDB in these individuals is higher than in the general population, with one neuromuscular disorder clinic reporting up to 42% of their patients having sleep-related breathing disorders requiring intervention.[2] Neuromuscular disease can be associated with a compromise of ventilatory status; and in many instances, nocturnal ventilation is compromised before daytime symptoms or compromise occurs. Evaluation of these patients and eventual treatment of any identified sleep-related breathing disorder requires careful assessment of their underlying disorder, judicious use of available diagnostic tests, and familiarity with various therapeutic options.

about the author...

Suzanne Bollig, RRT-SDS, RPSGT, FAARC, is the manager of the Sleep Disorder and Neurodiagnostic Institute, Center for Health Improvement at Hays Medical Center in Hays, KS.

Overview

Patients with neuromuscular disease are at high risk for the development of sleep-disordered breathing due to the pathophysiology of their disease state combined with some of the normal changes in physical function that occur during sleep. In non-REM sleep, there is normally a decrease in minute ventilation and tidal volume with a slight increase seen in $PaCO_2$ and a slight decrease seen in oxygen saturation. In addition, rapid-eye movement (REM) sleep is normally associated with a reduction of muscle tone and increased breathing instability as well as decreased chemosensitivity to changes in $PaCO_2$ and PaO_2 levels. Due to the loss of skeletal muscle function found in most neuromuscular diseases and the associated poor diaphragmatic function, individuals with these conditions are at particular risk of SDB and specifically of nocturnal hypoventilation associated with both hypercapnia and hypoxemia.[3] In particular, patients with neuromuscular disease are most vulnerable to significant SDB during REM sleep when accessory muscles of ventilation are in atonia and ventilation is dependent on diaphragmatic function. For the purpose of this brief article, only a few of the neuromuscular diseases will be highlighted, though the clinician should be aware that most neuromuscular disorders increase the risk of developing SDB.

Amyotrophic lateral sclerosis

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, is a rapidly progressing degenerative disease of the nerve cells that control voluntary muscle movement. It is classified as a motor neuron disease and is one of the most common neuromuscular diseases, causing a loss of ability to move and eventually the inability to breathe without ventilatory support. Additionally, patients with ALS may experience loss of muscle function in the upper airway and experience difficulty speaking and swallowing, potentially leading to problems with airway clearance.[3] Cause of death is often respiratory failure due to the hypoventilation associated with loss of diaphragmatic and chest wall muscle function.[4] There is no known cure for ALS, and treatments are primarily aimed at relieving symptoms and providing palliative care. The use of ventilatory

support in the form of bi-level positive airway pressure therapy or noninvasive ventilation (NIV) is commonly prescribed once there is evidence of respiratory compromise, and it can be used to prolong survival though it does not alter the course of the disease. In 2009 the American Academy of Neurology (AAN) published an evidenced-based practice parameter update on the care of the patient with ALS.[5] In the update, the AAN recommended that NIV be considered in the treatment of ALS, citing studies that showed NIV lengthened survival rate, slowed the rate of decline in forced vital capacity (FVC), and possibly enhanced quality of life.

Muscular dystrophies

Muscular dystrophies (MD) are genetic diseases that also cause progressive weakness and degeneration of the skeletal muscles. Muscular dystrophy disorders range in severity of symptoms and age of onset, though two common forms are associated with a significant incidence of sleep-disordered breathing.

Duchenne MD (DMD) is the most common form, primarily affects males, and has a typical onset of symptoms between three and five years of age. The deterioration of muscle function progresses rapidly in DMD, with most afflicted boys confined to a wheelchair by age 12. In these patients, the loss of respiratory muscle strength causes ineffective cough and hypoventilation.[6] In addition, DMD is associated with chest wall deformities such as scoliosis, causing restrictive lung function and further ventilatory impairment. In 2004, the American Thoracic Society released their consensus statement on the respiratory care of the patient with DMD. The consensus statement recommended that nasal intermittent positive pressure ventilation be used to treat sleep-related upper airway obstruction and chronic respiratory insufficiency citing studies showing "improved survival, improved quality of sleep, decreased daytime sleepiness, improved well-being and independence, improved daytime gas exchange, and a slower rate of decline in pulmonary function."[7] In 2005, Suresh et al published results of a five-year retrospective review of patients with DMD referred for respiratory assessment. Their study reported that 64% of referred patients reported sleep-related symptoms, and subsequent polysomnography revealed that OSA was more commonly found in younger patients, though hypoventilation was found in the slightly older patients. The authors concluded that polysomnography was indicated in DMD patients once they became wheel-chair bound.[8]

Myotonic MD (MMD) is the most common adult form of muscular dystrophies. People with MMD can live a long life with a variable but slowly progressive disability. Typical disease onset is between ages 20–30, with the muscles in the face and the front of the neck being the first to show weakness.[9] Compared to other neuromuscular disorders, patients with MMD more often present with significant daytime sleepiness and appear to have cortical abnormalities contributing not only to the sleepiness but also to an abnormal breathing pattern seen even during wakefulness. Finally, craniofacial abnormalities including long faces with associated abnormal palates and narrow maxillary arches may predispose these patients to the development of OSA in addition to the higher risk for hypoventilation due to diaphragmatic weakness.[10] A 2007 study on the assessment of sleep studies in MMD patients showed a 36% prevalence of SDB. This is notable because 33% of those found to have significant sleep-disordered breathing had a normal FVC.[9]

Evaluation and treatment

It is important to determine the extent of respiratory muscle compromise in a patient with neuromuscular disease. Complaints of dyspnea, especially in the supine position, may indicate significant diaphragmatic dysfunction. A complaint of difficulty swallowing or speech difficulties may indicate upper airway dysfunction. A careful history and physical exam should be conducted by the health care provider to document clinical signs and symptoms of SDB, which may include complaints of excessive daytime somnolence, fatigue, dyspnea, awakening gasping, morning headache, and restless sleep. In some patients there may also be reports of snoring. Polysomnography may be indicated in the evaluation of neuromuscular disease patients with excessive daytime somnolence and suspected sleep disorders, and is recommended for the titration of NIV for the treatment of sleep-disordered breathing.[11] In 2012, Mangera et al published suggestions for the management of respiratory complications in neurological disorders. Among their suggestions were arterial blood gases, the bedside swallow test to ascertain the patient's ability to swallow food and drink and handle secretions, pulmonary function testing including spirometry and mouth pressures, and sleep studies including overnight oximetry.[12] In 2002, Ragette et al published a study that sought to determine predictors of the progression of SDB in neuromuscular disease. The study suggested the inspiratory vital capacity (IVC) and maximal inspiratory pressure (PI_{max}) correlated significantly with the level of SDB. Specifically, the predictive threshold for the onset of SDB was IVC <60% predicted, PI_{max} <4.5 kPa; SDB with hypoventilation IVC

<40% predicted, PI_{max} <4.0 kPa; and SDB with diurnal respiratory failure IVC <25% predicted, PI_{max} <3.5 kPa.[13] Using these relatively simple bedside pulmonary function tests may help the clinician better predict when the institution of noninvasive ventilation is necessary or when more extensive testing such as attended polysomnography is indicated.

In general, the more prevalent sleep-disordered breathing found in most patients with neuromuscular diseases is not OSA but is alveolar hypoventilation associated with the progressive loss of respiratory muscle function. Certain types of neuromuscular disease such as muscular dystrophies may have a component of obstructive respiratory events that may respond to the use of continuous positive airway pressure (CPAP) devices but, in general, ventilatory support is necessary and bi-level devices with the possibility of a back-up rate or positive pressure ventilators are the therapy of choice. For specific guidelines for the in-lab titration of noninvasive positive pressure ventilation (NPPV) for the treatment of hypoventilation, the reader is referred to the American Academy of Sleep Medicine 2010 "Best Clinical Practices for the Sleep Center Adjustment of NPPV in Stable Chronic Alveolar Hypoventilation Syndromes."[11] In addition, the American Academy of Neurology Practice Parameters for the care of the patient with ALS and the American Thoracic Society's consensus statement on the respiratory care of the patient with DMD provide for excellent reviews of the literature and clear guidelines on recommended evaluation and treatment for these special patients.[5,7]

Summary

The importance of sleep to overall health and function is now recognized, but in many instances health care providers and physicians do not evaluate their patients for adequate sleep or sleep disturbances. This is not only a problem in general practices, as in one published study it was noted that in a clinic specializing in neuromuscular disorders, only 2% of their patients were questioned regarding sleep-specific symptoms.[2] Complaints of fatigue or poor sleep can arise from a number of both psychological and physical causes, and a careful review of the patient's symptoms and medical history are necessary in order to determine the best course of treatment. In the case of patients with neuromuscular disease, complaints of fatigue or sleepiness may have some relation to their underlying medical condition, however it is important for the health care provider to consider the possibility of SDB and institute appropriate care in order to provide the neuromuscular disease patient with not only prolonged survival but a better quality of life. ■

REFERENCES

1. Young T, Evans L, Finn L, Palta M. Estimation of the clinically diagnosed proportion of sleep apnea syndrome in middle-aged men and women. Sleep 1997; 20(9):705-706.
2. Labanowski M, Schmidt-Nowara W, Guilleminault C. Sleep and neuromuscular disease: frequency of sleep-disordered breathing in a neuromuscular disease clinic population. Neurology 1996; 47(5):1173-1180.
3. Chokroverty S. Sleep dysfunction in neuromuscular disorders. Schweiz Arch Neurol Psychiatr 2003; 154:400-406.
4. National Institute of Neurological Disorders and Stroke, National Institutes of Health. Amyotrophic Lateral Sclerosis (ALS) Fact Sheet. February 2010, NIH Publication No. 10-216. *Accessed Sept. 24, 2012*
5. Miller RG, Jackson CE, Kasarskis EJ, et al. Practice parameter update: the care of the patient with amyotrophic lateral sclerosis: drug, nutritional, and respiratory therapies (an evidence-based review). Neurology 2009; 73(15):1218-1226.
6. National Institute of Neurological Disorders and Stroke, National Institutes of Health. Muscular dystrophy: hope through research. November 2011, NIH Publication No. 11-77 *Accessed Sept. 24, 2012*
7. Finder JD, Birnkrant D, Carl J. Respiratory care of the patient with Duchenne muscular dystrophy: ATS consensus statement. Am J Respir Crit Care Med 2004; 170(4):456-465.
8. Suresh S, Wales P, Dakin C, et al. Sleep-related breathing disorder in Duchenne muscular dystrophy: disease spectrum in the paediatric population. J Paediatr Child Health 2005; 41(9-10):500-503.
9. Kumar SP, Sword D, Petty RK, et al. Assessment of sleep studies in myotonic dystrophy. Chron Respir Dis 2007; 4(1):15-18.
10. George CFP, Guilleminault C. Sleep and neuromuscular diseases. In: Kryger MH, Roth T, Dement WC, eds. Principles and practice of sleep medicine, 4th edition. Philadelphia: Elsevier Saunders; 2005:831-838.
11. Berry RB, Chediak A, Brown LK, et al. Best clinical practices for the sleep center adjustment of noninvasive positive pressure ventilation (NPPV) in stable chronic alveolar hypoventilation syndromes. J Clin Sleep Med 2010; 6(5):491-509.
12. Mangera Z, Panesar G, Makker H. Practical approach to management of respiratory complications in neurological disorders. Int J Gen Med 2012; 5:255-263.
13. Ragette R, Mellies U, Schwake C, et al. Patterns and predictors of sleep disordered breathing in primary myopathies. Thorax 2002; 57(8):724-728.

American Respiratory Care Foundation

Every year the American Respiratory Care Foundation (ARCF) joins with sponsors from the health industry to award up to $29,008 to respiratory therapists and physicians through its education recognition, fellowships, grants and awards programs.

Award Programs

For more information, or to apply for one of these awards, contact the ARCF Executive Office, 9425 N. MacArthur Blvd., Suite 100, Irving, TX 75063-4706, (972) 243-2272, fax (972) 484-2720, email arcf@aarc.org.

ACCESS ARCF ONLINE AT WWW.ARCFOUNDATION.ORG

Grants, Awards, and Fellowships

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

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

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

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

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

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

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

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

Dangers of Smoking in the Home with Oxygen

by Kimberly S. Wiles, BS, RRT, CPFT

Oxygen therapy for use in the home has been prescribed for the respiratory-compromised patient for many years. Unfortunately, the majority of these patients have been long-time smokers. Despite warnings about potential dangers, a considerable number of these patients continue to smoke in the home while wearing supplemental oxygen. According to Lacasse et al, an estimated 20–40% of patients on long-term oxygen therapy (LTOT) will continue to smoke.[1] In an oxygen enriched atmosphere, smoking in the home (either by a family member or the patient) places everyone at an increased risk of injury from a fire.

There is ample data in the scientific literature from fire safety organizations and in the general press to support the risk and incidence of home fires and burn injuries among the home oxygen population. Data from the U.S.-based National Fire Protection Association (NFPA) suggests that in a four-year review (2002–2005) of home fires in the United States, oxygen administration equipment was involved in an annual average of 182 fires. The NFPA data suggests that smoking (often in bed) while on oxygen therapy is the leading cause of home oxygen fire and injuries.[2]

In the clinical literature, Robb et al presented data on a 10-year review that identified 27 patients with burns attributable to home oxygen therapy and noted that 24 of 27 (89%) were smoking while using their oxygen, two were lighting pilot lights, and one was lighting his wife's cigarette.[3] Robb's data suggest that in all cases these patients engaged in high-risk activities contraindicated by their home oxygen therapy. In more recent work, Murabit and Tredget presented data on a nine-year (1999–2008) review of home oxygen-related fires and burn injuries in which 17 patients sustained injuries secondary to smoking while using home oxygen therapy.[4]

In 2001, The Joint Commission published a *Sentinel Event* detailing the root cause study of the results of 11 sentinel events over a four-year period (1997–2001) involving persons injured or killed as a result of a home fire that occurred in patients receiving supplemental home oxygen therapy. In all cases, cigarette smoking was determined to be the contributing factor.[5]

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The role of the respiratory therapist

It is crucial that the home environment be thoroughly assessed on the initial set-up and any ongoing visits made to the patient's home. Continuing education regarding safety must be performed and documented in the home care record. The RT's keen eye for problem identification is essential when assessing the patient and the patient's home environment for potential fire risk. Some key areas to address include:

Smoking history — The question must always be asked, "Do you or any other member of your family smoke?" The answer is not always the truth; therefore, the clinician must assess the patient's honesty. A visual of the patient's environment might reveal a different answer (i.e., cigarette burns in the carpet, smoke odor, packs of cigarettes or ash trays lying around, and/or a discolored nasal cannula).

Living status — An individual who lives alone requires further evaluation to assess items such as mental status, cognitive status, and the ability to function independently. A smoker with an impaired mental status is at a significant risk for causing a fire.

Presence of smoke detectors and fire extinguishers — An important function of the respiratory therapist is to assess the number of functional smoke detectors and where they are located as well as a functioning fire extinguisher. It is essential to educate the patient and caregivers on the importance of having one, knowing where it is located, and how to use it.

Escape route — Assessing the home environment for a safe escape route can be challenging. In many cases, the patient's health status has been compromised for a long time and they are unable to keep up with daily household chores. Their homes become cluttered and disheveled. Thus, their home may put them at risk and can be especially dangerous if a fire should occur. The RT is instrumental in discussing and planning a safe escape route for the patient in the event of a fire.

Presence of "no smoking, oxygen in use" signs — Something as simple as putting a sign on the door can be a challenge. A number of patients are very private and feel that this is an infringement into their personal life. They don't want a sign on their door telling everyone that they are on oxygen, which means they are sick. The RT's explanation for the signs is two-fold: It is a way to alert fire personnel when responding to fires as well as a warning to guests that smoking is prohibited while oxygen is in use.

Plan of care

Once the RT has completed the home safety evaluation and identified the potential risk of fire due to smoking, a plan of care is developed and should include items such as:

- Education on the risks involved with smoking with oxygen
- Introduction and recommendation of smoking-cessation classes
- Education on the pharmaceutical options for smoking cessation
- Development of a "No Smoking" contract and have patient sign it
- Discussion of possibly removing oxygen if smoking continues.

Communicating the plan of care to the patient, family, caregiver, nurse, and especially to the physician is critical. The physician can be instrumental in reinforcing the care plan to the patient or modifying their care based on the heightened risk. An open channel of communication is essential when dealing with patients who are at risk for causing harm to themselves or others.

Ethical issues facing the RT

Respiratory therapists can find themselves in an ethical dilemma when asked to provide oxygen therapy to a smoker or to recommend removal of oxygen therapy from a smoker. They must be able to determine what the degree of risk is and whether it outweighs the benefit of oxygen therapy. Some items that attribute to a higher risk include:

- Poor mental/cognitive status
- Patient living in a multi-family home
- History of smoking-related burns or fires.

If the patient is unable to understand the risk due to their mental status, notify the physician immediately. These individuals may not have the ability to understand the risk that they are taking.

If there is a complete understanding of the danger and the consequences related to the behavior of smoking with oxygen and the patient has made the decision to smoke regardless, it is their decision to take that risk. It becomes a different scenario when the patient puts others at risk (i.e., multi-family dwelling). These cases should be discussed thoroughly with the physician, family, and any additional members of the health care team. This becomes an ethical decision, and the question that must be asked is, "Does the benefit of LTOT outweigh the risk the individual is placing on others?"

The decision to remove oxygen therapy from the patient must be made once all other avenues have been exhausted and it is determined that the risk outweighs the benefit.

When a physician prescribes oxygen for a patient, they may not understand the degree of risk the patient is to themselves and/or others based on their home environment and smoking history. It is the RT's responsibility to do a thorough evaluation of the home environment and to educate on oxygen safety and the risk of smoking with oxygen. In an effort to minimize the potential for fire-related injuries related to smoking with oxygen, the RT must be able to recognize safety issues and effectively communicate all potential problems to the physician. ■

REFERENCES

1. Lacasse Y, LaForge J, Maltais F. Got a match? Home oxygen therapy in current smokers. Thorax 2006; 61(5):374-375.
2. National Fire Protection Association. Ahrens M. Fires and burns involving home medical oxygen (white paper), Aug. 2008.
3. Robb BW, Hungness ES, Hershko DD, et al. Home oxygen therapy: adjunct or risk factor? J Burn Care Rehabil 2003; 24(6):403-406.
4. Murabit A, Tredget EE. Review of burn injuries secondary to home oxygen. J Burn Care Res 2012; 33(2):212-217.
5. The Joint Commission. Lessons learned: fires in the home care setting. Sentinel Event Alert 17. March 2001. Available at: www.jointcommission.org *Accessed Nov. 16, 2012*

Federal Government Affairs Year-end Review – 2012

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

The AARC's Government Affairs staff continues to work in partnership with state respiratory societies, patient and consumer organizations, and "like-minded" coalitions to advance the respiratory therapy legislative and regulatory agenda at both the state and federal levels.

Congressional overview

President Barack Obama has been elected to serve four more years. The House and the Senate remain divided with Democrats controlling the Senate and the Republicans controlling the House of Representatives. In other words, the status quo remains. Congress has been responding to deadlines instead of taking action on issues of importance to our country. The year 2012 was an election year; and as a consequence of the highly charged partisan atmosphere, Congress acted on a limited number of legislative bills. With the new 113th Congress set to convene in mid-January, we anticipate a much more intense level of congressional legislative activity. While this past year saw Congress mostly play a smaller role, at least in passing health-related legislation, federal health regulations and policy initiatives were robust. The Supreme Court declared the Affordable Care Act (ACA), also known as Health Care Reform, constitutional (with the exception of requiring states to expand Medicaid coverage).

Numerous provisions of the ACA were implemented through regulations, and with the reelection of the Obama administration we will see a flurry of new proposed regulations to further define the Affordable Care Act. The majority of states did not take action to establish the competitive health insurance exchanges prior to the election and will now be scrambling to catch up. The ACA expansion of Medicaid to 133% of the federal poverty level is no longer mandatory, but most states are being pressured by the medical and hospital community to implement this program because the uninsured typically access care through hospital emergency rooms. Value-based purchasing and preventable hospital readmissions programs within Medicare will be moving forward. These payment policies are the purview and under the authority of the Centers for Medicare and Medicaid Services (CMS).

State issues

One area of great concern for the respiratory therapy profession is the rise of state governments beginning to question the necessity of continuing state licensure for certain professions. For respiratory therapy, profession de-licensing efforts arose in two states this past year: Michigan and Indiana.

In essence, regulatory bodies in each of these states (the Indiana Regulated Occupations Evaluation Committee and The Michigan Office of Regulatory Reinvention) appear to believe that the professional credentials, in this case the credentials issued by the National Board for Respiratory Care (NBRC), will be a sufficient substitute for respiratory therapy licensure. These policy bodies neglect to consider that the NBRC does not perform background checks or have investigative powers including subpoena authority — key components that the NBRC (which vehemently opposes this type of initiative) has pointedly raised in its own letters of opposition. The situations in Michigan and Indiana differ. The commission in Michigan has indeed recommended that the respiratory therapy profession — along with 17 other licensed professions — be de-licensed. In Indiana the committee (after postponing a decision for months) finally concluded that RT licensure is

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necessary for the health and safety of its citizens and recommended continuation of RT state licensure.

Both the Indiana Society for Respiratory Care and the Michigan Society for Respiratory Care have done a masterful job at debunking the premise that NBRC credentials will be an acceptable substitute for mandatory licensure. The AARC, the NBRC, and other professional and patient organizations have all sent letters to the respective state bodies laying out in detail why NBRC credentials are insufficient to protect the public and cannot be a substitute for licensure.

At the time of publication, while the situation in Indiana was successfully resolved, Michigan has yet to come to any final determination on the question of RT licensure in the state.

The key question is: Why would state governments begin to challenge the value and viability of state licensure, particularly licensure of health professions? One could speculate that this de-licensing effort may be partly due to the assumption that it is costly to run a licensure board. (In nearly all states there are statutory requirements that any licensed profession be self-funding; that is, the licensure fees assessed on the professionals must cover the administrative costs of the licensure board.) Adding to this climate may be the state government leaders and perhaps the public's perceived displeasure over "unnecessary government regulation," or the belief that more jobs would be available if professional licensure "barriers" were removed. Regardless of the reasons, we seem to now have a recipe where challenges to professional licensure including RT licensure might become more frequent.

The fact that there has been serious state government questioning of the need to continue licensure for certain professions should serve as a wakeup call to all RTs to closely monitor de-licensing initiatives toward health professional licensing in their states.

State laws and regulations affecting the respiratory care profession

Legislation — Space limitations of this article permit providing only a few brief examples of the types of legislation passed this past year.

In Connecticut, a bill was introduced to begin a pilot project that would transfer certain ventilator-dependent nursing home patients back into their own homes, with care specifically and only provided by registered nurses and licensed practical nurses. The Connecticut Society for Respiratory Care immediately contacted their state legislators explaining the importance of having respiratory therapists included as providers of ventilatory care. The bill was immediately revised to include RTs and was subsequently enacted into law.

In Louisiana, while reviewing a bill that would revise the "old" law governing emergency medical technicians (revisions that did not impact RTs), it was noticed that other provisions that were actually in the "old" law clearly stated that for ambulance transport teams, *only* EMTs, physicians, and nurses were permitted to ride in "back" of the transport vehicle. There was a quick recognition by the Louisiana Society for Respiratory Care (LSRC) that if some "outside party" were to demand adherence to these legal personnel requirements, RT participation in transport teams would cease and significant operational disruptions in transport teams would occur. The LSRC teamed with the Louisiana Hospital Association (which clearly understood the implications of the "old" law), to quickly insert a fix in the final bill to include RTs and other key clinical personnel. The legislation is now "new" law.

State respiratory therapy regulations

While most state legislatures have adjourned and ceased legislative activity for the year, that is not the case with state regulatory agencies. The majority of the 2012 regulatory changes made to RT licensure rule changes were non-controversial. For example, a number of states made rule changes that addressed continuing education requirements — specifically the number of online courses permitted. A few states revised the rules on license reactivation for lapsed licenses.

We strongly recommend that every RT should periodically check their state respiratory therapy licensure webpage for any new procedures or revisions. The AARC provides an up-to-date webpage (www.aarc.org/advocacy/state/licensure_matrix.html#matrix) that gives contact information and links to the licensure boards.

Legislative activities and other items of interest

AARC Capitol Hill Lobby Day — Over a dozen years ago the AARC and its state societies established the Political Advocacy Action Team (PACT). A state PACT representative is a politically active RT volunteer appointed by their state society to act as the coordinator when state or federal political action or response is required.

At the federal level (i.e., Congress), a key component to moving our legislative agenda through the congressional process has been the state PACT representatives who annually go to Washington DC to meet face to face with their congressional delegations. This important grass-

roots effort is jointly sponsored by the AARC and our state respiratory care societies.

This past March marked the 13th year for the AARC Hill Lobby Day, where 136 respiratory therapists from 46 states and the District of Columbia were joined by pulmonary patients from the Alpha-1 Foundation, the COPD Foundation, the Alpha-1 Association, the Cystic Fibrosis Foundation, and the Pulmonary Hypertension Association. We had over 350 scheduled Capitol Hill office visits, the highest number of meetings we have ever had. This coming March the AARC and our state societies will again be in Washington DC to advocate for the profession and pulmonary patients.

AARC Virtual Lobby Week — A recent addition to the AARC strategy to raise the profile of the respiratory therapy profession on Capitol Hill is to encourage RTs, pulmonary patients, and RT supporters to participate in our online Virtual Lobby Week. This important nationwide activity is where we ask for emails to be sent to members of Congress just prior to the RT PACT representatives' arrival in Washington for our Capitol Hill Lobby Day. The 2012 Virtual Lobby Day generated over 12,500 emails that supported our respiratory therapy legislative agenda and showed support from "back home" before the PACT RTs met with their congressional delegations.

Medicare Part B Respiratory Therapy Initiative — In the last session of Congress, the AARC worked to have members join Congressman Mike Ross (D-AR) in passing H.R. 941, the Medicare Part B Respiratory Therapy Initiative. In spite of data and discussions that AARC had with congressional leaders and the Congressional Budget Office, we were unable to overcome an extraordinarily high cost analysis (called a "score") and our bill became unpassable. We have worked with the Hill to craft a new bill that focuses on chronic disease management services for pulmonary patients with particular emphasis on self-management education and training. The revised language continues to require coverage only when furnished by qualified respiratory therapists in the physician office/practice setting. We believe the revisions made to the respiratory therapy initiative will be advantageous to RTs as it will place greater emphasis on the importance of the care they provide to pulmonary patients.

Federal regulations and other policies

The past year's regulatory climate ushered in new opportunities for respiratory therapists with the implementation of two key provisions of the Accountable Care Act: namely, the Value-based Purchasing Program and the Hospital Readmission Reduction Program. As part of the annual update to Medicare's inpatient hospital prospective payment system, the overarching goal of these programs is to provide better care, better health, and lower costs. They also provide a backdrop for enhanced recognition of respiratory therapists and the value they bring to patient care.

Value-based purchasing — Value-based purchasing will reward hospitals for high-quality, safe care for patients by tracking a hospital's performance compared to other hospitals across the country. Hospitals will also be evaluated on how well they do to improve their own performance over a specific period of time. Performance is based on quality measures for five conditions or procedures — heart attack, heart failure, *pneumonia*, surgical care, and health care-associated infections (no respiratory HAIs at this time) in critical areas such as clinical outcomes, patient experience, efficiency, and care coordination.

With respect to pneumonia, respiratory therapists will have the chance to play an important role in how well their hospitals perform in terms of receiving incentive payments under this new program. In addition, a similar value-based program designed to provide incentive payments to physicians will be phased in during the coming years and will involve the reporting of a number of quality measures that track respiratory-related conditions such as chronic obstructive pulmonary disease (COPD), asthma, smoking cessation, and sleep apnea.

Hospital readmissions — Hospitals now find themselves being penalized if they have excess readmissions within 30 days of discharge for three selected diagnoses: heart attack, heart failure, and *pneumonia*. Quality of care for pneumonia patients will play an increasingly important role in whether hospitals will receive a reduction in their payments. According to an analysis of Medicare data by the Kaiser Family Foundation, more than 2,000 hospitals will be penalized, with almost 300 hospitals receiving the maximum penalty. So now, more than ever, is the time for respiratory therapists to step up to the plate and show their hospital what they can do to help prevent these readmissions.

The Accountable Care Act authorizes future expansion of the list for conditions that represent high costs and high volumes of readmission. COPD is likely to be proposed, but any new additions must first receive approval from a multi-stakeholder group, the Measure Application Partnership, prior to formal rulemaking. If our Part B initiative is enacted, it will place respiratory therapists at a critical juncture in the physician's office to provide chronic disease self-management education and training that has the potential to limit the number of hospital readmissions.

Pulmonary rehabilitation — This past year resulted in a substantial payment reduction per session for pulmonary rehabilitation (PR) programs in the hospital outpatient setting, from $60 in 2011 to $37 in 2012. The final payment rate for calendar year 2013 is only slightly better at $39.13 per session.

The lower payment appears to be the result of hospitals' lack of understanding in how to set the appropriate charge for the single bundled code assigned to PR, given that services furnished as part of these programs were previously billed separately. The AARC, together with our sister pulmonary societies and organizations, continue to emphasize the need to educate hospitals on what they can do to provide better data to CMS that hopefully will improve the payment rate over time. The "Pulmonary Rehabilitation Toolkit" developed for this purpose is available at www.aarc.org/resources/pulmonary_rehab_toolkit/.

Surveyor worksheets for ventilator/respiratory services — As part of a pilot project to improve patient safety with respect to certain Hospital Conditions of Participation centered on infectious disease, CMS and the Centers for Disease Control and Prevention (CDC) developed new guidelines to be used as part of the state survey process. Among them is a section that includes guidelines on cleaning nebulizers.

At issue is language that would require the nebulizer to be rinsed with sterile water or tap water followed by isopropyl alcohol. Respiratory therapists know that such a requirement could, in fact, put the patient at risk for an exacerbation if any leftover residue from the alcohol was inhaled. Moreover, there is no scientific evidence to support its use.

AARC established a working relationship with CMS and the CDC to ensure that revisions to the surveyor worksheets are accurate, supported by clinical guidelines, and reflect changes in new technologies. Removal of the reference to "isopropyl alcohol" was strongly recommended by AARC. National implementation is not expected until sometime in early 2013.

DME items provided on a recurring basis and refill requirements — Last year CMS attempted to clarify its documentation requirements for certain DME items needing replacement or refill only to cause more confusion and concern. At issue was documentation for non-consumable supplies such as positive airway pressure and respiratory assist device supplies that may need periodic replacement. In such cases, the supplier has to document its assessment as to why the supply is no longer functional before a replacement can be requested.

In response to requests for additional details, CMS defined "non-functional" to mean that the item is no longer able to be used safely or effectively for the purpose for which it was intended. Examples include breakage, wear, soiling, or contamination that is unable to be removed with recommended cleaning. CMS also indicated that a continuous positive airway pressure mask that leaks due to ill-fitting or incorrectly worn interface would not be sufficient justification for replacement; rather, the leak must be due to a non-functioning mask. It is unclear whether this guidance will assist in reducing claims errors.

A busy year

2012 was a very active year for the AARC government affairs staff as we continued to advocate for the advancement of the respiratory profession through state and federal legislation and regulations. ■

Hut, Hut, Hike: the Safety Huddle

by Thomas J. Kallstrom, MBA, RRT, FAARC

In this column last month I presented an overview of safety in the workplace that specifically looked at the respiratory therapist's role. This was the result of a National Institute for Occupational Safety and Health survey of practicing RTs who were AARC members. It provided useful information that can be used to identify workplace safety deficiencies with the goal to improve safety in the workplace.

In late November 2012, The Joint Commission released a document that dovetails with this survey quite well — "Improving Patient and Worker Safety: Opportunities for Synergy, Collaboration, and Innovation."[1] It is a monograph to stimulate greater awareness of safety issues as well as to promote safety initiatives for all workers in the hospital, ambulatory workplace, and home care environment. While not discipline-specific, there are nuggets of wisdom that you should find useful as a practicing respiratory therapist, particularly the safety huddle.

Safety huddle

The safety huddle is a concept that is gaining as a recognized team communication tool. I first learned about this concept earlier this year when I visited a factory of one of the AARC's Corporate Partners. Along a wall in the factory were bulletin boards with graphs and charts situated in front of several footprints on the floor (presumably where the participants would stand). I learned how this form of communication had made a tremendous impact on the efficiency of their operations and morale of their employees. It was not too long after this that we decided to use this communication tool at the AARC Executive Office on a weekly and PRN basis with the leadership and selected staff. By getting all players together we began to better understand and gain insight into the dynamics of projects and current issues that could impact their success. Too many times we loose sight of the fact that we do not live or operate in a silo and that we need to bring all essential players to the table. This same concept translates quite well to the hospital environment. According to the Joint Commission document, hospitals should use a variation of a daily huddle that focuses on worker and patient safety hazards within and across units of the hospital.

The staff at St. Vincent's Medical Center in Bridgeport, CT, is sited as an example in which these daily briefings house-wide as well as unit-based are mandatory. In addition to this, they also use some staff-level associates as safety coaches whose role is to monitor, train, and coach staff on appropriate safety practices. The result of these practices across their health care system was laudable. They realized a dramatic decrease in pressure ulcers (94% lower than estimated national incidence) as well as reductions in Occupational Safety and Health Administration reportables. The return on investment of human resources resulted in reduced malpractice costs. They are also measuring other outcomes such as savings, based on reduced cost for workers' compensation, non-productive time on the job, and sick time.

As shown, huddles possess the capability of dramatically improving the communication between disciplines. The Joint Commission's 2012 Hospital National Patient Safety Goals has included one to Improve Staff Communication (NPSG.02.03.01).[2] This is important because communication has been implicated in approximately 70% of Sentinel Events. In a recent publi-

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cation written by Dingley et al, the essential components of a huddle must include the following elements and should be attended by the physician (e.g., attending, resident, intern, and fellow), respiratory therapist, physical therapist, occupational therapist, social worker, pharmacist, charge nurse, individual patient's nurse, and pastoral care provider:[3]

- Preparing staff for the shift/day
- Face-to-face communication
- Immediate response to questions
- Streamlined resolution of issues or concerns
- Timely response to issues or concerns
- Efficient dissemination of information
- Improvement in teamwork and effective communication
- Staff involvement in decision-making.

For a huddle to be successful, it needs to be short (less then 10 minutes), and a team leader must be designated to lead the briefing. Most hospitals insist that the participants stand (thus allowing visual access to patients). Also key for success, all participants and particularly the physician must support the huddle. Finally, in order to be consistent, the huddle should be held at the same time and place every day.

Checklists

It seems that we can learn from industry and successfully import many of the safety tools that have saved lives and improved the safety environment. One such area is a checklist. At AARC Congress 2012, our keynote speaker, Captain John J. Nance, brought a challenge to the respiratory care profession to learn from the aviation industry simple concepts that can improve patient safety in the hospital. His presentation can be viewed at www.aarc.org/education/meetings/congress/gazette/.

Safety for our patients and us on staff is a team sport. In order to be successful, we need to work together in practicing better communication. The safety huddle is one such way to make a difference. Is your institution using this? If not, then perhaps you should be the medical professional who initiates this conversation with your leadership. ■

REFERENCES

1. The Joint Commission website. Improving patient and worker safety: opportunities for synergy, collaboration and Innovation. Available at: www.pwrnewmedia.com/2012/joint_commission/worker_safety/index.html *Accessed Nov. 26, 2012*
2. The Joint Commission website. National patient safety goals, 2005. Available at: www.jointcommission.org/standards_information/npsgs.aspx *Accessed Nov. 26, 2012*
3. Dingley C, Daugherty K, Derieg MK, Persing R. Improving patient safety through provider communication strategy enhancements. In: Henriksen K, Battles JB, Keyes MA, Grady ML, editors. Advances in patient safety: new directions and alternative approaches (Vol. 3: performance and tools). Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Aug.

Living with COPD as It Moves on

by I. Gene Schwarz, MD

In March of 2010, "Adventures of an Oxy-Phile II" by Thomas L. Petty, MD, FAARC, was published posthumously through the determination and dedication of Louise Nett, RRT, RN, FAARC, and her collaborators.[1] I was pleased to be asked to contribute my experiences of "Living with COPD" to the book as it gave me a way to honor a true pioneer in the field of oxygen therapy and to share how I wrestled my way through accepting the fact that I had COPD, which I hoped would be helpful to others.[2]

Anyone who is afflicted with chronic obstructive pulmonary disease will soon realize what "chronic" means in real living time. COPD is not going to go away, and the disease will gradually increase in severity over time. As a physician, I thought I understood and thoroughly accepted this fact. As a patient and mere human, I would soon find that I would be fighting the reality every inch of the way. Every time I needed to ask for help, I was reminded that I had lost something of my previous healthier self and needed to first acknowledge the loss of function and then find ways to compensate for it. This may be easier for some, but for me, I need to be in charge and have probably fooled myself into thinking I was in charge even when it was obvious I was not. The mind is a complicated, wondrous part of us and at times allows us to escape painful realities. To have something going on in my lungs without my permission was a tough one for me to swallow.

When my omniscient and omnipotent cover was blown, it enabled me to reach out to fellow COPDers and become part of the Colorado COPD Connection,[3] a group made up of patients, health professionals, and suppliers as well as the Colorado COPD Coalition patient advocacy section.[4] At this very moment as I'm writing, I almost lost my focus and started to tell you all about these organizations, the dedicated people who give their time so freely, and to continue on to describe some of the accomplishments of these groups. That is a here-and-now example of how powerful the pull is for me to avoid talking about the progress of this disease. So, I will be on my guard and will try to keep focused on how COPD continued to move on within me, what I learned about myself, the ways I found to compensate for the loss in function, and how helpful people have been once I could allow them to help.

Denying early symptoms

I was living in the foothills just west of Denver at an altitude of 8,000 feet. This is where we lived for almost 40 years and where our three children grew up. In the year 2000, I closed my office in Denver and continued to see a few patients at an office adjacent to my home. I would drive into Denver once a week to teach or consult with colleagues; but most of the time I was leading a fairly active life, cycling around the foothills on a reclining trike, working out at the fitness center, attending yoga classes, cross-country skiing, and trying to keep up with all the activities my wife was active in.

I knew I had COPD; but since I had stopped smoking for almost 30 years, I was doing pretty well for someone in his 70s. Over the next few years, I noticed that I was getting short of breath while cycling and working out; but my gift of denial won out until one day a nurse/paramedic on the rescue team I was a board member of did not like the way I looked and suggested I let her check my blood oxygen saturation. It was low, even allowing for the altitude. I started deep diaphragmatic breathing, and it still was low. I added a small electric motor to my reclining trike and slowed down my speed on the treadmill, and it still was low. Eventually the better sense part of me took over and I went to see my primary care physician. She recommended that I start on supplemental oxygen at night and pursue an extensive evaluation of my pulmonary function.

Beginning treatment

That was my introduction to National Jewish Health Center where I had a thorough evaluation of my pulmonary function and got started on supplemental oxygen.

It is also where I joined a support group and met other patients with lung disease, which led to my involvement in patient advocacy and public awareness movements.

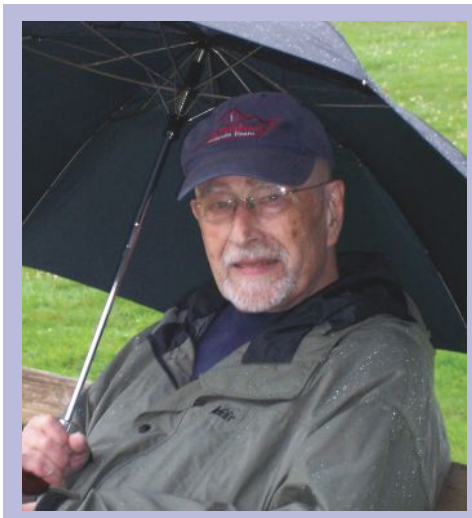
For me, using supplemental oxygen gave me the freedom to do almost everything I enjoyed while I slowly got used to the idea that I could not live an active life without it. It was the beginning of a balancing act that made the loss of lung function less incapacitating and allowed me a quality of life that was productive and gratifying. Getting used to wearing a nasal cannula in the grocery store was a piece of cake when I realized that other shoppers were more interested in reading food labels than they were in looking at me. I met people in the checkout line who were also on supplemental oxygen and often exchanged helpful information about portable oxygen equipment, medications, and tips on how to make better use of time and energy. It became important to know how much oxygen I would need to go to a meeting and get back home, as well as how much liquid oxygen my portable unit held and how long it would last at various liter flows. I always carried a pulse oximeter so I could monitor oxygen needs. I found it is not wise to rely solely on how I felt, because my oxygenation saturation had to fall quite low before I became short of breath or felt faint or dizzy.

Changing lifestyle

As time moved on and I required a higher liter flow, the establishment of a routine for living became more important. This involved what the professionals call "activities of daily living," such as taking a shower, getting dressed, and all the activities I never gave a second thought to — they all had to be altered to allow for an adequate supply of oxygen. I also had to have the cooperation of my oxygen supplier in order to have the equipment to support the changes in my condition. When I learned to stop and think before acting, I became more efficient in the use of my time, which made it easier to monitor my oxygen use. In 2005, we moved down to Denver, the mile-high city, and the difference of 3,000 feet of altitude helped, but not as much as I hoped. Vacations at sea level were a real gift as I did not need supplemental oxygen and I could increase my activity level. It was tempting to think about moving to the coast, but it would have meant leaving family and friends while not being able to predict how long it would be before I needed supplemental oxygen. As it turned out, in 2007 I needed two to four liters of oxygen at sea level and four to six in Denver.

As my oxygen needs increased, I turned to one of my COPD friends, Lynn Cole, who has an incredible knowledge of portable oxygen equipment and is someone the manufacturers often ask to test and evaluate new devices.[5] She and another COPDer, Mike McBride,[6] have come up with creative ways to use portable devices to be able to do 10Ks, marathons, and other strenuous feats I would not have thought possible. Lynn and Mike had transtracheal catheters, which allowed them to receive supplemental oxygen directly to the lungs and not have to use a nasal cannula. This was not only a more efficient pathway for the use of supplemental oxygen, but also it offered a way to increase the liter flow by using both a nasal cannula and transtracheal oxygen (TTO) when they were climbing mountains or doing 10Ks.

Although my liter flow requirements were gradually increasing, I did want to be able to continue exercising and maintain muscle tone and strength. I consulted with John R. Goodman, BSRT, RRT, a respiratory therapist who



ABOUT THE AUTHOR

I. Gene Schwarz, MD, passed away shortly before the publication of this story. He was clinical professor of psychiatry in the department of psychiatry at the University of Colorado Health Sciences Center, as well as a former director of the Denver Institute for Psychoanalysis. For the last 50 years, he divided his time between the practice of psychoanalysis and psychotherapy and the education and training of medical students and graduate mental health professionals, both locally and nationally. Dr. Schwarz had a special interest in the law and conducted seminars for lawyers and judges. He was the first psychiatrist to serve on the Colorado Supreme Court Grievance Committee. He promoted understanding of the impact of living with COPD and was working on his third novel for publication. ■

is an active member of the COPD Connection and has an enormous amount of knowledge and experience in all aspects of transtracheal oxygen therapy.[7] He encouraged me to explore the possibility of having a TTO procedure and introduced me to a hands-on pulmonologist, Michael Schwartz.[8] Michael proved to be a real-deal physician, a rare find in modern day medicine.

In November of 2009, I had the TTO procedure done. It was a team effort, with the pulmonologist, surgeon, and respiratory therapists all familiar with the procedure and follow-up care. With the help of the team, in two weeks I learned how to clean and replace the catheter. It helped reduce the liter flow of oxygen I needed at rest — but not when I was active. The only times I know there is a catheter in place is when I remind myself that it is time to clean it. Having the TTO allowed me to lead a more active life as well as start an exercise program at pulmonary rehabilitation.[9] At this point I would not be able to get enough oxygen without the TTO and a nasal cannula.

Wishing for "do-overs"

As time moved on, so did my COPD; and as it slowly progressed, I not only needed more oxygen, I needed more help at home, eventually becoming homebound. The more I needed help, the more Joan, my wife of 58 years, stepped up to be there. We both thought it important for Joan to be able to continue all the important activities she has devoted so many years to. Since neither one of us drives, we found a helper who drives Joan wherever she needs to go. It is important to take care of the caregiver.

I could not even estimate the times I have asked people I was working with in therapy to tell me what they were feeling. I know how difficult it is to describe and get into feelings in any depth, but I never realized just how difficult it was until I started to ask myself that same question about how I feel about dying. It is easier to talk about my thoughts, to prepare a living will, shred confidential records, and take care of all the paperwork to make it easier for my wife and even share in dark jokes about death. Humor helps. I became aware that I was thinking more about what I had done with my life, what I accomplished, could have done, should have done, people I helped, and people I owe an apology to for the way I handled a relationship. There are a lot of "do-overs" I think about while at the same time realizing I might have made the same choices if I had a second chance.

I have thought a good deal about a concept that Dr. Donald W. Winnicott, an English pediatrician and psychoanalyst, proposed and expanded on far beyond my use of it here: the concept of being "good enough."[10] I use it here to recognize my humanness and my wish that I have been a "good enough" husband to my loving wife — "a good enough" father to three wonderful children — regret that there is not time enough to be "a good enough" grandfather to my five grandchildren. I hope I have been a "good enough" physician and human being and sincerely apologize to anyone I have unintentionally hurt.

Appreciating the pioneer researchers

I would probably not be here today if it were not for the research and teaching of Tom Petty and Louise Nett. I know that I would not have been able to manage these years so easily if it were not for the people who have been so helpful and have given freely of their time as advocates for COPD. I am particularly grateful to Edna Fiore, a COPDer with an enormous base of knowledge, which makes her an effective advocate both locally and nationally.[11]

I hope my personal account will be helpful to those with COPD who are looking for ways to manage and live a productive life as this disease advances. ■

EDITOR'S NOTE

Our *AARC Times* editors thank the family of I. Gene Schwarz for allowing us to publish this story for our readers. It is also available for viewing on the AARC's patient education website YourLungHealth.org.

REFERENCES

1. Petty TL, McCoy R, Nett L, Bowen K. Adventures of an oxy-phile 2. Available at: www.yourlunghealth.org *Accessed Nov. 21, 2012*
2. Schwarz, IG. Chapter 5. In: Petty TL, McCoy R, Nett L, Bowen K. Adventures of an oxy-phile 2. Available at: www.yourlunghealth.org *Accessed Nov. 21, 2012*
3. Colorado COPD Connection website. Available at: www.lunghealthco.org *Accessed Nov. 21, 2012*
4. Colorado COPD Coalition website. Available at: www.coloradocopd coalition.org *Accessed Nov. 21, 2012*
5. Cole RG. Chapter 8. In: Petty TL, McCoy R, Nett L, Bowen K. Adventures of an oxy-phile 2. Available at: www.yourlunghealth.org *Accessed Nov. 21, 2012*
6. McBride M. Chapter 9. In: Petty TL, McCoy R, Nett L, Bowen K. Adventures of an oxy-phile 2. Available at: www.yourlunghealth.org *Accessed Nov. 21, 2012*
7. Goodman JR. Chapter 7. In: Petty TL, McCoy R, Nett L, Bowen K. Adventures of an oxy-phile 2. Available at: www.yourlunghealth.org *Accessed Nov. 21, 2012*
8. Michael Schwartz, MD, National Jewish Health Center, Denver, CO.
9. Joan Balik, director of pulmonary rehabilitation, University Hospital, Denver, CO.
10. Donald Woods Winnicott (7 April 1896–28 January 1971)
11. Fiore EM. Chapter 13. In: Petty TL, McCoy R, Nett L, Bowen K. Adventures of an oxy-phile 2. Available at: www.yourlunghealth.org *Accessed Nov. 21, 2012*

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Chronic Disease Manager

The Perfect Storm: RTs Make a Difference!

by Georgianna Sergakis, PhD, RRT, CTTS

"Tell me about your asthma: What makes it worse? What makes it better? How often do you use your albuterol inhaler?" In fact, as respiratory therapists and pulmonary health experts, we undoubtedly ask similar questions of every patient with pulmonary disease. We use the information we gather to recommend and adjust current pharmacotherapy according to the evidence-based guidelines like the National Asthma Education and Prevention Program's EPR-3 and the Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines.[1,2] As evidenced by several existing programs, the use of respiratory therapy guidelines and standardized disease management for pulmonary disorders facilitates pulmonary disease management.[3,4]

Imagine now that the chronic disorder we are treating is tobacco dependence. "Please tell me about your smoking: How many cigarettes do you smoke in a day? When do you typically have your first cigarette in the morning? Tell me on a scale from 1 to 10, how confident are you right now about quitting?" Likewise, we can use this information gathered to recommend and adjust pharmacotherapy and to recommend further tobacco-dependence treatment. Guidelines and protocols streamline and systematically implement treatment for all patients that use tobacco in any setting. There are excellent examples where respiratory therapists are leading the way in treating tobacco dependence,[5] yet there is a lack of evidence demonstrating the effectiveness of the RT in this role.

The U.S. Department of Health and Human Services, Public Health Service (PHS) "Treating Tobacco Use and Dependence: 2008 Update" clinical practice guideline was written to provide recommendations and guidelines for those professionals aiding individuals with tobacco dependence.[6] The PHS update recommends that we view tobacco dependence as a chronic disease.[5] As we reframe our view of tobacco dependence as a chronic condition, the guideline lists the following when describing tobacco dependence as similar to other chronic diseases:

- The majority of tobacco users experience multiple periods of relapse and remission.
- The vulnerability for such relapses persists for days, months, and even years.
- Recognizing these facts, tobacco users require ongoing, rather than acute care for their dependence.

An abundance of evidence for treating tobacco exists to support the development of tobacco treatment protocols for a variety of patient care environments including the acute care hospital, outpatient clinic, as well as in the community. Have you been involved in systematically implementing treatment of tobacco dependence? Do you know what happens at your institution after an individual is identified as a current smoker? This article addresses important reasons to implement improved chronic care in the form of standardized care by every respiratory therapist.

The many costs of tobacco

Tobacco use is the leading preventable cause of death and is expensive to our health care system. Tobacco-related direct medical costs and additional lost productivity are estimated to cost the United States $193 billion annually.[7] Furthermore, tobacco-related diseases like COPD, the third-leading cause of death in the United States,[8] are associated with high health care expenditures and fre-

about the author...

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quent readmissions over the course of the chronic disease.[9] Variable Medicare reimbursement related to quality measures and penalties for readmission within a month of discharge compounds future costs to the health care system. Other multiple morbidities caused by tobacco use include cardiovascular disease, various cancers, and stroke. All together, the aggregate "cost" of this chronic dependence is phenomenal.

Limited resources and the continued prevalence of smokers in need of treatment create an opportunity for RTs to expand their role as pulmonary health experts and to take on this growing responsibility of counseling individuals about tobacco dependence. To alleviate the cost constraints of providing this service, evidence of improved patient satisfaction, decreased readmissions, and overall decreased health care expenditures would justify the added resources necessary for this area of clinical practice. Protocols should be developed with planned, prospective data collection to illustrate such outcomes. We have been successful in other areas such as asthma management;[4] now is the time to validate that RTs can make a difference in the lives of tobacco users, as well as the "bottom line" impacted by continued tobacco use.

Opportunities for RTs in disease management

Due to tobacco-free policies in multiple environments (most notably health care institutions), tobacco users face extreme discomfort and withdrawal symptoms if not treated for their tobacco dependence.[5] Most areas that implement these tobacco-free policies offer some support for patients that need help quitting during their stay. At the University of California San Diego Medical Center, the smoking-cessation program is provided exclusively by RTs.[5] More than 25 RTs were certified by the hospital to provide tobacco-dependence counseling and were required to complete a 12-hour class and four hours of clinical training. Since the implementation of the program, patient satisfaction scores increased, suggesting that targeted smokers might actually welcome assistance with quitting tobacco. This program is a perfect example of RTs making a difference and functioning as a partner in caring for the tobacco-dependent individual.

The PHS guideline includes the recommendation that patients who use tobacco should be offered counseling or treatment. All tobacco interventions should be delivered utilizing the principles of motivational interviewing, which are different than traditional patient education methods that may have been learned during RC training. The guideline suggests the five A's for those willing to quit and five R's to enhance motivation for those unwilling to quit:

- **Ask** about tobacco use
- **Advise** to quit
- **Assess** willingness to quit
- **Assist** in making a quit attempt through medication and counseling
- **Arrange** a follow-up.

- **Relevance** — Motivational information has the greatest impact if relevant to the patient's own situation.
- **Risks** — Ask the patient to identify both acute and long-term negative consequences of continued tobacco use.
- **Rewards** — Ask the patient to identify benefits to quitting (save money, improved health, etc.).
- **Roadblocks** — Ask the patient to identify barriers and discuss solutions to overcome these barriers.
- **Repetition** — The motivational intervention should be repeated at every visit. The tobacco user should be told that most people make repeated attempts before they are successful.

The guideline also supports the use of pharmacotherapies for tobacco dependence as use reliably increases abstinence rates.[6] The update boasts an association between the intensity of counseling and its effectiveness: If a patient receives one-on-one counseling and treatment, cessation rates improve. As The Joint Commission now requires the use of one of the "5 A's" (ask) in tobacco-dependence counseling, increasing knowledge and comfort with the techniques is also needed.[10] In 2009, the American Respiratory Care Foundation and the AARC

published "Why Quit Using Tobacco" (available at www.aarc.org/resources/tobaccocessation). To accompany this patient guide, the AARC is currently developing clinician training; stay tuned for more details. The clinician training will update knowledge about the seven first-line pharmacotherapies available for tobacco users, demonstrate motivational interviewing techniques in a variety of settings, and outline ways to systematically implement tobacco-dependence protocols and counseling programs.

The right thing to do — make a difference!

The unmet growing patient need for treatment and the greatest known opportunity to reduce health care cost combine to create a perfect storm. Tobacco users need assistance in ongoing management of this chronic disorder, abundant evidence supports that clinicians play a vital role in assisting individuals, and the health care system can no longer bear the burden of continued tobacco dependence. As a professional community we need to add this to our arsenal of ways respiratory therapists impact the pulmonary health of our patients, clients, and community members. The time to act is now. We need to take on this challenge and continue to demonstrate our efficacy in pulmonary disease management. ■

REFERENCES

1. National Heart Lung and Blood Institute, National Institutes of Health website. Guidelines for the diagnosis and management of asthma (EPR 3). Available at: www.nhlbi.nih.gov/guidelines/asthma *Accessed Nov. 14, 2012*
2. Global Initiative for Chronic Obstructive Lung Disease website. Global Strategy for the Diagnosis, Management and Prevention of COPD, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2011. Available at: www.goldcopd.org/ *Accessed Nov. 14, 2012*
3. American Association for Respiratory Care. Making a difference in the management of asthma: a guide for respiratory therapists, 2003. NIH Publication No. 02-1964.
4. Shelledy DC, McCormick SR, LeGrand TS, et al. The effect of a pediatric asthma management program provided by respiratory therapists on patient outcomes and cost. Heart Lung 2005; 34(6):423-428.
5. Bunch D. Smokers and the smoke-free campus. AARC Times 2010; 34(4):38-40.
6. U.S. Department of Health and Human Services. Fiore MC, Jaen CR, Baker TB, et al. Treating tobacco use and dependence: 2008 Update. Clinical practice guideline. Rockville MD, May 2008.
7. Centers for Disease Control and Prevention (CDC) website. Smoking and tobacco use. Available at: http://cdc.gov/tobacco *Accessed Sept. 28, 2012*
8. Centers for Disease Control and Prevention (CDC) website. Injury and violence prevention and control. Available: http://cdc.gov/injury *Accessed Sept. 28, 2012*
9. Centers for Disease Control and Prevention (CDC). Smoking-attributable mortality, years of potential life lost, and productivity losses – United States, 2000–2004. MMWR Morb Mortal Wkly Rep 2008; 57(45):1226-1228.
10. Glasgow RE, Emont S, Miller DC. Assessing delivery of the five 'As' for patient-centered counseling. Health Promot Int 2006; 21(3):245-255.

Tuberculosis in the United States: Will It Ever Be Eradicated?

by Richard L. Sheldon, MD, FAARC, FCCP

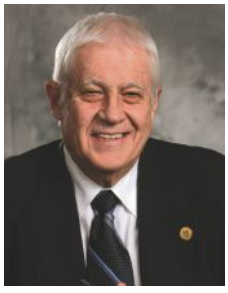
The answer to the question raised by this article's title is "probably not." Given the increasingly global nature of human existence, our desire for expanding commerce, travel for pleasure, desire for "freedom" from search and seizure, porous national borders, and *Mycobacterium tuberculosis'* (TB) ability to adapt, containment (if not eradication) of TB will be an ongoing struggle. We must continue to battle this ancient foe, but the victories will be with individual cases and on a nationwide (worldwide) scale as they must be in order to achieve eradication of TB. We are making headway. According to the Centers for Disease Control and Prevention, "in 2011, a total of 10,521 new TB cases were reported in the United States, an incidence of 3.4 cases per 100,000 population, which is 6.4% lower than the rate in 2010. This is the lowest rate recorded since national reporting began in 1953."[1]

Where is the problem population?

In 2011 over half (50.4%) of the new U.S. cases were from "entry" states — California, Florida, New York, and Texas.[1] All four states have sophisticated public health systems; nonetheless, these states struggle with non-medical issues that make effective control impossible. Tuberculosis rates have declined since 1993 but have not reached the eradication rate of less than one case per 1,000,000. The 2011 rate is 3.4 cases per 100,000 population, with the rate of active TB in foreign-born persons living in the United States being 12 times higher than the rate in U.S.-born individuals. Asians represent the largest ethnic group with active TB, having displaced Hispanics in 2011 for the number one position. Homeless shelters where the guests have high alcohol-consumption habits are noted as being sites for outbreaks of active TB cases.[2]

"Over 95% of TB deaths occur in low- and middle-income countries, and it is among the top three causes of death for women aged 15 to 44." — World Health Organization[3]

about the author...



Richard L. Sheldon, MD, FAARC, FCCP, is the AARC's American Thoracic Society representative to the Board of Medical Advisors and serves as medical advisor for the AARC Education Section and Diagnostics Section.

What is the impact on our present resources?

Early in the history of organized society's work of TB detection and treatment, local entities were always a step behind effective control and eradication. Despite the development of effective anti-TB drugs plus laws to require testing and quarantine, the systems were always incapable of achieving eradication.

During the Vietnam War, U.S. military physicians became painfully aware that lack of adherence to proper TB treatment regimens in developing countries often meant U.S. troops stationed there returned home with active TB cases, but worse yet was the fact that the organisms were resistant to anti-TB drugs. War generates refugees, poverty, poor sanitation, and malnutrition — all effective breeding grounds for the spread of TB and the development of multidrug resistant organisms. New diseases like HIV magnified the control problem since all too frequently the two diseases went hand in hand.

"TB is second only to HIV/AIDS as the greatest killer worldwide due to a single infectious agent." — World Health Organization[3]

Lurking behind these two diseases was always the deadly specter of the illicit drug trade and subsequent drug use, ensuring that the conditions necessary for TB's survival would always be present.

Figure 1. Basic TB treatment regimens

Preferred Regimen	Alternative Regimen	Alternative Regimen
Initial Phase Daily INH, RIF, PZA, and EMB for 56 doses (8 weeks)	Initial Phase Daily INH, RIF, PZA, and EMB for 14 doses (2 weeks), then twice weekly for 12 doses (6 weeks)	Initial Phase Thrice-weekly INH, RIF, PZA, and EMB for 24 doses (8 weeks)
Continuation Phase Daily INH and RIF for 126 doses (18 weeks) or Twice-weekly INH and RIF for 36 doses (18 weeks)	Continuation Phase Twice-weekly INH and RIF for 36 doses (18 weeks)	Continuation Phase Thrice-weekly INH and RIF for 54 doses (18 weeks)

INH = isoniazid, RIF = rifampin, PZA = pyrazinamide, EMB = ethambutol

SOURCE: Centers for Disease Control and Prevention website. Tuberculosis (TB). Treatment for TB disease. Available at: www.cdc.gov/tb/topic/treatment/tbdisease.htm *Accessed Nov. 14, 2012*

The deadly duo: MDR-TB and XMDR-TB

In 1994 the World Health Organization and other partners developed the Global Project on Anti-tuberculosis Drug Resistance Surveillance (also known as the Global Project). This partnership has collected and analyzed data on drug resistance from around the world.

"Multi-drug resistant TB (MDR-TB) is present in virtually all countries surveyed." — World Health Organization[3]

MDR-TB is resistant to isoniazid (INH) and rifampin (RIF). If the organism is resistant to these two drugs and the second-line drugs, plus any fluoroquinolone and at least one of three injectable second-line drugs (amikacin, kanamycin, capreomycin), then it is extensively multidrug resistant (XMDR).[4] Fortunately, XMDR-TB is still rare.

Treatment protocols

Treatment protocols continue to develop complexities that are compounded by the decision of whether to start treatment based on evidence of latent TB infection (LTBI) or active TB. The usefulness of the blood test QuantiFERON-TB Gold for detecting TB infection in the United States continues to grow.[5]

Many protocols are now based on the fact that treatment must be given using direct observation treatment (DOT) techniques. That is, the medication is given to the patient and the clinician makes visual contact with the patient to ensure the medication is placed in the mouth and actually swallowed. This technique is labor intensive but does improve results.[6]

Latent TB infection

Once the state of LTBI has been established, there are two options for treatment:

1. Isoniazid 300 mg orally each day for nine months with vitamin B6 as needed. Liver toxicity and visual complication must be watched for during treatment.
2. Isoniazid as above, plus rifapentine (RPT) given for nine months with direct observation that the patient has indeed taken the drug is equally effective as isoniazid alone. As an effective anti-TB drug, this use in LTBI is "off label" and if the organism is resistant to rifampin, it will also be resistant to RPT.[7]

According to the *Morbidity and Mortality Weekly Report*, an estimated 9.6–14.9 million persons residing in the United States have LTBI. This pool of persons with latent infection is continually supplemented by immigration from areas of the world with a high incidence of TB and by ongoing person-to-person transmission among certain populations at high risk.[8]

Active TB

The decision to treat should be based on clinical, pathological, and radiographic findings and the results of microscopic examination of acid-fast bacilli (AFB)-stained sputum smears as well as other appropriately collected diagnostic specimens and cultures for my-

cobacteria. It is now recommended that all patients deemed active for TB be tested for HIV.[6]

There are 10 drugs approved by the U.S. Food and Drug Administration (FDA) for treating TB. The fluoroquinolones, although not approved by the FDA for tuberculosis, are commonly used to treat tuberculosis caused by drug-resistant organisms or for patients who are intolerant of some of the first-line drugs. Rifabutin is used only to prevent *Mycobacterium avium* complex disease in patients with HIV infection. Amikacin and kanamycin, used in treating patients with TB caused by drug-resistant organisms, are not approved by the FDA for tuberculosis.[6] (See Figure 1)

INH, RIF, ethambutol (EMB), and pyrazinamide (PZA) are considered first-line antituberculosis drugs. Rifabutin and RPT may also be considered first-line agents under specific situations. Streptomycin has incurred an increasing amount of resistance from TB organisms, thus it is not usually considered a first-line drug.[6]

Treatment of special groups

This article's limited scope will only allow mention of the fact that there are now protocols aimed at the treatment of special groups of active TB patients. These groups include: MDR/XMDR-TB, HIV/AIDS infected people with TB, children, extra-pulmonary TB, culture-negative pulmonary TB and radiographic evidence of prior pulmonary TB, liver disease, and pregnancy with subsequent breastfeeding.[6]

Important role of the RT

The role of the respiratory therapist in combating TB at home and abroad is important in controlling the disease. Hospitalized patients with TB are isolated, and thus their care is potentially harder, especially delivery of the much-needed human touch. Knowledge of the limits placed on care when a patient is isolated and how to give the most supportive care is critical to what an RT does for hospitalized TB patients.[9]

When abroad, the traveling RT must be aware that TB *is out there* and still a threat to the vacationing human. The cab driver who coughs up blood, the food handler who is coughing, the emaciated mother holding a child must be pointed out to local authorities. In 2009, there were about 10 million orphan children as a result of TB deaths among parents.[3] In 2010, 8.8 million people fell ill with TB and 1.4 million died from it.

The ongoing destructiveness of TB requires that the human race continue an unrelenting battle to achieve eradication. There have been many victories in the past. The TB death rate dropped 40% between 1990–2010.[3] As new tools are developed to wage the war, we must apply these tools with strength and faith that maybe this time we will deal a lethal blow to our ancient enemy. The estimated number of people falling ill with tuberculosis each year is declining, although very slowly, which means that the world is on track to achieve the Millennium Development Goal to reverse the spread of TB by 2015. This is a good path in the right direction, but it will take continuous coordinated efforts. ■

REFERENCES

1. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Reported tuberculosis in the United States, 2010. Atlanta GA; 2011.
2. Centers for Disease Control and Prevention (CDC). Trends in tuberculosis – United States, 2011. MMWR Morb Mortal Wkly Rep 2012; 61(11):181-185.
3. World Health Organization website. Tuberculosis fact sheet N°104. Available at: www.who.int/mediacentre/factsheets/fs104/en/ *Accessed March 2012*
4. Kim HR, Hwang SS, Kim HJ, et al. Impact of extensive drug resistance on treatment outcomes in non-HIV-infected patients with multidrug-resistant tuberculosis. Clin Infect Dis 2007; 45(10):1290-1295.
5. Mazurek GH, Jereb J, Lobue P, et al. Guidelines for using the QuantiFERON-TB Gold test for detecting Mycobacterium tuberculosis infection, United States. MMWR Recomm Rep 2005; 54(RR-15):49-55.
6. American Thoracic Society; CDC; Infectious Diseases Society of America. Treatment of tuberculosis. MMWR Recomm Rep 2003; 52(RR-11):1-77.
7. Centers for Disease Control and Prevention (CDC). Recommendations for use of an isoniazid–rifapentine regimen with direct observation to treat latent Mycobacterium tuberculosis infection. MMWR Morb Mortal Wkly Rep 2011; 60(48):1650-1653.
8. Taylor Z, Nolan CM, Blumberg HM. Controlling tuberculosis in the United States. Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR Morbid Mortal Wkly Rep 2005; 54(RR-12):1-81.
9. Jensen PA, Lambert LA, Iademarco MF, Ridzon R. Guidelines for preventing the transmission of Mycobacterium tuberculosis in healthcare settings, 2005. MMWR Recomm Rep 2005; 54(RR-17):1-141.

ADDITIONAL READING

Centers for Disease Control and Prevention (CDC) website: CDC Immigration Requirements: Technical instructions for tuberculosis screening and treatment. Available at: www.cdc.gov/immigrantrefugeehealth/pdf/tuberculosis-ti-2009.pdf *Accessed Nov. 14, 2012*

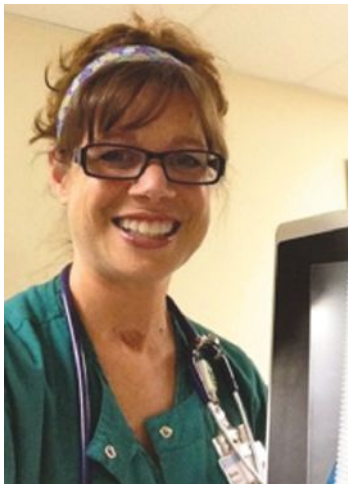
CDC website. Slide sets: Guidelines for preventing the transmission of *M. tuberculosis* in health-care settings, 2005. Available at: www.cdc.gov/tb/publications/slidesets/default.htm *Accessed Nov. 14, 2012*

CDC. Plan to combat extensively drug-resistant tuberculosis: recommendations of the Federal Tuberculosis Task Force. MMWR Recomm Rep 2009; 58(RR-3):1-43.

CDC. Updated guidelines for the use of nucleic acid amplification tests in the diagnosis of tuberculosis. MMWR Morb Mortal Wkly Rep 2009; 58(1):7-10.

Jereb JA. Progressing toward tuberculosis elimination in low-incidence areas of the United States. Recommendations of the Advisory Council for the Elimination of Tuberculosis. MMWR Recomm Rep 2002; 51(RR-5):1-14.

Mazurek GH, Jereb J, Vernon A, et al. Updated guidelines for using Interferon Gamma Release Assays to detect *Mycobacterium tuberculosis* infection – United States, 2010. MMWR Recomm Rep 2010; 59(RR-5):1-25.



Ronda Passon's parents made sure she experienced normal childhood activities, like riding bikes with her sister.

Passon developed a knack for "multitasking" while receiving her breathing treatments as a kid. Here she practices the violin during an intermittent positive-pressure breathing treatment.

by Debbie Bunch

Surviving Cystic Fibrosis

Lung transplant gives Michigan RT a new lease on life

Most respiratory therapists can only imagine how their patients feel. Ronda Passon has walked in their shoes.

Ronda Passon's mother knew something was wrong almost from the moment she brought her baby daughter home from Butterworth Hospital in Grand Rapids, MI, in 1967. Passon was the third of three children — she has two older sisters — so her mother had lots of experience with newborns, and her youngest daughter's diapers had a foul smell she had never noticed with her other two and she wasn't gaining weight like she should.

"She kept taking me back to the doctor, insisting there was something wrong," says Passon, a Registered Respiratory Therapist and AARC member who now works at the hospital where she was born. The hospital

is known today as Spectrum Health. It took a year for physicians to arrive at a diagnosis; and when they did, it was devastating for the family. "My parents had never heard of cystic fibrosis before, and the information available to them at that time was very bleak," recalls the AARC member. "They were told I would not live to kindergarten."

A "normal" childhood

That wasn't surprising for the time. In the 1960s the mortality rate for children diagnosed with cystic fibrosis (CF) was 40% in the first year of life, and surviving to see an 18th birthday was a rarity. But new organizations specializing in CF research were being formed, and treatments were changing as well. With oral medications and dietary adjustments to control her digestive symptoms, and breathing treatments and regular hospital stays to manage the pulmonary aspects of the disease, Passon defied the odds. Her parents made sure she lived her life as any other child would, too. "My parents did their best to ensure I had a 'normal' childhood — when I wasn't being forced to take a handful of pills, take breathing treatments, and get pounded on," says the therapist. On days when she had to go to the clinic she had to miss a half a day of school, and she remembers her mother treating her to lunch in the coffee shop. When she was hospitalized for a "tune-up," her parents made sure she spent her free time catching up on homework.

"The kids at school didn't tease me much," she says, a fact she always chalked up to her small stature and frequent bouts of coughing. Later in life she found out her parents were behind that, too. "My mom and teachers would talk to the class when I wasn't there and explain things to them," she says.

As for herself, she says all the medical care she had to receive never really bothered her that much, although she did have moments when she wished she were more like other kids. "Neither of my sisters nor any of my friends took medications, coughed all the time, or had to do 'therapy'; but this was a part of my life — I didn't know any different and just accepted it," she says. "Occasionally, I would fantasize that the physicians misdiagnosed me, but then reality would seep back in."

A shy child — something she attributes to not wanting to draw any more attention to herself than was already

Most of the time, her patients never know she has CF and has undergone a transplant. But when someone is having an especially tough time, she will share her own history. "Sometimes it helps to know that those taking care of you really know what you're going through," she says.

drawn by her coughing — Passon says she never came up with a clever reply to the "you shouldn't smoke so much" comment she heard repeatedly as a kid. But for the most part, she didn't let CF stand in the way of the things she wanted to do. "My parents let me be a kid and didn't hold me back from doing things, except on two occasions," she recalls. One she hated, and the other she actually kind of liked.

When she was in sixth grade and her classmates were vying for jobs as a safety guard to help younger children cross the street, her parents said no, noting that it would not be advisable for her to be out in the cold Michigan winters for so long. But that same "bad weather" argument played in her favor in another respect. "On blustery wintery days I was held in for recess, which didn't bother me one bit! I got to sit in the library and read, which I loved doing."

RTs make an impression

Passon went in for two-week CF tune ups once a year and visited the CF clinic every three to four months until she went off to college, seeing a dietician, physician, and a respiratory therapist. Some kids with cystic fibrosis have problems swallowing all of the pills necessary to treat the condition, but she says she got most of them down fairly easily — except for the enzymes she needed to help digest food. "I had to open the pills and mix the powder inside with mint jelly — had to be mint and I have no idea why — in order to get the meds down," she recalls. "My mom would have to carry a jar of mint jelly all the time." When she was little she would even name her pills — one she called "Turtle Island."

Before the advent of albuterol, her respiratory treatments consisted of isoetharine, and she also used theophylline. Then, when she was in her teens, nebulized tobramycin came along, which was the treatment of choice before aerosolized antibiotics became common practice.

The respiratory therapists she saw in the clinic and hospital made a big impression on her. "The clinic therapist would help me find devices available for chest physiotherapy and portable nebs," she says. "The RTs in the hospital would do my chest physiotherapy by hand back then, so we had plenty of time to talk." She eventu-

Respiratory care helped Passon deal with her condition; now she helps other pulmonary patients deal with theirs as an RT at Spectrum Health.

ally bonded with one therapist, who was not much older than she was at the time, and bombarded her with questions about becoming an RT. "Faith, whom I still work with, made a big impression on me becoming an RT," she says now.

Getting career advice was a new experience for Passon. "As a child, no one ever asked me what I wanted to do when I grew up," she says. But the more she learned about the profession, the more she began to think it might be for her. However, high school chemistry wasn't her best subject; so when she entered college, she took secretarial courses and graduated with an associate's degree in that. After graduation, though, she knew she had followed the wrong path. "I turned around and went back to school for respiratory."

Passon graduated in 1989 and went to work at Butterworth doing floor therapy. "When people are sick, scared, and vulnerable, it is a wonderful feeling to be able to help them physically and emotionally," she says.

A whole other set of issues

The original prognosis physicians had given her parents back in 1968 — that she wouldn't live until kindergarten — was certainly a thing of the past. But Passon says living as an adult with CF opened up a whole other set of issues. How and when do you tell your employer? What about dating and marriage? Who would want to marry you if they knew your birth certificate came with an expiration date? After watching her mother in her last days of life, Passon decided she wouldn't want to put a spouse through that; but friends eventually talked her out of it and she did marry, although she later divorced. Having kids never really entered the picture. "I was never quite healthy enough or had enough energy," she says.

Eventually her health worsened. Hospitalizations became more frequent and longer. A port was placed, veins were becoming scarce, PICC lines were no longer an option, and since she was having increasing difficulty maintaining her weight, a peg tube was inserted for nightly

supplemental feedings. Her lung function numbers were on the downswing as well. Remarkably, she was still working full time — something she says may not have been the best choice but is a common occurrence among CF patients, who often don't believe they are as bad off as they really are.

Clearly, something new needed to be done, and Passon credits her ex-husband for the idea by encouraging her to look into a lung transplant as an option. She was evaluated at the Loyola University Medical Center in Chicago in 1996 and placed on the transplant list. They gave her a pager and sent her home.

"Every three months I would travel to Chicago for a checkup," she recalls. She continued working, and about a year into the wait was at the top of the list. But by then she was doing much better, using oxygen at night only. She decided to go "on hold," which meant that she would remain on the list, but if her name came up she would be passed over for the time being to allow someone else to go ahead of her. "I turned off the pager, and it was like a huge weight had been lifted," she says. "I was not ready for this mentally."

The big day arrives

Fast forward another year. Her marriage was on the rocks and her health was once again on a downward slide. She also had to come to terms with the fact that working really was no longer an option. In May of 2000 she decided to be reactivated on the transplant list. "My friends, family, and God held me up during this roller coaster ride of emotions," says Passon. "When the phone call arrived at midnight in September, I was very calm and at peace. I was ready. This was it. I knew in my heart that everything was going to be alright."

The transplant took place at Loyola on Sept. 30, 2000. She doesn't know much about her donor, except that she was a 13-year-old girl. "Knowing that she was so young breaks my heart, and I try to live so her family can know her lungs were not wasted," she says. "If I ever meet them, I picture myself giving them a huge hug with a big 'thank you' — though that doesn't seem like enough."

Passon spent about a month in the ICU after the transplant. A few complications along the way led to a tracheostomy. Once the trach was out, she spent another 10 days in rehabilitation to get her strength back after being bedridden for so long. Her physicians didn't want her to leave the area; so at that point she spent two more months in a furnished apartment near the hospital, with friends and family taking turns staying with her. "It was a joyous day in January when one of my co-workers, Liz, whom I still work with today, brought me home!" she says. "I slowly got into a routine of being 'normal.' That included learning how to deal with all the free time she had now since she no longer had to spend hours doing therapy — and finding ways to burn off all the new energy that came with her new bill of health.

She was able to use all that energy last fall when she participated in the Transplant Games of America, an Olympic-style event hosted by her hospital's corporate parent, other organizations for people who have had transplants, and the families of donors. Since she has been cycling for the past few years, she decided to enter the bicycle event. "I signed up for the 20K race, thinking this would be a great goal to push myself toward," she says. Having never competed in an athletic event before, training was new to her and she realizes now that she probably didn't invest the time into it that she should have. "I made it three of the four laps of the course — next time I'll know what I need to do to train better!"

She is quick to note that competition wasn't what the day was all about. The camaraderie between the transplant patients and the families of people who have given the gift of life was the important part. "Seeing all of the recipients full of life, living for themselves and their donors is an incredible sight," she says. "Having never met my donor family, it was nice for me to be able to see so many at the games and thank them."

"I know what it feels like"

Ronda Passon says she doesn't know whether her own experience with a pulmonary condition makes her better at caring for her patients, but she does believe that she has a better understanding of what they are feeling. "I know what it feels like to not be able to breathe and to want a treatment first thing in the morning. I know what it feels like to lie in that bed and have people parade in and out all day; for lab to come in first thing in the morning and flip on the light before saying anything."

Most of the time, her patients never know she has CF and has undergone a transplant. But when someone is having an especially tough time, she will share her own history. "Sometimes it helps to know that those taking care of you really know what you're going through," she says. "It is easy to think of health care providers as 'normal people with normal lives' who don't have problems." As she well knows, sometimes that's just not the case. ■

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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 Congress 2012

58th International Respiratory Convention & Exhibition • New Orleans, LA

A Vision for the Respiratory Care Profession

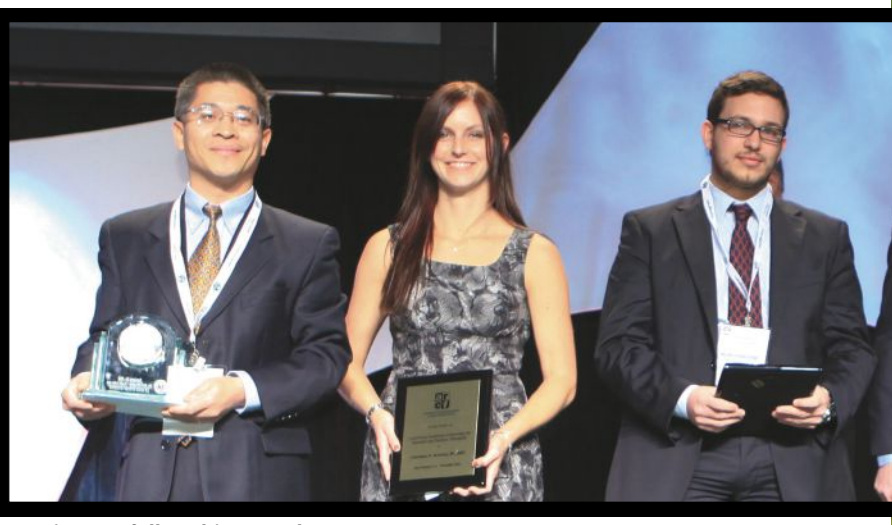
Where the *SCIENCE* of Our Past Collided with the *CHANGES* of Our Present To Create the *VISION* for Our Future

The health care industry has been talking about major change for many years now, but in 2012 it was finally apparent that change wasn't just coming — it was here. As provisions in the Affordable Care Act began to go into effect and hundreds of thousands of baby boomers enrolled in Medicare on a daily basis, hospitals and other organizations placed a new emphasis on ensuring patients received the right care at the right time and at the right place.

(continued on page 40)

Photos by Lennie Sirmopoulos, Convention Photography, Tustin, CA

Phyllis Brunner received the CoARC site visitor award.



Literacy fellowship awardees

CONGRESS 2012

Dr. Bruce Rubin

A Vision for Respiratory Care

(continued from page 38)

AARC Congress 2012 delivered the hands-on information respiratory therapists would need to be key players in the new paradigm, with more than 250 sessions on cutting-edge respiratory care topics, over 300 original research papers presented in 20 Open Forums, and an Exhibit Hall packed with the latest that technology has to offer.

"Health care organizations sent their respiratory managers and staff to New Orleans to get up to speed on the technology and strategies that will play a critical role in their ability to avoid costly hospital readmissions and continue to deliver state-of-the-art care in this era of health care reform," says AARC President George Gaebler, MSEd, RRT, FAARC. "The Congress did that and more, sending attendees home with a wealth of new ideas on improving the clinical experience while keeping a close eye on the bottom line."

Of course the meeting was also a place to honor top performers in respiratory care, network with colleagues from across the country and around the world, and enjoy the camaraderie of friends old and new alike at social events and during excursions in and around the newly refurbished and absolutely beautiful city of New Orleans.

Turn the page for all the news and information from the 58th AARC International Respiratory Convention & Exhibition. The AARC Congress 2012 provided attendees with the intellectual fuel they will need to ensure the science of their past meets the changes of their present to create the vision for their future.

Jimmy A. Young medalist Dr. Bruce Rubin

Linda Smith received the Thomas L. Petty MD Invacare Award for Excellence in Home Respiratory Care.

Patrick Dunne received the Forrest M. Bird Lifetime Scientific Achievement Award.

Top Performers Take Center Stage

Top performers in the AARC, NBRC, and CoARC were honored during the Awards Ceremony in New Orleans.

- Jimmy A. Young Medal: Bruce K. Rubin, MD, MEngr, MBA, FRCPC, FAARC
- NBRC/AMP William W. Burgin Jr. MD Education Recognition Award: Adriana Cheteles
- William F. Miller MD Postgraduate Education Recognition Award: Bryan A. Wattier, BA, RRT
- NBRC/AMP Gareth B. Gish MS RRT Memorial Postgraduate Education Recognition Award: Matthew Trojanowski, BA, RRT
- Morton B. Duggan, Jr., Memorial Education Recognition Award: Claudia Ramos
- Jimmy A. Young Memorial Education Recognition Award: Janet J. Vadakkan, BS
- Charles W. Serby COPD Research Fellowship: Alexandros G. Mathioudakis, MD
- Monaghan/Trudell Fellowship for Aerosol Technique Development: Jinxiang Xi, PhD

(continued on page 42)

Hector Leon Garza international awardee Sam Giordano

Albert H. Andrews awardee Kent Christopher

Specialty Practitioners of the Year:

Adult Acute Care, Eric Kriner, BS, RRT; Continuing Care/Rehabilitation, Arianna Villa, BS, RRT; Diagnostics, Mary Lackey, RRT, CPFT; Education, Doug Gardenhire, EdD, RRT-NPS; Long Term Care, Yolanda Petty, RRT; Management, Bill Roberts, BA, RRT; Neonatal-Pediatrics, Robert DiBlasi, BSRT, RRT-NPS, FAARC; Sleep, Karla Smith, BS, RRT, RPSGT; Surface & Air Transport, Richard Mitchell, RRT-NPS

Specialty Practitioners of the Year

Awardees Listing 2012 (cont.)

- Philips Respironics Fellowship in Non-Invasive Respiratory Care: Patricia A. Achuff, MBA, RRT-NPS
- Philips Respironics Fellowship in Mechanical Ventilation: Anna C. Braga, MSc, PT
- CareFusion Fellowship for Neonatal and Pediatric Therapists: Christine N. Kearney, BS, RRT
- Forrest M. Bird Lifetime Scientific Achievement Award: Patrick Dunne, MEd, RRT, FAARC
- Dr. Charles H. Hudson Award for Cardiopulmonary Public Health: Melaine Giordano, MSc, RN, CPFT
- Thomas L. Petty MD Invacare Award for Excellence in Home Respiratory Care: Linda A. Smith, BS, RRT, FAARC
- Mike West MBA, RRT Patient Education Achievement Award: Mike West, MBA, RRT
- Ikaria Best Paper Award by Best First Author: Robert F. Wolken, RRT; Russell J. Woodruff, RRT; Jan Smith, RN; Richard K. Albert, MD; Ivor S. Douglas, MD
- Dr. Allen DeVilbiss Best Paper Award: Jeffrey M. Haynes, RRT, RPFT
- Albert H. Andrews Jr. MD Memorial Award: Kent L. Christopher, MD, RRT, FAARC
- Dr. Ralph L. Kendall Outstanding Site Visitor Award: Phyllis Brunner, BS, RRT, CPFT
- Héctor León Garza MD Achievement Award for Excellence in International Respiratory Care: Saverio P. Giordano, MBA, RRT, FAARC
- International Fellows: Audrey Forson, MB ChB, FWACP, MSc; Raul Castro Garcia, CRT; Job Joseph, MD; Ling Liu, MD; Manling Liu, MD; Anitha Nileshwar, MD; Sanihe Ugurlu MSci, PT
- Honorary Membership: Miriam A. O'Day
- Life Memberships: Richard M. Ford, BS RRT, FAARC; Timothy R. Myers, MBA, RRT-NPS, FAARC

The following were recognized in a separate awards ceremony that took place during the Annual Business Meeting. Congratulations to:

- Outstanding Affiliate Contributor: Deborah Linhart, BS, RRT, of the Illinois Society for Respiratory Care
- Delegate of the Year: John Wilgis, MBA, RRT
- Summit Award: Respiratory Care Society of Washington

John J. Nance, Keynote speaker

Outgoing AARC President Karen J. Stewart and new life member Richard Ford

John J. Nance Inspires Audience To Put Safety First

Taking a page from his own award-winning book, "Why Hospitals Should Fly," John J. Nance informed and entertained Congress attendees during his keynote address on how to improve patient safety in the hospital.

An expert on aviation safety and an aviation consultant for "ABC World News Tonight" as well as "Good Morning America," Nance related some of his team-centric experiences in flying to those of a health care team. Emphasizing how humans are known to make mistakes often, he said, "We need to follow best practices, standard procedures, and checklists." He said checklists play a life-saving role in health care in the process and noted the AARC now has checklists available to assist RTs in ensuring patient safety.

Nance also told the audience, "We also need to get rid of the silos. The most dangerous phrase in respiratory therapy is, 'This is the way we've always done it.'"

Support for the keynote address was provided through an unrestricted educational grant from Fisher & Paykel Healthcare.

To see his full presentation online, go to www.aarc.org/education/meetings/congress/gazette.

← ■ AARC Zenith Awards went to Teleflex, Philips Respironics, Fisher & Paykel, Draeger, Covidien, and Boehringer Ingelheim.

■ Zenith Winners Epitomize Best in Respiratory Care

The AARC honored six respiratory care companies with its annual Zenith Awards. The 2012 recognition went to Boehringer Ingelheim, Covidien, Draeger, Fisher & Paykel, Philips Respironics, and Teleflex. Each of the six companies was selected by our members based on the quality of its products, accessibility of its sales staff, responsiveness, service record, truth in advertising, and support of the respiratory therapy profession.

The awards were accepted by company representatives during the Awards Ceremony on Saturday.

The Respiratory Care Society of Washington won the Summit Award

11th Hour, 11th Day, 11th Month: AARC Honors Veterans

President Woodrow Wilson established "Armistice Day" in 1919 to commemorate the signing of the armistice that ended World War I. That historic moment took place at the 11th hour of the 11th day of the 11th month in 1918 and set the stage for the holiday we now know as Veterans Day. Congress attendees had the chance to mark Veterans Day 2012 outside the Exhibit Hall with a flag ceremony and color guard, organized by AARC members and veterans of service Joe Buhain, EdD, RRT, FAARC; Woody Woodcox, MPH, RRT; and Gary Lynch, RRT.

The Association also received a special gift during the Awards Ceremony from SFC Ian Smith, CRT, an AARC member from Louisiana who recently served in Afghanistan. SFC Smith brought a flag that had flown over the hospital where he worked during his tour of duty and presented it to the AARC to all of our military members and veterans of service. The AARC supports and honors all veterans for their sacrifices. ■

■ AARC Fellows (FAARC):

Lonny J. Ashworth, MEd, RRT; Ellen A. Becker, PhD, RRT-NPS, RPFT; Celeste Belyea, RRT, RN, AE-C; Louis J. Boitano, RRT, RPFT; Ronda Zinser Bradley, MS, RRT; Joel M. Brown II, BS, RRT; Thomas J. Cahill, BS, RRT-NPS, EMT-P; Larry H. Conway, BS, RRT, LRCP; Michael P. Czervinske, RRT-NPS; Robert R. Demers, BS, RRT; Marie A. Fenske, EdD, RRT; Debra J. Fox, MBA, RRT-NPS; Douglas S. Gardenhire, EdD, RRT-NPS; James E. Ginda, MA, RRT, AE-C; Lee Guion, MA, RRT; Brent D. Kenney, BSRT, RRT; Debbie Koehl, MS, RRT-NPS, AE-C; Douglas S. Laher, MBA, RRT; David C. Lain, RRT, FCCP; Thomas R. Lamphere, BS, RRT, RPFT; Jim Lanoha, AS, RRT; Hui-Ling Lin, MS, RRT, RN; Gary L. Lynch, RRT; Robert W. Messenger, BS, RRT, CPFT; Timothy R. Myers, MBA, RRT-NPS; Peter J. Papadakos, MD, FCCP, FCCM; Jan Phillips-Clar, BS, RRT; William C. Pruitt, MBA, RRT, CPFT; Dario Rodriquez, Jr., BS, RRT; Bruce Toben, RRT-NPS, CPFT; Sheri L. Tooley, BSRT, RRT-NPS, CPFT; Margaret L. Trumpp, MEd, RRT, AE-C

Fellows of the AARC

AARC Installs 2013 Officials

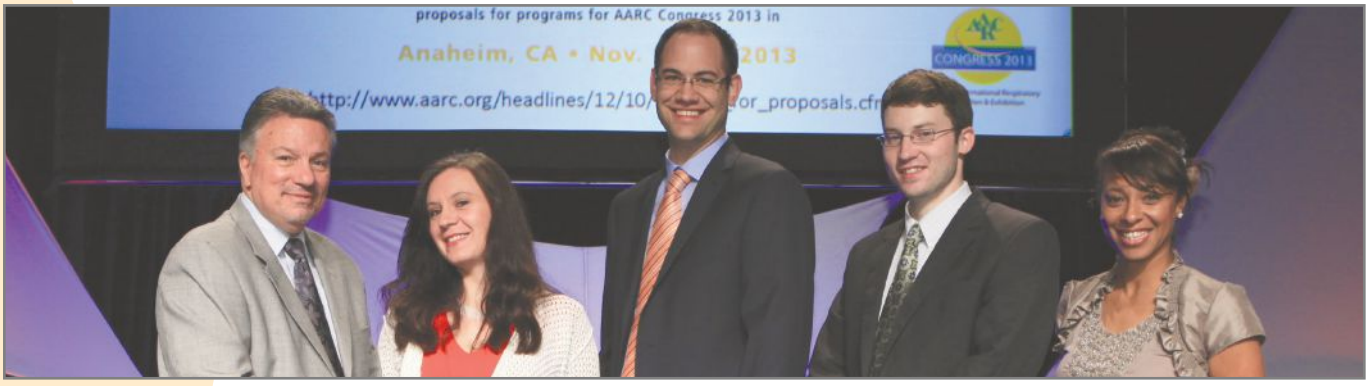
Our Association installed its 2013 officials during the AARC Annual Business Meeting that took place during the Congress. In-coming president, George Gaebler, MSEd, RRT, FAARC, took over the gavel from outgoing president, Karen Stewart, MSc, RRT, FAARC. Brian Walsh, MBA, RRT-NPS, FAARC, was installed as vice president for internal affairs; Colleen Schabacker, BA, RRT, FAARC, as vice president for external affairs; Frank Salvatore, MBA, RRT, FAARC, as secretary-treasurer; and Sheri Tooley, BSRT, RRT-NPS, CPFT, and Gary Wickman, BA, RRT, FAARC, as directors-at-large.

Three Specialty Sections also held elections this year, and these individuals were elected: Home Care, Kimberly Wiles, BS, RRT, CPFT; Neonatal-Pediatrics, Natalie Napolitano, MPH, RRT-NPS, FAARC; and Sleep, Russell Rozensky, BS, RRT-SDS, RPSGT.

New House of Delegates officers include: speaker, John Steinmetz, MBA, RRT; speaker-elect, Debra Skees, BS, RRT, CPFT; secretary, Terri Miller, MEd, RRT, CPFT; and treasurer, Ross Havens, MS, RRT. Karen Schell, MHSc, RRT-NPS, RPFT, is now the past speaker. ■

Tudy Giordano received the Dr. Charles H. Hudson award.

Honoring Top Performers



■ Education Recognition awardees:

Adriana Cheteles
Bryan A. Wattier
Matthew Trojanowski
Claudia Ramos
Janet J. Vadakkan

■ International Fellows:

Audrey Forson, MB ChB, FWACP, MSc;
Raul Castro Garcia, CRT;
Job Joseph, MD;
Ling Liu, MD;
Manling Liu, MD;
Anitha Nileshwar, MD;
Sanihe Ugurlu MSci, PT

Building Your Foundation for Our Tomorrow

Many of the award winners you see featured on these pages were honored by the American Respiratory Care Foundation (ARCF) for their scholarship or research in respiratory care. The grants and awards given out by the Foundation are made possible by endowments funded by generous donations from respiratory care industry, the AARC state societies, and individual members of the profession.

At AARC Congress 2012, attendees were asked to contribute to their Foundation, and we were amazed at the results. Over the four-day collection period, we raised more than $1,200 for the ARCF. We'd like to take this opportunity to say a special thank you to everyone who opened their wallets.

If you'd like to join your colleagues in supporting the scholarship and research that defines your profession, visit www.ARCFoundation.org and click on "Support" in the top menu to make a donation to furthering research in the respiratory care profession.

Find more photos and stories by logging on to www.aarc.org

Family of Mike West

New Award Honors Long-time Patient Educator

Thanks to a generous endowment from Philips Respironics, the Mike West MBA RRT Patient Education Achievement Award was presented for the first time during Saturday's Awards Ceremony. The award is designed to honor a respiratory therapist annually who has demonstrated a profound impact on patients by measureable outcomes as a result of patient education.

The inaugural award was presented posthumously to Mike West, who passed away at the end of October. West was recognized for his career-long efforts to ensure that patients, caregivers, and industry obtain the highest understanding of respiratory disease and the best possible solutions for people living with chronic conditions.

AARC Congress 2012

58th International Respiratory Convention & Exhibition • New Orleans, LA

Big Ideas Rule the Day Given the plethora of new developments in health care these days, keeping up is a challenge. AARC Congress 2012 broke down the key elements for attendees, covering the technological and scientific advances that will improve care for their patients along with the new strategies they'll need to thrive under a health care system gearing up to place a greater emphasis on preventive services, disease management, and patient satisfaction.

Neil R. MacIntyre discussed full-feature ventilators.

Photos by Lennie Sirmopoulos, Convention Photography, Tustin, CA

Clinical Advances Meet C-Suite Must-Haves

Presentations at AARC Congress 2012 featured the hottest topics in the field delivered by names known far and wide.

Ira M. Cheifetz, MD, FAARC, moderated a symposium on extracorporeal membrane oxygenation and the growing role it is playing in the care of adult patients, particularly those with refractory acute respiratory distress syndrome.

Neil R. MacIntyre, MD, FAARC, and **Dean R. Hess**, PhD, RRT, FAARC, squared off on the merits of full-feature ventilators; and **Garry Kauffman**, MPA, RRT, FAARC, and **Timothy Myers**, MBA, RRT-NPS, FAARC, argued the pros and cons of routine respiratory therapy delivered by RTs in the Program Committee's spotlight session on respiratory controversies.

John Davies, MA, RRT, FAARC, and his colleagues covered the respiratory therapist's role in research in their symposium, sharing hands-on information aimed at equipping more RTs with the basic knowledge they need to put their toe in the "research waters."

(continued on page 50)

Mechanical ventilation pre-Congress course

Recap: Phil Kittredge Memorial Lecture

Thinking Outside the Box: Moving the Profession Beyond Hospital Walls

Timothy R. Myers, MBA, RRT-NPS, FAARC, presented the 28th Annual Phil Kittredge Lecture. Here is a recap of his presentation.

The focus of U.S. health care is rapidly shifting from one of reaction and treatment to one of pro-action and prevention. This coincides with the steadily increasing number of patients with acute and chronic respiratory conditions seeking diagnosis, management, and care across the entire continuum. The respiratory therapist has a diverse and unique set of clinical skills that are important to patients with cardiopulmonary disease; but to meet the needs of the future, a sharper focus on quality, safety, and outcomes will be required. We need to become physician extenders throughout the continuum of care with the knowledge, skills, and attributes necessary not just for the management and treatment of acute conditions but for the diagnosis, assessment, management, and education of chronic respiratory conditions as well.

The RT must be ready and prepared to step forward to meet these challenges and opportunities. To do that, we must step out of our current practice model and environment of care to once again become "pioneers of change" in the way patients with cardiopulmonary diseases are diagnosed, managed, and educated.

The past 65 years have witnessed an exponential growth in the technology, skill sets, and scope of practice of the RT. But to be a significant part of the future health care model, we must re-energize the profession to position itself to be the difference maker for respiratory care patients across the entire continuum of care by providing reliable, high-quality, and safe care that produces positive clinical and financial outcomes for the health care system. ■

Timothy R. Myers

(continued from page 48)

Richard Kallet, MS, RRT, FAARC, addressed the issue of appropriate tidal volume in this era of lung protective ventilation (LPV). He emphasized the need to prioritize when and in whom LPV should be vigorously implemented, as well as when a liberalized or "harm-reduction" strategy would be warranted.

William Galvin, MSEd, RRT, FAARC, **Shawna Strickland**, PhD, RRT-NPS, FAARC, and **Sarah Varekojis**, PhD, RRT, provided therapists with the foundation they will need to become patient educators in their hospitals, stressing assessment skills, setting objectives, teaching techniques, and outcomes assessment.

Dean R. Hess, PhD, RRT, FAARC, moderated the 28th New Horizons in Respiratory Care Symposium: The Scientific Basis for Respiratory Care. The session started with a look back at a time when "scientific evidence" was a little-known concept in respiratory care and took attendees through the recent evidence for everything from airway clearance techniques to protocol-directed respiratory care.

Debbie Koehl, MS, RRT-NPS, FAARC, and her colleagues took on the business of pulmonary rehabilitation in their symposium, providing a step-by-step approach to starting a new program while at the same time offering tips for enhancing existing programs for those already operating these life-enhancing services.

Robert DiBlasi, RRT-NPS, FAARC, provided an analysis of nitric oxide and its growing use in the treatment of respiratory patients on noninvasive ventilation. Patient safety aspects of the treatment were stressed, along with the need for further research to clarify issues surrounding the therapy.

Greg Spratt, BS, RRT, CPFT, moderated a session on the AARC's Hospital-to-Home project, reviewing the progress made so far and bringing attendees up-to-date on the next steps in the Association's effort to assist clinicians on both the hospital and home care sides of the fence as they work to reduce costly hospital readmissions.

Garry Kauffman, MPA, RRT, FAARC, and his colleagues hosted not one but two "Management Boot Camps" focusing on topics essential to managerial success, including marketing RC services, coaching staff, dealing with difficult employees, documenting the value of the department, establishing productive relationships with physicians, utilizing productivity and benchmarking systems, and fine-tuning leadership skills.

Tabatha Dragonberry, BSRT, RRT-NPS, AE-C, gave attendees a behind-the-scenes look at what goes on during an inter-facility transport, from the initial referral call all the way to pick up of the patient.

Byron Thomashow, MD, examined the teachable moment for COPD patients hospitalized with an acute exacerbation, emphasizing the minimum elements that must be addressed for a successful transfer home.

Frank R. Salvatore, MBA, RRT, FAARC, **Camden J. McLaughlin**, BS, RRT, FAARC, and **Sheri Tooley**, BSRT RRT-NPS, FAARC, outlined the process hospitals go through to start a sleep center in their symposium, covering everything from the basics of the business plan through the design of the physical space and competency assessment for sleep personnel.

Cheryl A. Hoerr, MBA, RRT, FAARC, presented a new perspective on cost containment and what RC managers can do to help their hospitals reduce costs while at the same time maintaining the integrity of their respiratory services in the changing health care environment.

Patricia Munzer, DHSc, RRT, FAARC, moderated a CoARC session on transforming students into competent therapists. The symposium was designed to ensure educators have the tools they need to incorporate critical thinking into the curriculum, implement competency-based standards, and assure student success on the credentialing exams. ■

International Impact

The days when the respiratory care profession was largely a North American phenomenon are rapidly coming to an end, and that was clearly evident at the meeting by the number of international speakers and attendees who joined us in New Orleans:

■ Faten I. Al-Hubaishi, BSc, CRT, RRT-NPS, came from Saudi Arabia to talk about tracheostomy care; and Italy's Stefano Nava, MD, covered noninvasive ventilation in the Egan Lecture and also presented on closed-loop long-term oxygen therapy.

■ The Open Forum featured abstract presentations by colleagues from the United Kingdom, Taiwan, Italy, Brazil, Japan, Canada, Poland, Portugal, France, India, China, Saudi Arabia, and Australia.

■ We welcomed another seven international fellows to our meeting: Audrey Forson, MB, ChB, FWACP, MSc, Ghana; Raul Castro Garcia, Ecuador; Job Joseph, MD, Haiti; Ling Liu, MD, China; Manlin Liu, China; Anitha Nileshwar, MD, India; and Sanihe Ugurlu MSc, PT, Turkey.

■ The International Council for Respiratory Care met during the meeting, hearing reports from Governors from Mexico, Colombia, Japan, Saudi Arabia, Italy, China, South Korea, The Philippines, Taiwan, Canada, Turkey, India, and Argentina.

Two people who have significantly impacted international respiratory care over the years were honored at the Congress as well. The Héctor León Garza MD Achievement Award for Excellence in International Respiratory Care went to former AARC Executive Director Sam Giordano, MBA, RRT, FAARC, for his decades-long efforts to establish stronger bonds between RTs here in the states and their colleagues overseas. Among the inroads that took place during his 30+ years at the helm of the Association: the establishment of the AARC International Fellowship Program and the formation of the International Council for Respiratory Care (ICRC) and its International Education Recognition System.

The other international award bestowed at the meeting was the Koga Medal, which was presented to Yoshihiko "Bill" Kashiwazaki, president of Pacific Commercial Inc. and governor-at-large for the ICRC and a member of the ICRC Executive Committee. Over the past two decades, Kashiwazaki has been directly involved in the organization and support of more than 50 seminars on respiratory care for physicians, RTs, and RNs in Japan and the Asia Pacific area. ■

Government Representative

A Meeting of the Minds

The Respiratory Care Editorial Board took advantage of the Congress to gather the majority of its members together for a face-to-face meeting aimed at reviewing recent progress made at the Journal and delving into plans for the future. "Members of the Editorial Board were updated on Journal activities for the past year," says Dean Hess, PhD, RRT, FAARC, editor-in-chief. "Of particular note, unsolicited submissions of original research are at an all-time high number." The Editorial Board was also introduced to the Journal's new website, hosted by HighWire, which went live in December.

The board was especially pleased to have two of its international members in the room. Stefano Nava, MD, from Italy and Masaji Nishimura, MD, from Japan brought the global perspective to the meeting, reflecting the growing influence Respiratory Care is having on international respiratory care.

Congress attendees learned more about developments at the Journal in the Respiratory Care Symposium. Presentations addressed everything from the five best research papers and case reports published over the past years to the two Journal conferences that took place in 2012, one on oxygen and the other on adult mechanical ventilation. Dr. Hess also highlighted advances made by the Journal over the past five years, and the session ended with a roundtable wherein audience members were able to ask questions of the editors. ■

Health care is a many-faceted industry, and government officials are increasingly realizing that respiratory therapists are necessary to keep the system operating properly. This year they sent one of their representatives to our meeting to bring RTs up-to-date on a topic they believe deserves the therapist's undivided attention.

Donald F. Egan Memorial Lecture

Behind a Mask: Tricks, for Noninvasive

In the late 1980s, when innovators first began using noninvasive ventilation (NIV) in patients with acute respiratory failure (ARF) as a potential alternative to endotracheal intubation, few clinicians would have thought that within 20 years this technique would become a first-line intervention for some forms of ARF.

Compared with medical therapy, and in some instances with invasive mechanical ventilation, NIV improves survival and reduces complications in selected patients with ARF. The main indications are exacerbation of COPD, cardiogenic pulmonary edema, pulmonary infiltrates in immunocompromised patients, and weaning of previously intubated stable patients with COPD.

This technique can also be used in postoperative patients or those with neurological diseases, to palliate symptoms in termi-

Speaks Directly to RTs

Congress attendees had the opportunity to learn more about a government initiative to include surveillance for ventilator-associated events in the National Healthcare Safety Network from Shelley Magill, MD, PhD, an epidemiologist from the Centers for Disease Control and Prevention (CDC). Dr. Magill filled in attendees on the working group convened to develop a new surveillance definition algorithm for adult patients on mechanical ventilation that addresses complications of mechanical ventilation beyond ventilator-associated pneumonia (VAP).

Noting that surveillance was previously limited to VAP, Dr. Magill says the algorithm focuses on more general measures of conditions and complications in adult patients on mechanical ventilation, with the ultimate goal being to enhance patient safety. Respiratory Care Editor-in-Chief Dean Hess, PhD, RRT, FAARC, who moderated Dr. Magill's session and represented the AARC on the CDC working group, says surveillance for complications other than VAP will require that respiratory therapists work with infection control practitioners to identify ventilator-associated conditions (VAC) and implement best practices to prevent VACs. ■

Pitfalls, and Prejudices Ventilation

by **Stefano Nava, MD**

Egan lecturer Stefano Nava, MD

nally ill patients, or to help with bronchoscopy. However, further studies are needed in these situations before it can be regarded as first-line treatment.

Skill of the caregivers and the extent of their experience in the use of NIV are important to the success of this technique. Thus, as the skills of staff develop, they might be able to successfully treat very sick patients.

Optimum staffing and location for delivery depend on the acuity of the patient and the severity of the illness, monitoring capabilities of the unit, and experience of the staff. Ventilators and monitoring systems have improved and might be important in the success of NIV. Specifically, most new ventilators have modes that compensate for air leaks, improved and sometimes adjustable triggering, and systems to achieve best possible synchrony and minimize rebreathing of carbon dioxide.

Because ICUs are often full, use of this technique in other settings is becoming common in many hospitals, but patients should be selected carefully to assure safety. We expect expanded use of NIV as new applications are explored and caregivers develop skill in the technique, but caution should be exercised to restrict use to appropriate applications. ■

Stefano Nava, MD, is a world-renowned expert in noninvasive ventilation from Bologna, Italy, and was the Egan lecturer at AARC Congress 2012.

RC Companies Show Their Best

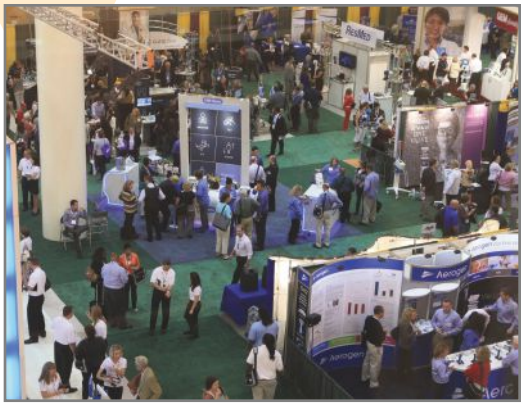
58th International Respiratory Convention & Exhibition • New Orleans, LA

People come to the AARC Congress for the educational

presentations; but in a profession that relies on technological advancements to provide the best care to patients, that's only half of the equation.

The Exhibit Hall is just as important, and the 2012 exhibition had all the respiratory care companies in the industry, who were ready, willing, and able to show off their latest products and services. Some even offered added value by hosting breakfast symposiums for attendees, while others carved out time in their booths to educate Congress attendees one-on-one as the need arose.

Since the AARC meeting is a "buying show" as well, attendees also had the chance to take advantage of special Congress discounts and make purchases right on the Exhibit Hall floor, often at prices well below those offered through group purchasing organizations. In many cases, they saved enough on their purchases to cover the cost of their attendance and still go home with money in their organization's pocket. ■



Call For Abstracts

For the 2013 Open Forum in Anaheim, CA

Submissions due by June 1, 2013

All abstracts *MUST* be submitted online at

rcjournal.com

Visit the Journal website today for all the information on the easy way to submit your ideas.

Visit rcjournal.com for more details!

AARC Congress 2012

58th International Respiratory Convention & Exhibition • New Orleans, LA

Attendees Enjoy the "Lagniappe" (Something Extra)

The AARC Congress is always focused first and foremost on providing cutting-edge educational presentations and a state-of-the-art Exhibit Hall for attendees. But no professional gathering would be complete without some extra attractions, and the AARC delivered the goods in New Orleans.

Reaching Out to the New Orleans Community

The AARC Congress brings experts in respiratory care to its host city, and every year the Association takes advantage of all that talent to host a special program for members of the community. The New Orleans event took place on the Friday before the meeting and was held at the St. Thomas Community Wellness Center, a local facility where community members can go to receive direct patient care.

AARC members visited with New Orleans residents who came by to learn more about respiratory conditions like asthma and COPD and how to minimize the symptoms they cause. They also provided instruction on the proper use of aerosol medication delivery devices to those who have already been diagnosed and are using these drugs. Plus they performed COPD screening and spirometry.

RTs provided COPD screenings and spirometry testing to New Orleans residents.

Roche Fun Run and Walk

AARC Veterans Day ceremony

Photos by Lennie Sirmopoulos, Convention Photography, Tustin, CA

University of Maryland Medical Center of Baltimore, MD, won the ARCF Vent 5K.

Friendly Competition Ends in Big Prize

The American Respiratory Care Foundation has been hosting an annual competition for respiratory therapists called the Vent 5K for several years now. The premise is simple: Gather some teams together, map out a track at a hospital or local park, dress ventilators up in creative costumes, and then push them around the track. It's a great way to attract media attention for the profession while building camaraderie among local RTs at the same time.

The event culminates each year with the selection of a grand prize winner at the AARC Congress. This year top honors went to the team from University of Maryland Medical Center in Baltimore, MD, that took home a brand new ventilator donated by Breathe Technologies, Inc.

If winning a major piece of respiratory equipment sounds like something you and your colleagues would like to do too, go to www.ARCFoundation.org/support and click on "Vent 5K" to find out how to host your own Vent 5K in 2013. Thanks to our partnership with FirstGiving.com, you can register your event and collect donations for your teams right online.

The AARC booth at the Congress featured new products.

Did You Miss It?

Attendees at AARC Congress 2012 went home with a big perk: For the first time, all registrants received instructions on accessing online audio recordings of most of the presentations at no extra cost. The sessions became available a few weeks after the meeting concluded.

If you weren't able to attend AARC Congress 2012 but would still like to take advantage of some of the great lectures that were presented in New Orleans, you can purchase a package of video recordings in the AARC Online Store (www.aarc.org/store). Recordings are available to AARC members for $200. Nonmembers may purchase the package for $295, which includes a one-year digital AARC membership.

AARC Booth Served as Common Ground

The AARC booth in the center of the Exhibit Hall was a great place for attendees to stop, relax, and chat with AARC staff about ways to maximize their membership. Booth representatives provided lots of information on getting the most out of what the AARC offers and also brought members up to speed on new products available in the AARC Store, including the recent release of the updated "AARC Uniform Reporting Manual for Respiratory Care," now available in its 5th edition. Printed copies of the AARC's new Patient Safety Checklists were distributed for free as well.

One area everyone was interested to learn more about was the new dues tiers and how they can save members money. Attendees also heard more about our Specialty Sections and Roundtables and how they could join; and to top it all off, everyone was invited to spin a game wheel. Prizes ranged from Specialty Section membership to a 2012 Professors Rounds series and more.

All the CRCEs You Need

The AARC International Respiratory Convention & Exhibition offered a maximum of 24.86 hours of CRCE credit, and attendees had the chance to earn extra CRCEs during pre-courses that took place the day before the meeting and breakfast symposiums hosted by vendors. It all added up to more than enough credits to maintain your license to practice.

AARC Congratulates 2013 Corporate Partners

The AARC took advantage of the Congress to congratulate its 2013 corporate partners: CareFusion, Masimo, Covidien, Monaghan, Philips Respironics, Draeger, GE Healthcare, Maquet, Tri-anim, Teleflex, Boehringer Ingelheim Pharmaceuticals Inc., and Forest Laboratories Inc.

All of these companies comprise best-in-class organizations interested in supporting the goals and work of the Association. The program provides respiratory care providers with information, insights, and innovative approaches to improve performance and advance the health of their patients.

Log on to www.aarc.org and see more photos and stories.

AARC Congress 2012

This Was Not Your Father's Sputum Bowl

The AARC has been hosting a Sputum Bowl competition at its annual meeting for more than three decades now, but 2012 brought the event squarely into the 21st century with a host of new and exciting features and activities. The first thing attendees noticed as they filed in for the Finals competition on Monday evening was a brand new virtual scoreboard with a sleek new look and design. There was a lot of excitement with the new features. "Call Your Posse" allowed contestants to seek help from designated colleagues if they had trouble answering a question.

Another one, "The Tables Are Turned: The Audience Become the Players" was during the halftime festivities. The audience could answer questions of its own through an audience response system. The top five finishers went home with some great prizes, including a $50 gift certificate to the AARC Store, a free one-year digital AARC membership, a "Jawbone" Bluetooth headset, and an iPhone/iPod/iPad docking station. Louis M. Kaufman, RRT-NPS, AE-C, FAARC, took home the grand prize — a Kindle Fire. But the main event remained the national and student competitions, as teams that had been preparing for this day all year long squared off in heated battles for the Sputum Bowl trophy. The Sputum Bowl was sponsored by Covidien.

Anaheim, CA, Here We Come!

As the 58th International Respiratory Convention & Exhibition drew to a close, attendees set their sights ahead to Nov. 16–19, when we'll once again host the world's premier respiratory care meeting in Anaheim, CA. Known for its great Pacific coast beaches, wonderful restaurants, thrilling theme parks, and the glitz and glamour of nearby Los Angeles and Hollywood, Anaheim promises to deliver on everything you've ever heard about sunny Southern California.

"Anaheim is always a great place to hold our meeting; and with all the changes expected to come our way over the next year due to health care reform and other issues, it will never be more important to attend," says AARC Program Committee Chair Cheryl Hoerr, MBA, RRT, FAARC. "The Congress is sure to deliver the hands-on information managers, educators, and clinicians alike need to maximize their roles in their organizations."

She says the Program Committee is looking forward to seeing everyone in Anaheim in 2013. "We officially invite all of you to join us in Southern California next November," says the chair. So flip over to November 2013 in your day planner today and block out the 16th–19th for AARC Congress 2013!

Anaheim, site of AARC Congress 2013

The Egan Lecture drew a big crowd.

Everyone had fun at the Draeger Opening Reception.

First place, nationals: North Carolina
Second place, nationals: Louisiana
Third place, nationals: California
Fourth place, nationals: Pennsylvania

First place, student: California
Second place, student: Michigan
Third place, student: Colorado
Fourth place, student: Louisiana

North Carolina put up a good fight to win the national Sputum Bowl title.

Student Sputum Bowl winners: California

Now Is the Time To Plan for Respiratory Care 2013

Nov. 16–19 seems like a long time away — but if you'd like to be on hand for AARC Congress 2013 in Anaheim, CA, it is not too early to request funding from your administration or supervisor. Many hospitals are budgeting for fall 2013 meeting attendance right now; and the sooner you submit your request, the more likely you'll get your attendance covered.

Want to boost your chances of success? Make a copy of this article on our 2012 meeting in New Orleans and include it in your written request for funding — or scan it in and attach it to your email if you're making your request the electronic way. Once your superiors read through this article and see the value that comes from attendance at an AARC Congress, they will certainly be more inclined to sign off on your trip to Anaheim next November. ■

RC Currents

IN THE NEWS

Honoring Military RTs

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

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

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

"Uniform Reporting Manual 5th Edition" Update Now Available on CD

The 5th edition of the "AARC Uniform Reporting Manual for Respiratory Care" (URM) is now available in the online AARC Store (www.aarc.org/store).

This 2012 update includes new activities, revised definitions, and statistically valid time standards for both established and emerging patient procedures developed from the data reported by 1,362 survey responses. The 301 procedures surveyed included those performed by hospital RT departments as well as those provided in other services frequently managed by respiratory therapists. These include pulmonary function, blood gas, echo/noninvasive cardiology, hyperbaric medicine, sleep laboratory procedures, and procedures commonly conducted in pulmonary rehabilitation programs.

The manual contains step-by-step instructions for developing a productivity measurement and reporting system. It also contains worksheets that automatically calculate relevant efficiency metrics from data you provide as well as useful educational appendices to help you better understand productivity measurement and develop your own statistically valid time standards.

Considered the gold standard of efficiency measurement for the respiratory care profession, the URM is used by hundreds of departments across the country to determine productivity, track the utilization of services, determine personnel requirements with changes in service demand and scope, and forecast budget requirements. ■

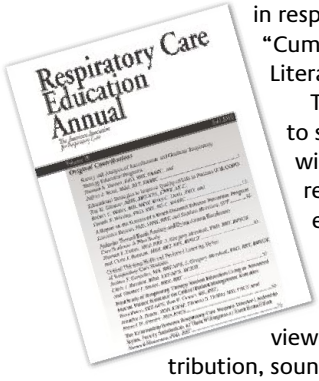
National Respiratory Care Week 2012

Read more about National Respiratory Care Week 2012 online at www.AARC.org/headlines/12/11/rc_week/.

Manchester Community College, Manchester, CT

RI Hospital/ Hasbro Children's Hospital, Providence, RI

Respiratory Care Education Annual Call for Papers



The AARC will publish Volume 22 of the "Respiratory Care Education Annual" in the fall of 2013. This refereed journal is committed to providing a forum for research and theory in respiratory care education and is listed in the "Cumulative Index to Nursing and Allied Health Literature."

The AARC Education Section invites educators to submit papers for consideration. Preference will be given to papers that emphasize original research, applied research, or evaluation of an educational method. Other topics that may be considered include interpretive reviews of literature, educational case studies, and point-of-view essays. Submissions will be reviewed based on originality, significance and contribution, soundness of scholarship (design, instrumentation, data analysis), generalizability to the education community, and overall quality of the paper. Papers should be approximately 6–10 pages in length and **must** follow the guidelines in the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals," 5th edition (1997). These may be found at www.rcjournal.com/guidelines_for_authors/preparing_the_manuscript.cfm. Abstracts should not exceed 250 words. For more information, contact Dennis Wissing, PhD, RRT, FAARC, editor, at dwissi@lsuhsc.edu or (318) 573-9788. Electronic copies of completed manuscripts should be sent to Shawna Strickland at edu@aarc.org. Deadline is Feb. 28, 2013. ■

Enter the 2013 AARC Photo Contest

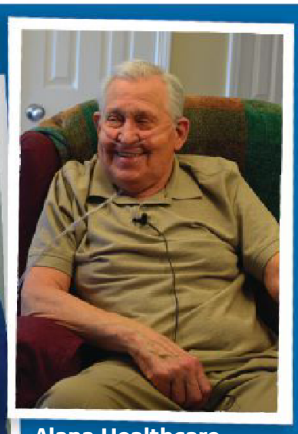
AARC Times is looking for creative members to enter our AARC Photo Contest. Winners will receive a free one-year membership renewal and have their photo entered into our Photo-of-the-Year Contest with the chance of it being chosen to appear on the March 2014 cover. For instructions and guidelines, select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

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

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

Carolinas Rehabilitation, Charlotte, NC

Pitt Community College, Greenville, NC



Alana Healthcare, Nashville, TN

ARCF Grants, Awards, and Fellowships

At Congress 2012 many of your colleagues collected valuable awards and grants for their scholarship, research, and more. Next year you could be the one up on stage — but it all starts with a review of the awards issued every year by the American Respiratory Care Foundation (www.arcfoundation.org/awards). If you think you might be eligible, consider applying. Application deadlines and requirements vary according to award category. ■

▶ Transitions

Donna Smith, BA, CRT, has received the Distinguished Service Award and Exceptional Service Award from the Wisconsin Association of Medical Equipment Services (WAMES) for her work on the WAMES respiratory committee. Smith is director of respiratory care at Home Care Medical Inc. out of Southeastern Wisconsin.

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

Members, Send Us Your Human Interest Stories

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

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

Thumbs Up…

…To ALS patient Robin Mower for turning her family's RV into an "inspiration mobile" and traveling around the country to raise awareness of the disease at charity walks and advocacy days. The vehicle is painted with messages like "Living Not Dying" and "Never Give Up." This isn't Mower's first mission to ensure more people are educated about ALS either. She did tandem skydives in 2009 and 2010 to raise awareness and funds. You can view the most recent dive on YouTube: www.youtube.com/watch?v=crISjTCf98I. ■

2.5 Hours with an RT Make a Difference

Kaiser Permanente researchers presenting at CHEST 2012 find 2.5 hours with a respiratory therapist can significantly improve CPAP compliance for patients prescribed the therapy to treat obstructive sleep apnea (OSA). The study involved a chart review on 39 OSA patients who were being monitored for CPAP compliance via a portable compliance-monitoring device. Patients saw a respiratory therapist during three sessions totaling 150 minutes. On day 30, a CPAP compliance review of data from the patients' CPAP equipment showed a 75% CPAP compliance rate. ■

Saint Paul College, Saint Paul, MN

Newark Beth Israel Medical Center, Newark, NJ

Read more about RC Week 2012 at www.AARC.org.

Post-op Intervention Improves Outcomes

Respiratory therapists are part of a multidisciplinary team at Boston University Medical Center that is implementing their new postoperative pulmonary care program for surgical patients known as "I COUGH"[SM]. The acronym stands for: incentive spirometry, coughing/deep breathing, oral care, understanding (patient and staff education), getting out of bed at least three times daily, and head of bed elevation. The program is hardwired into the hospital's computerized physician orders so it is automatically ordered on all patients.

According to a recent study presented at the 2012 American College of Surgeons Annual Clinical Conference, the intervention is improving outcomes. The investigators compared their risk-adjusted pulmonary outcomes pre- and post-iCOUGH implementation, finding the program reduced both the likelihood of pneumonia after surgery and unplanned intubations. A decline in venous thromboembolic complications was seen as well, a fact the investigators chalk up to the early mobilization part of the program.

Joining RTs on the multidisciplinary team are surgeons, surgical residents, internal medicine physicians, nurses, quality improvement and infection control experts, and physical therapists. ■

Protective Mechanical Ventilation Benefits non-ARDS Patients

A meta-analysis of the scientific evidence published in the Oct. 24/31 edition of JAMA concludes that protective mechanical ventilation with lower tidal volumes leads to less lung injury, lower mortality, fewer pulmonary infections, and a shorter hospital length of stay for patients without acute respiratory distress syndrome.

Brazilian investigators identified 20 papers involving 2,822 participants that met their criteria for inclusion in the study. Analysis of the data indicated a 67% decreased risk of lung injury development and 36% decrease in the risk of death in patients receiving ventilation with lower tidal volumes. The results of lung injury development were similar when stratified by the type of study (randomized vs. nonrandomized) and were significant only in randomized trials for pulmonary infection and only in nonrandomized trials for mortality. In the protective ventilation groups, the analysis showed a lower incidence of pulmonary infection. The average hospital length of stay was approximately seven days in the protective ventilation group versus nine days in the traditional ventilation group. ■

Request for Open Forum Abstracts for AARC Congress 2013

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

Wake Forest Baptist Medical Center, Winston-Salem, NC

New York Methodist Hospital, Brooklyn, NY

University of Missouri, Columbia, MO; Mercy Hospital-St. Louis, St. Louis, MO

Infectious Diseases Around the World

Infectious disease continues to be a problem worldwide. Here's an update on what's been happening over the past several months.

An outbreak of the Ebola virus claimed the lives of 13 people in Uganda last summer. The hemorrhagic fever struck 20 people in a region of the country near the Democratic Republic of Congo, where Ebola first emerged in 1976. Eighteen of the 20 victims were thought to be from the same family. Representatives from the World Health Organization and Centers for Disease Control and Prevention were on the ground to assist local health officials in following up on the cases.

Working with monkeys, researchers from the **Uniformed Services University of the Health Sciences have successfully tested a vaccine against Nipah virus,** a human pathogen that emerged in 1998 during a large outbreak among pigs and pig farmers in Southeast Asia. This latest advance builds upon earlier work by the scientists, who found that the same vaccine can protect cats from Nipah virus, and ferrets and horses from the closely related Hendra virus. Both viruses, which cause infections in the lungs and brain, have a high fatality rate in humans — more than 75% for Nipah and 60% for Hendra.

According to researchers from Columbia University, more than 160 seals off the New England coast, most of them infants under the age of six months, succumbed to a new strain of avian flu in 2011. **The investigators traced the deaths to the H3N8 flu virus,** which had mutated so that it was able to attack mammalian respiratory tracts. The new strain has been labeled "seal H3N8" and is currently undergoing further study to assess its possible impact on humans. The study was published in the journal *mBio*.

American filmmaker David Darg is attempting to raise awareness of the cholera epidemic in Haiti through his film, "Baseball in the Time of Cholera." The film was spurred by the cholera death of the mother of a baseball player on the country's only junior league baseball team and documents the nation's ongoing battle with the epidemic, which traveled to the island along with Nepalese troops in 2010. According to Darg, the disease made its way into the country because the United Nations did not screen its peacekeeping forces for the condition. Haitians also believe the UN contributed to the outbreak because it dumped waste from its base into the country's main river.

A recent study in *The Lancet* suggests nearly **50% of people with tuberculosis in eight countries show resistance to one or more of the second-line drugs used to treat the condition.** In the study, which was carried out in Estonia, Latvia, Peru, The Philippines, Russia, South Africa, South Korea, and Thailand, 43.7% of patients were

Community Memorial Healthcare, Marysville, KS

Mid-State Technical College, Marshfield, WI

Gundersen Lutheran, La Crosse, WI

resistant to at least one of the drugs and 6.7% were found to have extensively drug-resistant (XDR)-TB. Previous treatment with a second-line drug was a risk factor for both current resistance and XDR-TB.

Researchers working in a **Korean lab illustrated how easy it is for a swine flu virus to mutate** into a virus that could potentially impact humans in a study published in the *Proceedings of the National Academy of Sciences*. The investigators took a swine flu virus currently circulating in Korea but not causing any illness in pigs and infected ferrets with it. Two mutations quickly emerged in the ferrets that led to unusual virulence, killing the infected animals within 10 days. The mutated virus was easily transmitted to other animals as well via respiratory droplets. Since the mutations occurred in the laboratory setting, no immediate threat to humans is seen; but the researchers believe their findings show how quickly such mutations could leap from one species to another in nature.

A new virus related to the SARS virus that affected more than 8,000 people worldwide in 2002–2003 was detected in a man from Qatar last fall. The man was treated in London, and officials could find no evidence that he had passed the virus on to anyone else. However, his virus was a 99.5% match to a virus that killed a Saudi Arabian man earlier in the year. As of press time, a third case of the virus had been identified in another man from Saudi Arabia. That man recovered from the illness. ■

▶ Strange But True…

Now that's smart! Computer scientists from the University of Washington are developing a smartphone app that would turn the device into a portable spirometer. First, they created an algorithm to replace the tube and turbine of a traditional spirometer with a person's trachea and vocal tract. Then they used the microphone on an iPhone to check the sound wave frequencies from a person's breath. In tests involving 52 mostly healthy subjects, the SpiroSmart app had a 5.1% error rate when compared to a traditional spirometer, which the developers note is well within the guidelines of 5–7% set by the American Thoracic Society.

Whey better milk: New Zealand investigators have genetically engineered a cow to produce milk that does not contain the β-lactoglobulin protein found in whey. The protein is known to contribute to allergic reactions of the skin and digestive and respiratory tracts, mainly in infants.

Man's best friend: A former shelter dog named Zander was so upset when his master had to go into the hospital that he ran away from home and tracked the man down to the facility miles away. A hospital employee found him on the street outside the building where his master was receiving care.

Killer molecule: Scientists from Washington University School of Medicine in St. Louis have discovered that a molecule involved in asthma and allergies can make mice resistant to skin cancer. At the chronically low levels seen in people with asthma and allergies, thymic stromal lymphopoietin (TSLP) triggers skin rashes and overproduction of mucus. But when mice were exposed to high levels of a drug known to cause the skin to produce TSLP, the molecule appeared to train the immune system to recognize skin cancer cells and target them for elimination. ■

Greene County Medical Center, Jefferson, IA

Cole Memorial Hospital, Coudersport, PA

Marketplace

Featuring information on products and equipment from manufacturers

Portable Suction Unit

For 25 years AG Industries has been manufacturing and distributing suction filters, tubing and accessories. Those years of experience and superior products have given AG the insight into what providers need from their suction systems. Now AG is introducing an innovative new Portable Suction Unit that is lightweight, quiet, easy to use, and perfect for home care. Features include an integrated 800 cc canister holder, easy-to-read pressure gauge, secure charging connection, and remote control. All these advanced elements with an ergonomic, easy-to-carry handle means you can take superior suction with you anywhere.
www.agindustries.com

Full-face Mask

According to Philips Respironics, their new Amara full-face mask is the smallest and lightest among leading traditional full-face masks and fits 95% of patients' faces. With 60% fewer parts than the leading full-face mask, Amara is also easy to assemble, clean, and maintain. Features include a fine-glide forehead adjuster, inlaid headgear tabs, and a quiet micro exhalation port that redirects air away from a bed partner.
www.philips.com

Airway Suction Device

DeVilbiss Healthcare's Vacu-Aide QSU Quiet Suction Unit offers >50% reduction in sound, making it the quietest high flow/high suction portable unit on the market. With a multitude of power options, including car/RV receptacle power and 60-minute battery, it can be used virtually anywhere under some of the most extreme circumstances. The Vacu-Aide QSU's adjustable vacuum range (50–550 mm Hg) meets AARC guidelines for neonatal, infant, child, and adult home care suctioning.
www.DeVilbissHealthcare.com

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

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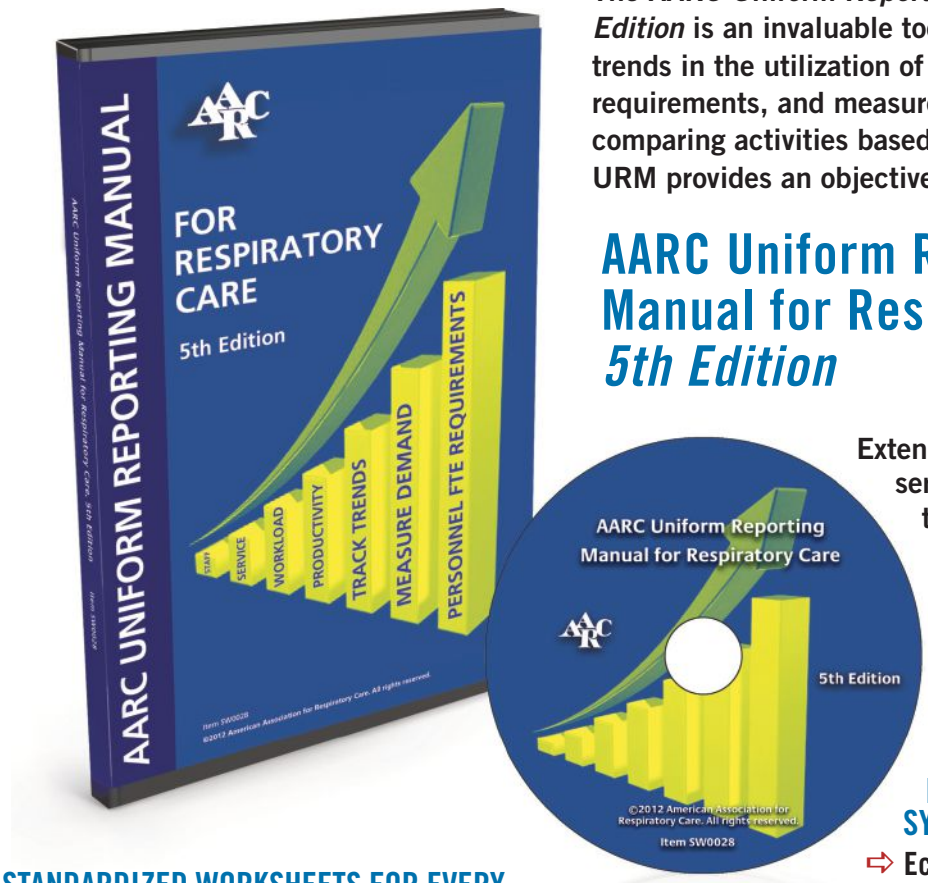

The *AARC Uniform Reporting Manual for Respiratory Care, 5th Edition* is an invaluable tool to determine productivity, track trends in the utilization of services, establish personnel FTE requirements, and measure demand and intensity of service. By comparing activities based on relative workload intensity,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

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Industry Watch

ModusFive introduces asthma education software

ModusFive has launched a new multimedia software program called "Asthma: A Patient Education Multimedia Course." Through rich graphics, interactive content, and high-definition videos and animations, the program offers over three hours of self-guided instruction divided into eight lessons that are available online or via CD-ROM. Lessons focus on symptoms, triggers, diagnosing asthma, asthma in special situations (pregnancy, infant, and adult), asthma treatment, patient management, equipment cleaning, asthma in schools, and more. The software was developed with the help of board-certified pediatricians and asthma educators from a Palo Alto-based hospital group.

"Back to Sleep" now "Safe to Sleep"

According to the National Institutes of Health, the national campaign to reduce the risk of sudden infant death syndrome has entered a new phase and will now encompass all sleep-related sudden unexpected infant deaths. As a result, the campaign is undergoing a name change from the Back to Sleep Campaign to the Safe to Sleep Campaign. In addition to recommending that infants be placed on their backs to sleep, Safe to Sleep also emphasizes breastfeeding infants when possible and eliminating risks to infant health such as overheating, exposure to tobacco smoke, and maternal use of alcohol and illicit drugs.

InDevR releases influenza system

InDevR has released the ViroPrep™ Allantoic Influenza (AI) system for determining the concentration of influenza grown in chicken eggs. ViroPrep AI is a two-step sample cleanup kit that can prepare samples taken directly from eggs for downstream analysis on the ViroCyt® 2100 Virus Counter®, providing vital information. Capto™ Core 700, a chromatography medium from GE Healthcare optimized for efficient purification of influenza viruses, is a key component of ViroPrep AI. "ViroPrep and ViroCyt address an essential requirement within the vaccine community by making same-day elucidation of total particle count possible," InDevR Vice President of Commercial Operations Dr. Michael Artinger was quoted as saying.

Drugmaker Sarepta Therapeutics receives FDA Fast Track

The FDA has granted Fast Track status for the development of Sarepta Therapeutics' lead infectious disease drug candidates, AVI-7288 and AVI-7537, for the treatment of Marburg virus and Ebola virus, respectively. Sarepta has been developing the platform-based therapeutics under a U.S. Department of Defense contract managed by the Joint Project Manager Transformational Medical Technologies Project Management Office, a component of the Joint Program Executive Office for Chemical and Biological Defense.

Teleflex signs agreement with Premiere

Teleflex Inc. has been awarded a new group purchasing agreement to supply its respiratory products within the Premiere health care alliance. The three-year agreement went into effect on Nov. 1 and will provide access to the complete Teleflex line of products at exclusive member rates to Premier's alliance of 2,600 hospitals, according to Cary Vance, president of the Anesthesia & Respiratory Division of Teleflex. Their products include aerosol and medication delivery devices, oxygen therapy, and ventilation management.

MedGraphics becomes MGC Diagnostics

MedGraphics is now MGC Diagnostics Corporation. A new corporate website, www.MGCDiagnostics.com, and logo have been launched as well. "Historically, we have operated with three separate identities — Angeion® for the investment community, New Leaf® in the fitness business, and MedGraphics® in the cardio-respiratory business," Gregg O. Lehman, president and CEO of MGC Diagnostics, was quoted as saying. "Of these identities, MedGraphics commanded the strongest identity and value position. Thus, maintaining Med-

Graphics' heritage, remaining loyal to our customers, and leveraging our long-standing brand equity were critical success elements to our branding strategy."

Menssana Research reports good results for TB breath test

Menssana Research's rapid point-of-care breath test accurately detects active pulmonary tuberculosis, according to a report published in the journal *Tuberculosis*. Development of the breath test was funded by the National Institutes of Health and the U.S. Air Force. The study was carried out by researchers at four medical centers in India, the Philippines, and England, who used Menssana's BreathLink system to collect, concentrate, and analyze breath from 279 patients. "The breath test was 84% accurate in detecting patients with active pulmonary tuberculosis," says Dr. Michael Phillips, developer of the breath test and CEO of Menssana Research Inc.

Healthline Networks launches new app

Healthline Networks has launched Healthline BodyMaps for the iPad, a 3-D interactive visual learning tool to help health care providers and consumers alike understand the human body. Created by Healthline and GE Healthyimagination in partnership with Visible Productions, the app features Retina Display-ready anatomy models of both sexes, including anatomical structures for common specialties such as orthopedics, cardiology, and neurology. The application is available in the iTunes app store.

GPM introduces Meaningful Use EHR for LTC

Geriatric Practice Management (GPM) has introduced the first ONC-ATCB Meaningful Use certified electronic health record (EHR) designed exclusively for physicians working in the long-term care (LTC) environment. Called gEHRiMed™, the EHR was created by LTC physicians and developers to meet the unique patient management, charting, reporting, and billing needs of providers practicing medicine in long-term care facilities. It is the first joint venture of GPM, a partnership between Extended Care Physicians of Asheville, NC, and America's largest private LTC physician practice, Park Avenue Medical Associates of White Plains, NY. Both medical groups support a large number of providers working in multiple long-term care facilities, each of which can be hundreds of miles from the providers' administrative offices.

DoMoreWithOxygen.com offers new caregiver guide

Caregivers with loved ones who have COPD can now find help on www.DoMoreWithOxygen.com. The website's new guide, "Living with COPD: A Caregiver's Guide," offers tips on what to look for during a respiratory episode, medication and COPD, the importance of compliance, nutrition and COPD, exercise and COPD, and other ways to help loved ones. Do More With Oxygen is an online community where those who have been diagnosed with COPD, or those who care for someone with COPD, can go for educational and practical information on living with the disease.

FAU, PointClickCare form joint initiative

Florida Atlantic University (FAU) and PointClickCare, the LTC industry's most widely used electronic health record (EHR) platform, are working together to develop a fully integrated, electronic version of PointClickCare's INTERACT quality improvement program (eINTERACT™). INTERACT stands for "Interventions To Reduce Unnecessary Hospitalizations of Nursing Home Residents" and is a quality improvement program designed to facilitate the early identification, evaluation, documentation, and communication of changes in the status of residents in skilled nursing facilities. It also provides the necessary tools to manage conditions before they become serious enough to necessitate a hospital transfer. The primary goal of the initiative is to bring the significant quality improvements of the INTERACT program to EHR software platforms through an industry-standard certification program.

Companies move ahead with oncolytic cancer treatment

CZ BioMed Corp. has entered into a worldwide licensing agreement with South Texas Technology Management on behalf of the University of Texas Health Science Center San Antonio and the University of Texas System Board of Regents for exclusive use of a U.S. patent covering the methods and compositions for treatment of cancer using oncolytic respiratory syncytial virus activity. This agreement, in conjunction with the United States and worldwide patents for which CZ BioMed has already applied, is expected to add strength to the company's existing patent portfolio of innovative oncolytic cancer treatments.

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

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Yelland, Sherman, Kelowna, BC, Canada

Calendar of Events

AARC & State Society Programs

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

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

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

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

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

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Submissions for the next available issue are due January 19.

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

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[1] EMMA Users Manual.