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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.
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• 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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Pediatric Disease Management: An Evolving Specialty for the Respiratory Therapist

by Brian K. Walsh, MBA, RRT-NPS, FAARC

Disease management is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are a significant part of the plan of care. Effective disease management teaches patients and caregivers to take responsibility for understanding how to take care of themselves or their child to avoid worsening their condition. Respiratory therapists are a natural fit for this role and have begun to take the lead as respiratory disease managers.

Published evidence continues to demonstrate the value of the respiratory therapist in disease management.[1-4] Traditionally, RTs were intimately involved with the disease management of two primary diseases, cystic fibrosis (CF) and asthma. In these two patient populations, pediatric RT disease managers generally offer coordination of care during transition (hospital to home, clinic to home); assist with removing barriers to proper self-management; help with the coordination of disease-specific practice updates; provide continuity of care; assist with the collection of demographic, quality, and outcomes data; and, last but not least, offer patient, family, and staff education. Because of the hard work of a few and the ability to transverse multiple specialties to ensure the coordination of care, the respiratory therapy department is being turned to as the logical choice to serve as the primary provider of respiratory disease management.

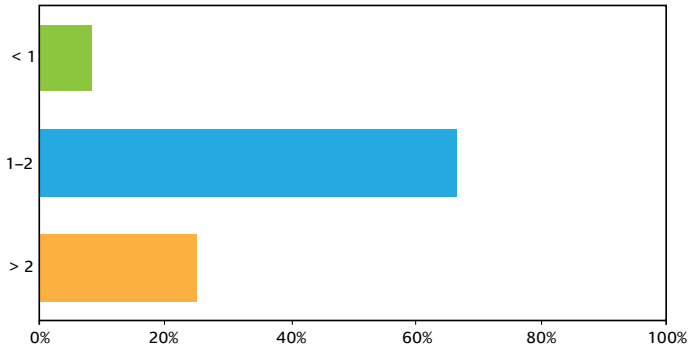
Over the past decade, many pediatric hospitals have begun to offer this new model of care for chronically ill patients. This is primarily due to the success in disease management seen in adult hospitals.[5–12] The primary goal of pediatric disease management is to improve care quality while reducing costs in caring for infants and children with chronic diseases. It is accomplished through a combination of enhanced screening, monitoring, and education; the coordination of care among primary care physicians such as pediatricians and specialists (pulmonologists, intensivists, or surgeons); environmental settings in which there may be different support teams (nurses, RTs, medical assistants) and resources; and the use of best practices. Disease management seeks to identify chronic conditions more efficiently, treat them more effectively, and slow the progression or burden of these diseases. The presumption is that better care today will lead to better health outcomes through reduced pulmonary exacerbations, rate of decline in lung function, improved quality of life, and less expensive care tomorrow.

In addition, children with complex chronic conditions represent a growing segment of the population.[13] In fact, a recent study demonstrated that the prevalence of discharges of children on long-term mechanical ventilation grew from an initial estimate of 6–14 per 100,000 children to as high as 173.3 per 100,000 (non-newborn).[14] Advances in medical therapies and expansion of the supportive care options have contributed to the survival of this subpopulation of children with highly complex medical conditions.[15] Increasing the levels of support from advanced technologies, however, is not without burden or risk. Children with special needs have an increased risk of unscheduled hospital admission.[16] In fact, children with complex chronic conditions with technology dependence were at significantly higher risk of reported medical errors during hospitalization.[17] For children whose illness requires chronic use of mechanical ventilators, the struggle to provide safe, quality care in the least restrictive environment challenges caregivers from all disciplines.[18,19] This creates an exciting opportunity for pediatric respiratory therapy departments to intervene in this growing, yet exceedingly fragile, patient population.

about the author...

Brian K. Walsh, MBA, RRT-NPS, FAARC, is clinical research coordinator at Boston Children's Hospital, Department of Anesthesia, Division of Critical Care, as well as a research associate at Harvard Medical School in Boston, MA.

Figure 1. The number of FTEs invested in respiratory disease management by departments that offer this service



Children's Hospital Association Respiratory Disease Management Survey

In a recent survey of 41 Children's Hospital Association (CHA) respiratory care departments (personal communication with Courtney Ashe) that was conducted by the author with a 54% (22) response rate, over 63% of respondents stated that their hospital had respiratory disease management positions with a slight majority of them being RTs (53%). Fifty-seven percent of the respondents stated that those disease management positions were within the respiratory therapy department, with the majority of them occupying ≥1 FTE (92%). Few respiratory therapy departments (8%) reported using <1 FTE (see Figure 1). This may speak to the fact that continuity of care is extremely important in this role and that most disease managers are full-time employees working five days a week.

Populations focused on by pediatric disease managers

Not surprisingly, the population in which the disease manager assisted most was children diagnosed with asthma (71%), those requiring long-term mechanical ventilation (43%), and patients with the diagnosis of CF (36%) (see Figure 2). It's hard to know if this is a change in practice or just a change in focus to include technology-dependent children who until 5–10 years ago never left the ICU; or perhaps it is the improvement in CF care such as earlier diagnosis, enhanced nutrition, and the advent of new therapies.

Turning toward the future

Based on the CHA survey results, department directors do not envision that they will be hiring more RT disease managers, as 52% responded in the negative. This may be a reflection of the current health care economy or the development of disease management programs outside of the traditionally acute care focused respiratory therapy department span of control.

However, if they were to be given permission to hire a disease manager, the majority would continue to invest in patients with asthma (47%), with the chronically ventilated coming in second at 21% (see Figure 3). This finding is corroborated by the fact that one in 12 people (about 25 million) has asthma, and the numbers are increasing yearly. It is estimated that 12 million (one in two people) with asthma had an asthma attack in 2008, and many asthma attacks could have been prevented with proper education and management. Last but not least, asthma cost the United States about $56 billion in medical fees, lost school and workdays, and early deaths in 2007.[20]

In the true sense of proper disease management, children with asthma remain a troublesome population in which this model of care may have the most influence. The chronically ventilated popula-

Figure 2. The diseases focused on by pediatric respiratory disease managers

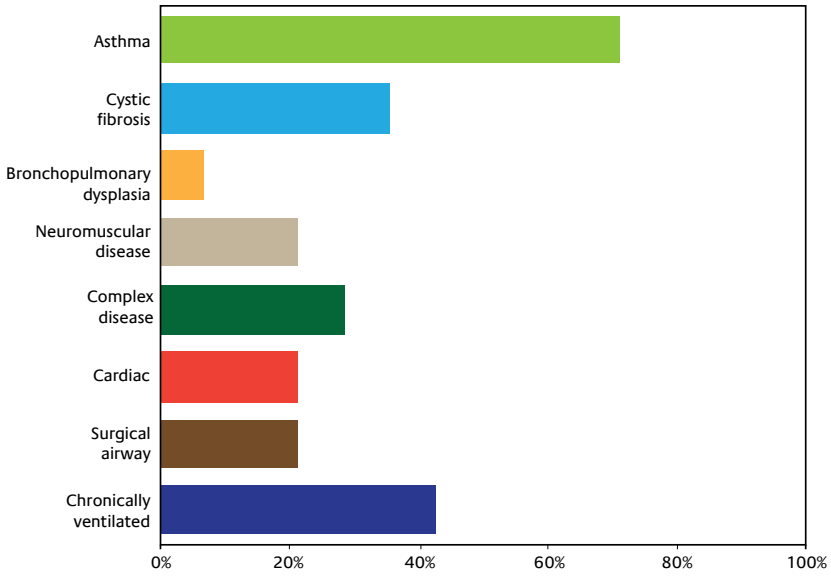
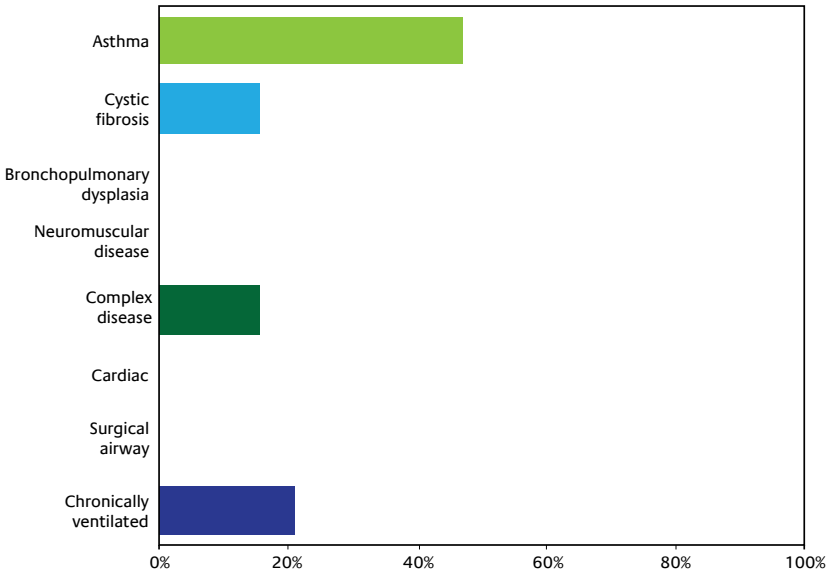


Figure 3. The patient populations that managers would have their disease managers focus on if they could hire additional personnel

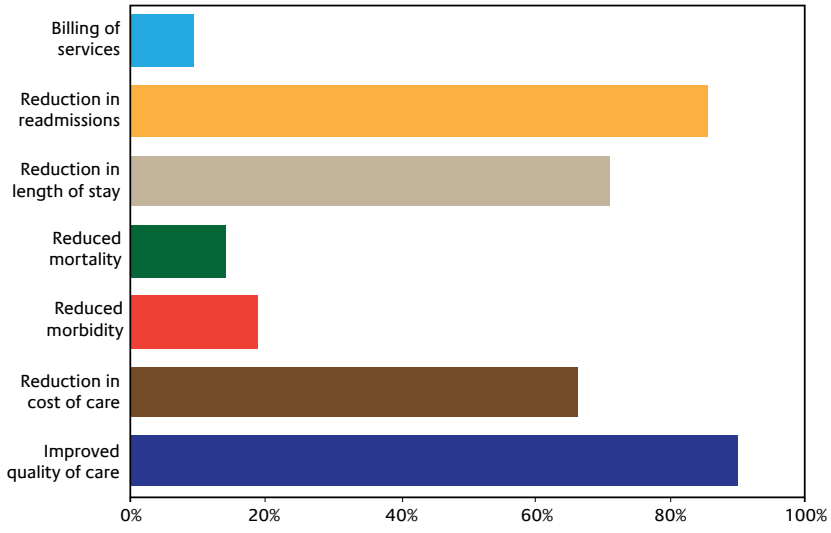


tion is also growing at a rapid pace and occupying critically needed inpatient beds.

Justification of additional personal expense

When starting a new model of care or offering additional services, the department director or administrator must justify the additional perceived expense. This care may be considered a local or departmental expense when associating labor cost without regard to savings possibly obtained with a reduction in the use of emergency department services, readmissions, or both. In the CHA survey, the majority (90%) justified the additional expense by the reward of "improved quality of care" — followed secondly by a "reduction in readmissions" (86%). Following closely behind were "reduction in length of stay" and "reduction in inappropriate therapy or cost of care." Interestingly, very few would justify the additional expense by "billing of services" (see Figure 4).

Figure 4. How department directors/managers justify the additional expense of a disease manager



Today brings an even greater opportunity for respiratory therapy departments to explore a disease management program or re-evaluate the one they employ. The need is even greater as our chronic respiratory disease patient population grows in number and complexity. Respiratory therapy departments are in a unique position to partner with our growing medical and surgical subspecialty world to ensure that these complex patients obtain the care they deserve and need without falling through the cracks. Respiratory therapists have the knowledge of disease and the health care system to be able to easily partner with the patient and family to ensure proper navigation and improved outcomes. ■

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Unique Immunization Needs of the Geriatric Population

by Crystal Dunlevy, EdD, RRT

It's not news that the elderly population is expected to increase over the next few decades. There are currently 41.4 million U.S. residents over the age of 65.[1] The sheer number of aging baby boomers, along with improved disease management, medical technology, and pharmaceuticals, will only add to that figure. By 2030, older adults will account for approximately 20% of the U.S. population.[2] However, are they aging well? Yes, and no.

Vaccination goals fall short

The majority of people over age 65 are noninstitutionalized (95%), report their health as good or excellent (75%), and do not smoke (90%). However, less than 60% have ever had a pneumococcal vaccine, and 34% have not had an influenza vaccine in the past 12 months.[1]

According to the National Report Card on Healthy Aging, the United States has met Healthy People 2020 goals for physical activity, obesity, smoking, taking medication for hypertension, mammograms, and colorectal cancer screenings. This is based on Behavioral Risk Factor Surveillance System data. However, no state has met the 2020 target for flu or pneumococcal vaccines.[2] Clinical preventive services and immunizations recommended for older adults can be found on the Centers for Disease Control and Prevention's (CDC) Healthy Aging Program website at www.cdc.gov/aging.

There are also significant ethnic disparities among the recipients of vaccinations — a 15% difference between blacks and whites and a 10% difference between Hispanics and whites. Older adults, low-income individuals, other ethnic minorities, and people who live in remote areas are less likely to receive immunizations than the overall population.[3]

about the author...

Crystal Dunlevy, EdD, RRT, is a clinical associate professor at The Ohio State University in Columbus, OH.

Vaccines are an important component of preventive health for older adults. As people age, a natural reduction in immunity puts them at increased risk for certain infections, making it even more important to keep up to date on vaccinations. Even though an individual may have been vaccinated against a disease as a child, some vaccines require boosters. Adults can track the vaccines they need through an online CDC quiz.[4]

Specific vaccines

It's important to be aware of current immunization recommendations for patients who are 65 and older. The influenza vaccine is given annually. The vaccine for pneumococcal pneumonia is given once to patients older than 65; patients who received this vaccine before the age of 65 should receive a one-time revaccination after five years have elapsed since the initial vaccination. The shingles (herpes zoster) vaccine is recommended for individuals aged 60 or older.[5]

A recent study compared three trivalent influenza vaccines in subjects aged 65 and older; intramuscular (IM) standard-dose vaccine, investigational intradermal (ID) vaccine, and high-dose IM vaccines were evaluated. The authors reported that the ID and high-dose flu vaccines were more immunogenic than the standard-dose vaccine, and the high-dose vaccine was more immunogenic than the ID vaccine.[6] This research may lead to new, improved means of delivering the standard-dose IM vaccine for influenza.

Why they don't get vaccinated

According to a 2009 AARP survey of 803 older adults, the most common reasons given for not receiving vaccines were cost, uncertainty about what health insurance

would cover, lack of awareness about recommended vaccines for their age group, and lack of importance to them. The report speculated that older adults may not be aware that the cost of most preventive services is covered by Medicare; in addition, primary care physicians and other health care providers may be exacerbating the problem by not taking the time to recommend routine immunizations.[7]

The cost barrier has been addressed by the Patient Protection and Affordable Care Act (PPACA), which expands Medicare coverage for preventive services recommended by the U.S. Preventive Services Task Force and eliminates out-of-pocket costs for most clinical services provided under Medicare. The three vaccines covered by the PPACA include influenza, pneumococcal, and hepatitis B.[8]

The RT's role

So, what are respiratory therapists to do? The easiest course of action is to become familiar with age-based vaccination recommendations and recommend the influenza and pneumococcal vaccines to all elderly patients. Because older patients and patients with chronic diseases and/or comorbidities are at greater risk for morbidity and mortality if they contract the flu or pneumonia, we really need to stress the importance of getting vaccinated! Eighty-five percent of deaths and 63% of hospitalizations attributed to influenza occur in patients 65 and older.[9] Flu vaccination of adults 65–79 has been proven to significantly reduce morbidity and mortality.[9] Similarly, vaccination against *pneumococcus* in adults 65 and older is associated with decreased risk of respiratory failure, decreased mortality, and decreased length of stay among patients hospitalized with community-acquired pneumonia.[10]

It only takes a few minutes during a scheduled interaction to ask whether or not these patients are up to date on the recommended vaccinations and to remind them about the importance of vaccination to their overall health. RTs are important stakeholders in the immunization process and should be involved at every stage of developing workplace immunization policies, from assessment and planning to evaluation.

Reaching out

More active ways for RTs to get involved center around providing immunizations as a part of community outreach, which depends on your state licensure scope of practice. For example, in Ohio the state license states that RTs may administer the influenza vaccination.

Sickness Prevention Achieved through Regional Collaboration (SPARC) is a non-profit agency that has partnered with the CDC to develop a model for increasing preventive services in community settings. They make immunizations available in places convenient to residents' homes, worksites, churches, beauty salons, barber shops, public schools, and community centers. SPARC has doubled the rate of pneumococcal vaccination by offering the vaccine at every influenza vaccine clinic.[11]

Another public health initiative directed by SPARC is Vote and Vax, which provides flu shots at or near polling places on Election Day. Because Election Day is early in the flu season and two-thirds of voters are over the age of 50, participating in Vote and Vax seems like an obvious choice for RT involvement. In 2008, over 21,000 people were vaccinated against influenza at 331 Vote and Vax sites in 42 states and Washington, DC; 62% of these individuals were 50 and older. It gets better too. Sixty percent of black and 65% of Hispanic recipients reported that they were not regularly vaccinated, compared to 42% of white recipients, suggesting that these clinics are doing a good job of reaching underserved populations and chipping away at the disparities issue.[12]

RTs have an obligation to both inform their elderly patients about the importance of immunization and provide the service if they are licensed immunizers. ■

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Ventilation for Life

Practical Guidelines for Lung Protective Ventilation

by Richard H. Kallet, MS, RRT, FAARC

Acute respiratory distress syndrome (ARDS) is an inflammatory process with a variety of pathogenic triggers; the most common are aspiration, pneumonia, sepsis, and trauma. There is now convincing evidence that mechanical ventilation potentiates lung injury in patients with both normal lungs and ARDS, leading to increased morbidity and mortality. Ventilator-induced lung injury (VILI), including hyperoxic acute lung injury are the terms used to describe these complications arising from mechanical ventilation.[1,2]

Ventilator-induced lung injury

VILI is caused by a variety of mechanisms, including stretch-related injury (volutrauma) from excessive tidal volume (V_T) and sheer injury (atelectrauma) from inadequate levels of positive end-expiratory pressure (PEEP). When lung tissue is repetitively stretched beyond its normal length, abnormal tension develops in the alveolar cell membrane, causing small ruptures. This triggers the release of proinflammatory mediators that enter the pulmonary and systemic circulation.[1] Sheer stress occurs when abnormal tension develops within the common walls of alveoli of different volumes. Both atelectatic and poorly inflated alveoli require higher inflation pressures and inflate unevenly. The repetitive stress developing within the adjoining walls of neighboring healthy alveoli also causes cell membrane damage.[3] Hyperoxic acute lung injury is a significant clinical concern when the fraction of inspired oxygen (FiO_2) ≥ 0.8 is sustained for several days[2] and may be compounded by excessive Vt and Pplat.[3] The pathogenesis of hyperoxic lung injury is indistinguishable from ARDS;[2] thus it should be included in any discussion of VILI. Ultimately, VILI disseminates inflammation within the lungs and also to other organs.[4] The end result may be multi-organ system dysfunction and failure. Only about 10% of ARDS-associated mortality results from intractable hypoxemia. Instead, the vast majority of patients who succumb to ARDS die from progressive multi-organ system failure.[5]

about the author...

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Practical steps for implementing lung-protective ventilation

The foundation of lung-protective ventilation (LPV) is a physiologic V_T of 6 mL/kg predicted body weight and a plateau pressure (Pplat) ≤ 30 cm H_2O.[6] Yet, tidal hyperinflation can occur in severe ARDS despite a V_T of 6 mL/kg, so that an ideal target for Pplat may be closer to 25 cm H_2O.[7] This discovery underscores the importance of titrating V_T down to 5 or 4 mL/kg to minimize Pplat. However, when patient-ventilator asynchrony is severe, the V_T can be increased modestly (7 or 8 mL/kg). This compromise is often necessary (particularly during the recovery phase), when adjustments in sedation or use of paralytics are not possible.

The predicted body weight formulas for men and women are as follows: male: 50 + 2.3 (height in inches – 60); female: 45.5 + 2.3 (height in inches – 60).[6] When a tape measure is not readily available, a 6 mL/kg V_T is approximately 400 and 300 mL respectively for an average sized male (5'7") and female (5'2"). Also, 50–70 mL can be added or subtracted to estimate a 1 mL/kg change in V_T.

The Pplat goal of ≤ 30 cm H_2O assumes normal chest wall compliance. However, many patients have decreased chest wall compliance from abdominal surgery, obesity, burns, trauma, or sepsis.[8] These patients may require high levels of PEEP to prevent compression atelectasis.

In consequence, a Pplat of 35–40 cm H_2O may be unavoidable. Under these circumstances, V_T should be titrated to achieve reasonable gas exchange at the lowest Pplat possible, with tidal pressure excursions (Pplat-PEEP) ≤ 15 cm H_2O. Alternatively, PEEP can be titrated to balance positive esophageal pressure, which likely reflects the compressive effects of a stiff chest wall as well as that of the overlying mediastinum.[9]

Pressure-control modes can be used for LPV but must be done with heightened vigilance. During patient-triggered breaths, V_T can be difficult or impossible to control. Negative pleural pressure contributes to tidal ventilation, and stretch-related injury is caused by *transpulmonary* stress (alveolar-pleural pressure).[10] In patients with ARDS, very negative tidal changes in pleural pressures are common, so that the corresponding loss of V_T control likely increases the risk of VILI.[11] Moreover, reducing driving pressure in an attempt to control V_T reduces the ventilator peak flow rate.[11] Paradoxically, this can increase patient work of breathing and may not offer any advantage over volume ventilation with a generous flow rate (e.g., 60–75 L/m).

Accessing initial minute ventilation (V_{Min}) demand is an important but often overlooked step in initiating LPV. In the ARDSNet trials, an average V_{Min} of 12–13 L/m achieved a normal range pH and $PaCO_2$.[6,12] If initial blood gas data is available, the corrected V_{Min} formula can estimate a safe level of V_{Min} when implementing LPV (V_{Min} target = V_{Min} measured x [$PaCO_2$ measured / 40]).[13] This formula can be adjusted for different $PaCO_2$ targets.

Once V_{Min} and V_T targets are established, the set respiratory frequency is calculated by dividing the target V_{Min} by the target V_T (e.g., 12 L/m ÷ 0.4L = 30). This is particularly useful in preventing problems with air trapping and alerting the clinician when permissive hypercapnia is needed. Using an inspiratory time of 0.85s is helpful because it delineates an I:E ratio of 1:1 when the ARDSNet maximum frequency of 35 is used. Avoid setting the inspiratory time < 0.7s, as this tends to magnify the effects of airway dead space due to abnormally brief gas-mixing time. In general, when inspiratory time is set between 0.7 to 0.85s, intrinsic PEEP is minimal (1–2 cm H_2O).[14]

When permissive hypercapnia is indicated, it should be induced slowly. The $PaCO_2$ should increase no more than 10 mm Hg/h, which often translates into a V_{Min} reduction of 0.7–1 L/h.[15] When the initial pH is ≤ 7.20 and V_T must be reduced, the addition of a buffer should be considered. In this regard, THAM (tris-hydroxymethyl aminomethane) is an ideal buffer for LPV.[15] However, for most patients, permissive hypercapnia does not require a pH < 7.25 or a $PaCO_2$ > 60 mm Hg.[15] Also, it is imperative to minimize dead space in the mechanical ventilator circuit when using LPV. When providing humidification to patients with low tidal volumes, heat-moisture exchangers are not recommended because they contribute additional dead space, which can increase the ventilation requirement and $PaCO_2$.[16]

Establishing an appropriate PEEP level for ARDS remains controversial. However, a recent meta-analysis of large clinical trials suggests that only patients with severe or moderate ARDS (PaO_2/FiO_2 ≤ 200 mm Hg) benefit from high levels of PEEP (e.g., 15 cm H_2O) in terms of survival.[17] Moreover, high PEEP in patients with mild ARDS (PaO_2/FiO_2 > 200 mm Hg) is associated with higher mortality.

A useful way to think about PEEP requirements in ARDS is that functional residual capacity (FRC) is essentially the alveolar volume and a significant determinant of both PaO_2 (arterial partial pressure of oxygen) and compliance of the respiratory system (Crs). Early ARDS is characterized by both compressive and congestive atelectasis, resulting in decreased FRC, hypoxemia, decreased Crs, and elevated dead-space fraction (V_D/ V_T). PEEP can be titrated by assessing its effect upon Crs, PaO_2, and V_D/ V_T, as these signify whether lung recruitment has occurred. This can be done either through the traditional step-wise increases in PEEP or by the decremental PEEP trial.[18] Measuring V_D/ V_T is particularly useful as it is very sensitive to changes in perfusion and can detect recruitment and de-recruitment before changes become apparent in Crs or PaO_2.[19]

However, these, as well as other methods for setting PEEP (e.g., stress index or esophageal pressure) are not necessarily superior to using the ARDSNet or similar tables that balance PEEP with FiO_2.[18,20] A reasonable goal for PEEP, as well as adjunctive therapies (e.g., prone positioning, recruitment maneuvers, and inhaled vasodilators) should be to establish a stable PaO_2 at a FiO_2 ≤ 0.70. A PaO_2 of 60–80 mm Hg is reasonable for most patients, except for those with acute brain injury or intra-abdominal ischemia wherein a higher PaO_2 target is appropriate (e.g., 90–100 mm Hg).

Respiratory care practitioners now play a crucial role in the management of acute respiratory distress syndrome. The main goal of mechanical ventilation is to support life-sustaining gas exchange while avoiding ventilator-induced lung injury. The ability to implement

and manage lung-protective ventilation requires a depth of knowledge and clinical expertise that make our profession an indispensable member of the critical care team. ■

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Chronic Disease Manager

Implementing Respiratory Checklists into Hospital Discharge Planning

by Matthew Trojanowski, MSc, RRT

Evidence indicates that nearly one-fifth of Medicare patients will experience a re-hospitalization within 30 days of discharge,[1] a finding that warrants significant attention. To successfully decrease readmissions, all members of the health care team must collaborate to identify and evaluate relevant risk factors, provide evidence-based care, and empower patients to manage their disease outside of the acute care setting.

Changes in health care policy are providing additional incentives for reducing readmissions, such as the establishment of financial penalties for excessive 30-day readmission rates for acute myocardial infarction, pneumonia, and heart failure.[2,3] In October of this year, chronic obstructive pulmonary disease (COPD) will be added to this list, coinciding with annual payment updates to hospitals being linked to the Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure.[3]

Checklist: a tool for prevention

In developing strategies to minimize readmissions, health care organizations must recognize that the resources patients take home with them post-hospitalization are just as important as the care provided to them during their admission. These resources are typically provided at the time of discharge. A key component of an effective discharge is its structure, with studies finding that standardization and early initiation of discharge planning may improve a patient's transition from the acute care setting.[4,5] Despite compelling evidence, many patients still receive inadequate support at the time of discharge; but checklists can help change this unfortunate pattern.

Checklists are "lists of action items or criteria arranged in a systematic manner, allowing the user to record the presence/absence of the individual items listed to ensure that all are considered or completed."[6] Checklists prompt users to complete specific tasks that share collective importance in achieving some end result. This characteristic makes checklists very useful in situations requiring a high level of planning and coordination.

One of the greatest challenges in the discharge process is that its success requires the nearly flawless execution and coordination of multiple individual responsibilities. A well-noted expert on checklists, Atul Gawande suggests that checklists can reduce errors related to task overload.[7] As individual responsibilities at discharge increase in both amount and complexity, checklists will become increasingly valuable.

about the author...

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Checklists and respiratory-related readmissions

Many factors contribute to readmissions for patients with chronic respiratory illness. Improper inhaler technique, for example, is a persistent problem for patients with chronic respiratory disease.[8] Respiratory therapists can proactively address this risk factor by assessing a patient's technique using an evaluation checklist and then providing standardized education and training through the use of an instructional checklist. Inhaler technique can be considered independently or as one item in a set of interdependent variables.

In a study from the United Kingdom, assessment of inhaler technique was one intervention included in a COPD care bundle.[9] The bundle, formatted as a checklist, served as a prompting tool for bedside clinicians. The study demonstrated that implementation of a COPD bundle checklist improved compliance with

As experts in the management of chronic respiratory disease, RTs can demonstrate a significant positive impact on a leading cause of hospital readmissions in the United States.

evidence-based interventions for COPD management and reduced hospital readmissions.

Specifically, the study concluded that the bundle checklist significantly increased compliance with providing smoking-cessation resources for patients, referring patients to pulmonary rehabilitation programs, providing disease education, and assessing inhaler technique. After implementation of the bundle, the readmission rate decreased from 16.4% to 10.8%. This reduction in readmissions is likely a direct result of improved compliance with evidence-based disease management practices.

Respiratory therapists: critical collaborators

Throughout health care there is an increasing emphasis on total wellness. This focus requires effective collaboration among all providers. Effective collaboration requires effective communication,[10] and checklists have been shown to improve communication within health care teams.[11] Patients with chronic respiratory insufficiency require an especially high level of coordination in care, with RTs serving a prominent role.

Respiratory therapists have advanced knowledge and training in treating patients with both acute and chronic respiratory insufficiency. Chronic disease management, including the ability to independently apply protocols and guidelines, is a key competency area for RTs.[12] Respiratory therapists are key stakeholders in the provision of quality care. As experts in the management of chronic respiratory disease, they can demonstrate a significant positive impact on a leading cause of hospital readmissions in the United States. Checklists are powerful tools that can be used by RTs to evaluate and render care to patients with chronic respiratory disease, as well as effectively communicate that information to other members of the health care team. ■

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A Patient's Look at AARC Congress 2013

by Vlady Rozenbaum, PhD

"The times they are a-changin," we heard from Bob Dylan back in 1964. Oh, yes, they were, indeed. One is reminded of these words now with the turmoil generated by the continuous "fine tuning" of the Affordable Care Act (ACA). How is it going to affect patients with lung diseases? What can they expect?

Last fall's AARC Congress demonstrated that respiratory therapists are involved in a major way to make a difference in patient care. The sessions and symposia covered various aspects of lung diseases, while the number of topics discussed could make one's head spin. The main theme was inaugurated by a true expert, Stephen F. Jencks, MD, MPH, senior fellow at the Institute for Healthcare Improvement. He devoted his keynote address to COPD readmissions, encouraging respiratory therapists to re-think the stake they have in accountability and take advantage of the opportunity created by the new health care law.

about the author...

Vlady Rozenbaum, PhD, is the founder and administrator of COPD-ALERT in Silver Spring, MD.

The stake is great

Respiratory therapists are actively involved in patient education, preventive care, diagnostics, tests, disease treatment and management, acute care, oxygen therapy, delivery device training, pulmonary rehabilitation, and hospital services — including discharges, working with patients' families, and other types of care. All these components were extensively discussed at the AARC Congress.

This is what makes the AARC Congress uniquely attractive to patients. The presentations are by medical professionals, who are "in the trenches" with the patients. They personally perform the tasks and understand patient needs, concerns, and problems very well.

Respiratory therapists actively engage in educating patients and their families and caregivers. Many of the Congress symposia and sessions offered respiratory care education credits aimed specifically at medical professionals, but quite a few of the topics presented were of great interest to patients as well. Let's look at some examples: "Up in Smoke: Home Oxygen, Smoking, and Safety"; "Long-Term Oxygen Therapy: Past, Present, and Future"; "Pulmonary Function Testing"; "Airway Management"; "Airway Clearance Techniques in the Home"; "COPD and Dynamic Hyperinflation"; "COPD Disease Management"; "COPD and Comorbidities"; "Design, Development, and Use of Patient Education Materials"; "Educating COPD Patients So They Really 'Get It'"; "Pulmonary Rehabilitation"; "Effective Patient-centered Communication"; "Understanding the New GOLD Guidelines"; plus sessions on sleep studies, palliative care, and end-of-life issues.

These are topics that patient support groups frequently discuss on their forums. Expert presenters at the sessions included renowned physicians and respiratory therapists, industry representatives, government officials, leaders of the AARC, and other medical organizations. They eagerly interacted with the audience and particularly welcomed questions from and meetings with the patients.

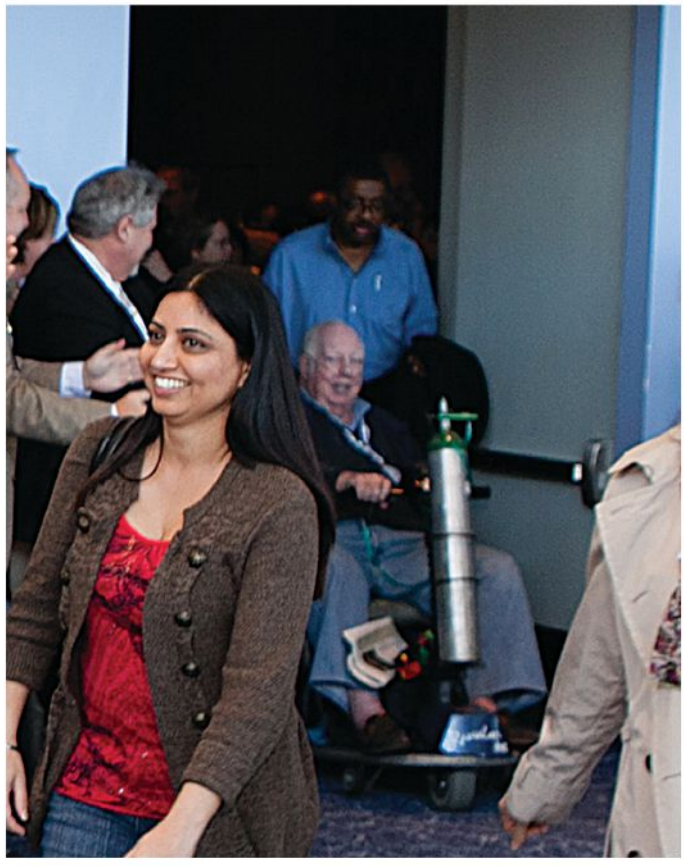
The AARC Congress paid special attention to patient education. An entire afternoon session was devoted to patient educational materials available from the AARC, the COPD Foundation, and physician organizations. One of the panelists in this session was a patient. All presenters emphasized that many materials are available on these organizations' websites.

There were also Respiratory Care Open Forums, which were an excellent opportunity to find out about respiratory research. There one could hear about scien-

tific studies completed or underway and discuss them with the investigators and other attendees.

It was obvious to everybody attending AARC Congress 2013 that now, like never before, the role of the respiratory therapist is being challenged. As Joseph Lewarski, BS, RRT, FAARC, vice president of clinical affairs at Invacare, noted: "The home medical equipment and health care business is changing at a rapid pace. National competitive bidding, new health care policies, audit pressures, and continued reimbursement pressures have placed significant strain on many providers." These developments affect respiratory therapists, and they already have had a detrimental effect on patients as well.

Several sessions were devoted to news from Washington, including an update on Competitive Bidding Round 2. At the same time, there were some uplifting presentations offered. They described new successful business models tried at various settings around the country.



Hands-on learning

One of the great attractions of the AARC Congress is the Exhibit Hall. It is considered to be the best among the respiratory conventions. A lot of improved and new equipment is on display. Company representatives welcome patients and are eager to hear their evaluations of the products. Sometimes they offer free samples.

The AARC has been a patient-centered organization for many years. As a long-time leading member of the U.S. COPD Coalition and the COPD Foundation, the Association has promoted patient issues at various conferences and forums. In addition to its educational activities, it has been a model advocacy organization that energetically supports patient advocacy activities and fights for patients' issues in Washington and state legislatures. Patients are very lucky to have a supporter like that. ■

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4

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This state-of-the-art course will provide a better understanding of this emerging technology. Pertinent for those who care for ECMO patients or who transfer patients to an ECMO center. 3.25 hours of CRCE (continuing education credits). ***Ira M Cheifetz MD FCCM FAARC and Dean R Hess PhD RRT FAARC/Co-Presiding.***

5

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Preparing Our Future Workforce: Now Is the Time To Act

by Thomas J. Kallstrom, MBA, RRT, FAARC

Later this year the AARC will be releasing the results from its quinquennial survey known as the Human Resource Survey. In it we are able to get a closer look at the human resource status of our profession. Of note, one of the most interesting but not surprising discoveries identified after the last survey in 2009 was that a large number of practicing respiratory therapists were at (or about to be at) retirement age and that over the next 10 years that percentage would continue to grow at the same pace. In large part, the bulk of today's practicing RTs entered respiratory care from the ranks of the baby boomers. They came in on a huge wave, mostly in the late 1960s and 1970s, and will be leaving in large numbers over the next 10 years. It was inevitable; but in order for us to prepare for the next generation, we need to ensure that our profession is given due consideration as students of all ages decide which direction they will follow as a career and profession.

about the author...

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

Proven tools for reaching future RTs

Through the years there were a number of ways that the AARC has attempted to lay the groundwork for those who will be making career decisions, whether it is today or in the future. I think the best way to do this is to expose this younger generation of potential respiratory therapists to practicing RTs and students — and the sooner the better. One of the first initiatives that the AARC put together to do this was a program called Peak Performance USA®, which was designed for elementary school children and their teachers and parents to teach them about asthma and its day-to-day assessment and management. Asthma is the most common chronic disease of childhood and is the most frequent cause of missed school days. By positioning a respiratory therapist in the classroom, children can see and learn firsthand from an RT. I participated in this program when my children were younger, and it was very rewarding. Many RTs have gone on to continue their liaison with local elementary schools through the years, and I am sure this has produced some RTs in today's workforce. To learn more about this go to www.peakperformanceusa.info/.

Earlier this year the AARC was invited to take part in yet another new unique way to educate children (and their parents) with an interest in science about the profession. The event, 2014 USA Science and Engineering Festival, was held in Washington, DC, in April and was the site where over 325,000 school-age children interacted with multiple professionals from around the world. School children of all ages attended (45% being middle school and younger and 65% were in high school). With help from Carolyn Williams, BS, RRT, a local respiratory therapist educator, students from Children's National Medical Center in Washington, DC, manned a booth in the exhibit hall where they were able to expose these students (who had an inclination toward the sciences and engineering) to our profession. According to Williams, this experience provided a great vehicle for letting younger minds see and perhaps consider respiratory care as a suitable professional goal. If you are interested in learning more about this unique approach to getting school-aged children interested in potential careers, I encourage you to go to www.usasciencefestival.org/images/2014/Sponsor_Recap_Report_3rd_Festival.pdf/.

Another way to electronically learn more about our profession is through an online production called "Life and Breath." This video provides a look at the practicing

RT in real-life situations. It includes an overview of what it takes to be an RT and looks at clinical practice in the intensive care unit, home care, pediatrics, disease management, diagnostics, pulmonary rehabilitation, and other areas in which we work. It can be downloaded from www.aarc.org/career/be_an_rt/life_and_breath.cfm/.

I know that when I was deciding on a career, I had no real idea of what this profession was really all about until I started my clinicals. Something like this would have been a great way to introduce the profession. "Life and Breath" is a great way for potential students to see firsthand what we do on a daily basis.

Building the profession

We will all be practicing for a finite number of years, and so it is essential that we be ready to transition the next generation of respiratory therapists into the profession. When it comes time for you to hang up your stethoscope, we all want to be sure we are passing it on to a better and brighter group of professionals. I encourage you to get engaged with your local school(s) and start a conversation with their administration about positioning an RT as a liaison who can not only serve to educate but to also provide a potential future job opportunity for a new generation. ■

There are many opportunities for RTs to educate and influence the next generation toward a career in respiratory care.

Gender Influences in Sleep

by Karla Smith, BSRT, RRT, RPSGT

Sleep, as defined by Webster's Dictionary: the natural periodic suspension of consciousness during which the powers of the body are restored. This definition tells us how vital sleep is to the body. Sleep is important for each person to function and maintain full alertness, but is sleep the same for men and women? Research is ongoing.

OSA: men vs. women

Sleep apnea is prevalent in 5% of the general population. According to the Wisconsin Sleep Cohort Study, sleep-disordered breathing occurs in 24% of the male population and 9% of the female population.[1] There is no real evidence to explain why obstructive sleep apnea (OSA) occurs more often in men; but it is speculated that differences in fat distribution, length and collapsibility of the airway, neuro-chemical control mechanisms, arousal response, and sex hormones may all contribute to the gap in prevalence between the genders.[2]

It is also worth noting that men are more likely to report snoring than women. This may be because women are embarrassed to discuss this symptom with their health care provider or because they are more likely to come to a clinic appointment alone, while men are usually accompanied by a spouse or bed partner who can report snoring and witnessed apnea.

Women also tend to complain about daytime sleepiness in a different way than men. Thus, there is speculation that even when they do complain of sleepiness, they are less likely to be referred to a sleep specialist and are more likely to be misdiagnosed with depression or some other illness.[3] Women are less likely to have an Epworth Sleepiness Scale score of >10 as well, which may suggest that Epworth Sleepiness Scale screening is more sensitive to men than to women.[4]

In regards to severity of OSA, some research has shown that men have more severe OSA than women. This may be related to weight distribution, as studies have indicated that men tend to have more severe OSA when matched with women with the same body mass index. The discrepancy lies in the fact that women have fat distribution around their midsection while men have more fat distribution around the head and neck. Men also have increased fat distribution in the area of the oropharynx, causing a more crowded airway and a more compromised airway during sleep. This may be why men have higher Mallampati scores (used to predict the ease of intubation) than women.[5]

However, in terms of OSA prevalence, the overall influence of weight tapers off with age. After age 50 for women, and age 60 for men, weight is no longer a factor; and men and women have an equal distribution of OSA. The prevalence of OSA increases in women after menopause as well.[5]

Comorbidities

While obesity is often associated with OSA, hypertension, cardiovascular disease, insulin resistance, and diabetes mellitus are other medical conditions that can be associated with it as well. Also, depression and hypothyroidism are other conditions that women with OSA may be diagnosed with. In fact, women are twice as likely as men to be diagnosed with depression. Men are more likely to be diagnosed with cardiovascular disease.[6]

Increased mortality rates in people with OSA can be attributed to cardiovascular disease or vehicular accidents.[7] In one study, women who were initiated on con-

about the author...

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tinuous positive airway pressure (CPAP) therapy had a 3.44 times higher mortality risk than men due to other comorbid conditions such as increased endothelial involvement.[8] This risk was independent of age, nocturnal oxygen desaturation, and CPAP use. Although OSA is generally considered less prevalent in women, the consequences of an OSA diagnosis could, in fact, be similar to or worse than those seen in men.

Lifestyle factors

Lifestyle factors can affect our sleep as well. These may be related to work or home, but do these factors affect sleep in men and women the same? The use of alcohol, tobacco, and certain medications can increase OSA in men and women alike; and stress can lead to overeating, which contributes to obesity and the higher incidence of OSA seen in the obese population.[9]

While OSA is more prevalent in men than women, women still complain of more sleep disturbances than men and tend to experience sleep disorders 40% more often than men. A woman's sleep complaints may happen during menstruation and pregnancy, and they continue through the post-menopausal years. These sleep disturbances include frequent arousal, decreased and increased sleepiness, and restless legs syndrome.[10]

Retirement is another factor in sleep complaints. While the data on this subject are conflicting, a review seems to show a consensus that with increased age comes decreased reports of good quality sleep. Older women report higher rates of sleep disturbances as well as an increased frequency in difficulty falling asleep and staying asleep. Women also have a higher tendency to use hypnotics to initiate and maintain sleep.[11,12]

It is worth noting that loss of a partner is also detrimental to the sleep of both men and women, resulting in significant stress and sleep problems like insomnia.

Teachable moments

Sleep is vital to the recovery process of any condition, and RTs have multiple opportunities to assess and discuss issues regarding sleep with their patients. Even if it is only through brief discussions while we are at the bedside to deliver other respiratory care, we can ask our patients about the quality of their sleep and identify comorbidities that put men and women at risk for sleep-related breathing disorders. We can also educate them on the diagnosis and treatment of their sleep disorders and advise those whose symptoms may suggest a sleep disorder to visit their physicians for more information. ■

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Congress Summer Recess

by Cheryl West, MHA

The month of August presents a good opportunity for respiratory therapists to meet with their members of Congress when they are back "home" and well out of Washington, DC. Congress is out during the month of August (and parts of July for that matter) for summer recess, and the politicians have ramped up all manner of events in order to meet with their constituents. This can run the gamut from holding town hall meetings to attending local or state fairs to parades honoring local events. Since your members of Congress are "out and about," this gives RTs the chance to educate their senators and representatives about respiratory therapy, even if it is just a 20-second sound bite.

Of course, we encourage you to push for your member of the House of Representatives to support our H.R. 2619 — the Medicare Respiratory Therapist Access Act. As you know, this bill would provide Medicare patients with respiratory conditions access to pulmonary self-management services provided by respiratory therapists in a physician's office. Our bill fits nicely into the current push to provide health services in a non-hospital coordinated manner. Moreover, with the current "laser focus" on preventing hospital readmissions (COPD will be added to the "readmit list" this October), the expertise of RTs in providing self-management services to the very patients Medicare is concerned over will enhance those efforts to decrease COPD readmissions. The more support we gather, the greater the traction that our bill will gain to become part of a large health package of bills.

Members of Congress are particularly sensitive to their constituents during this month as they are also voters who will (hopefully) show up at the polls in November. Running for office ramps up the number of public events they attend, which increases the time you might be able to see or greet your member.

about the author...

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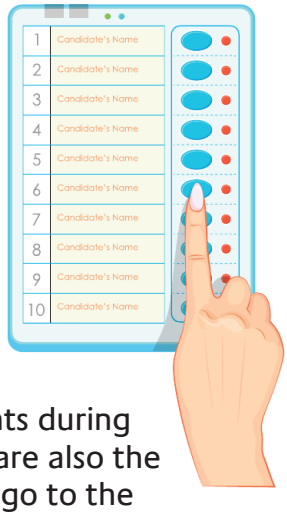
As some of you may point out, your member (House of Representatives or Senate) is retiring or has lost a primary election and won't be back in office; therefore, there isn't really a point in finding events and attending. Well, not so fast.

Keep in mind a few things

First, unless the member officially *resigns* from Congress, they are still members of Congress until the new Congress is sworn in sometime mid-January 2015. One way to look at this is if your representative is retiring, lost a primary, or lost the November election... what do they have to lose in co-sponsoring our bill H.R. 2619? Even if the representative is not returning to Congress, the more co-sponsors of our bill the better we are positioned to launch our efforts again in the next session of Congress.

Another point to remember: There is a good chance that this current Congress will have to come back into session after the November elections as a "lame-duck Congress." That means (again unless the member has resigned) even if the member lost a primary or was defeated in the November elections, they will still be a voting member of Congress the rest of this year. The sense in DC is that post-election this current Congress will come back and conclude their unfinished business — and most predict that the key health issue that must be addressed before December 31 is the perennial Medicare physician pay issue, the "doc fix."

It's fairly easy to find out when your member might be participating in or attending local events. The local district office (true for both senators and House of Representatives members) will have a schedule. Finding district office contacts is also easy. For the Senate, go to www.senate.gov/. For the House of Representatives, go to www.house.gov/representatives/). If you are unsure who



Congress members are particularly sensitive to their constituents during August as they are also the voters who will go to the polls in November.

your representative is, there is a box on the top right to put in your zip code — and that will pull it up. Individual websites for each member of the House of Representatives always list the district office(s). Give them a call to get a copy of the event calendar.

Finally, for those of you who are interested in this upcoming election cycle and want more information on the candidates who are running (whether they are current members of Congress, challengers, or vying for open seats), AARC's Capitol Connection provides many more applications than just sending an email to Congress to support H.R. 2619 (although we encourage everyone to continue to do that). Note that on the home page (http://aarc.capwiz.com/aarc/home/) there is a tab for Elections and Candidates. Just by inserting your address, you can see who is running locally in your area, what their issues are, and where the website is. This is an excellent launching point to really learn about the candidates.

Your perfect opportunity

Whatever level your interest is in politics, the upcoming election, or Congress in general, we hope you take the opportunity this summer to interact with Washington lawmakers or would-be Washington lawmakers to make them aware of both our bill, H.R. 2619, and the profession of respiratory therapy. They can't assist us if they don't know about us. ■

General Counsel

Fun To Run, But Less Risk in Brisk

by Anthony L. DeWitt, JD, RRT, FAARC

Back when my hair was brown (and I still had some), I had the privilege to work with Bill Nillson, a respiratory therapist who came to Florida from New York to work as the technical director of the department. We became fast friends; and even though we were both big fellows, we generally always beat anyone else to a Code Blue even if it meant running up stairs, because that was how we practiced. I had the occasion recently, while working on an appeal, to recall an incident we experienced late on a fall day in 1982.

When the code was called in the ICU, both Bill and I were in the department. We ran to the back double doors in the department. Bill hit one door, and I hit the other. When a 200-pound former linebacker connects with a door at roughly 10 miles per hour, the door predictably flies open. One might even say it "explodes" open. That is what it did. We had both stormed out of doors previously without incident; but on this day one of us — and to this day I cannot remember which one of us it was — had his door connect with Max, a 65-year-old member of the maintenance staff. He had been walking along, minding his own business when the door simply exploded in front of him, knocking him down. Luckily Max wasn't hurt, no incident report got written, and no one called us to task for it. However, in our blind haste to save a life, we actually could have cost one. It changed both of us, making us more careful of how we opened doors in an emergency.

Sadly, therapists often fail to appreciate how their conduct in getting to a code may present liability issues for their employer. In some respects, it is much like the liability that ensues when a police officer engages in a high-speed car chase when the driver is a teenager or non-violent felon.

Caught up in the emotion of the moment

Clarence* had very much the same experience as Max did, except that Max survived without injuries and Clarence had to be airlifted to a trauma center. Clarence was driving on a U.S. highway when a car came screeching around the corner at 68 miles per hour (the posted speed was 40), crossed the center line, lost control, and plowed head-on into the car Clarence was in.

The driver of the car was wanted for writing bad checks and had fled from a vehicle stop. The young deputy who pursued the driver at speeds in excess of 125 miles per hour on city streets did not give any thought to what might happen if a child heard the sirens and came out to watch. He likely did not think about how the chase might end. He did not give any thought to whether it was wise to chase a non-violent suspect at speeds that would be unsafe on straight and level roads, let alone curvy highways with exit and entrance ramps. Just like Bill and me, he was caught up in the moment, doing what he believed he was supposed to do and exercising questionable judgment.

The sheriff's department where the deputy worked had a pursuit policy. It said very plainly that non-violent felons were not to be pursued. Yet, again, caught up in the emotion of the moment, the deputy never processed whether prudence would have called for stopping the pursuit when the

*Client names have been changed because the case is still in the appellate process.

about the author...

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driver did not pull over. As a result of that pursuit, several people spent months in hospitals; and as any highway patrol officer can tell you, a suspect can outrun a police car but it can't outrun a police radio.

Across the country at hospitals every day, therapists, caught up in the emotion of saving a life, run through the halls to codes. In most instances, a brisk but careful walk (or a slow jog) is usually a better plan. Particularly when the code is called on a patient floor where nurses and other caregivers are present, initial oxygenation and ventilation are provided by trained personnel. If the patient is already being oxygenated, getting to the room 30 seconds quicker is not likely to have an impact on the outcome. Common sense tells us this — but being trained to think in terms of "four to six minutes," we often believe that an arrival later than four minutes is equivalent to certain death. In fact, however, patients frequently go longer and still survive.

Hospitals also have numerous physical obstacles. There are cleaning carts, medication carts, "wet floor" signs, laundry carts, and dozens of sick and injured patients trying to ambulate so they can go home. Just because no one is visible in the hallway doesn't mean a patient won't pop out the moment they hear you running down the hall. Many of the patients over the age of 75 are only one fall away from a fractured hip or broken ribs. Most of us wouldn't want an injured patient on our conscience.

Early in my career, in my first few weeks at a new hospital, I ran to a code and slipped badly going around a corner. I slid 20 feet on my side, impacting a wall. The jolt was jarring, my pens flew out of my pocket, and my stethoscope slid another four feet down the hall. The impact left a bruise the size of the Sear's catalog on my back. Jogging quickly behind me, the day-shift supervisor just smiled and reached the code several minutes before I could even catch my breath. To this day she has never let me forget it. When I think back about that now, I realize that as a clinician I took risks that now, as a lawyer, I cannot justify. So I will not try. I will simply say: learn from my errors.

A reasonably prudent therapist

Therapists are always judged for their conduct by that of a reasonably prudent therapist. That means a therapist who understands that others are present and if they called the code blue, then they likely understand the ABCs and how to initiate bag-valve-mask ventilation. The immediate needs are being met, so the therapist who is being summoned should be prudent and get there quickly but safely. A therapist who collides with patients or visitors in that process is likely to be judged harshly.

Do not misunderstand. Therapists should always care about getting to a patient in distress and should proceed with all deliberate speed. However, that means using sound judgment about how fast to go and what steps to take along the way. It is vital to patient safety to remember that sometimes haste does, indeed, make waste. The hospital is far more likely to be sued for a broken hip caused by knocking a patient to the floor than it is to be sued for failing to resuscitate a patient who perhaps was going to die anyway. It may be fun to run, but there's less risk in brisk. ■

Changes to Examinations for the CRT and RRT Credentials Effective in 2015

by Robert C. Shaw Jr., PhD, RRT, FAARC

The National Board for Respiratory Care has been planning changes to programs through which the CRT and RRT credentials will be achieved. Although some elements will change, each candidate will still be required to demonstrate CRT proficiency before becoming eligible for the RRT. The RRT system will continue to assess competencies (1) over a broad body of content and (2) deeply over a selection of patient cases.

Therapist Multiple-Choice Examination

Developmental milestones

While adhering to its traditional five-year cycle, the NBRC studied the respiratory therapy job in 2012. A new examination model was defined before starting the study. A trend observed from four studies showed that tasks at both entry level and advanced level had converged to the point where it was justified to assess candidates for CRT and RRT over the same content.

The study method for 2012 differed. The survey prompted respondents to assess tasks in the context of a general respiratory therapist in contrast to a two-pronged approach for entry and advanced therapists. Instead of identifying tasks and test specifications for the Entry Level CRT Examination and the Written Registry Examination, only one examination was affected.

The Therapist Multiple-Choice Examination (TMC) is new. Items will be of the multiple-choice type, each of which offers four options. The examination will assess candidates' responses to 140 items. Two cut scores will be established. Equaling the lower cut will be associated with the CRT credential. The higher cut will be associated with eligibility to take the Clinical Simulation Examination.

about the author...

Robert C. Shaw Jr., PhD, RRT, FAARC, is the assistant executive director and psychometrician for the NBRC in Olathe, KS.

Details about test specifications

A product of the job analysis study were the test specifications shown in Table 1. Comparisons of TMC specifications to CRT specifications are respectively displayed in Tables 2 and 3.

Nuances about future examination content

The 2012 job analysis involved a committee of eight who represented those responsible for the CRT and RRT exams. Three members from outside the NBRC also served on the committee — representing the AARC, the AARC Board of Medical Advisors, and the Commission on Accreditation for Respiratory Care.

The committee decided to no longer assess therapists while manipulating oxygen tents or troubleshooting 12-lead ECG machines. They decided to leave assessments about the initiation of resuscitation to local institutions. However, it would be incorrect to infer there will be no content about emergencies. Accepting physicians' orders and general documentation of therapy also were removed by the committee. A therapist's response to an adverse reaction will remain.

Survey results removed tasks related to nitric oxide therapy and arterial line insertion, plus assisting physicians with ultrasound, endoscopy, and echocardiography.

An examination outline is not a curriculum

The job analysis committee decided not to take up space while presenting scenarios about documenting some basic aspects of care. Does this imply that such content should be omitted from education programs? No. Such content is necessary to a graduate's ability to

Table 1. Test Specifications for the Therapist Multiple-choice Examination

Therapist Multiple-choice Examination	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
Content Area				
I. Patient Data Evaluation and Recommendations	12	26	17	55
A. Evaluate Data in the Patient Record	3	5	0	8
B. Gather Clinical Information	2	7	4	13
C. Perform Procedures to Gather Clinical Information	3	9	0	12
D. Evaluate Procedure Results	2	2	7	11
E. Recommend Diagnostic Procedures	2	3	6	11
II. Troubleshooting and Quality Control of Equipment, and Infection Control	7	10	3	20
A. Assemble and Troubleshoot Equipment	3	9	3	15
B. Ensure Infection Control	2	0	0	2
C. Perform Quality Control Procedures	2	1	0	3
III. Initiation and Modification of Interventions	12	25	28	65
A. Maintain a Patent Airway Including the Care of Artificial Airways	1	3	5	9
B. Perform Airway Clearance and Lung Expansion Techniques	1	2	3	6
C. Support Oxygenation and Ventilation	1	2	6	9
D. Administer Medications and Specialty Gases	2	3	0	5
E. Ensure Modifications Are Made to the Respiratory Care Plan	2	8	9	19
F. Utilize Evidence-based Medicine Principles	1	2	3	6
G. Provide Respiratory Care Techniques in High-risk Situations	1	1	2	4
H. Assist a Physician/Provider in Performing Procedures	2	2	0	4
I. Initiate and Conduct Patient and Family Education	1	2	0	3
Totals	31	61	48	140

Table 2. Comparison of Content Domain Specifications

	Items on Examinations	
Domain	**CRT**	**TMC**
I. Patient Data	26	55
II. Equipment	29	20
III. Interventions	85	65
Totals	140	140

Table 3. Comparison of Cognitive-level Specifications

	Items on Examinations	
Level	**CRT**	**TMC**
Recall	35	31
Application	74	61
Analysis	31	48
Totals	140	140

function within legal requirements and employers' rules. Hence, critical thinking on the part of curriculum developers is expected as they study the detailed content outline.

As people have digested information in the outline, misconceptions have emerged. Content related to *oxygen tents* was ruled out before the survey was assembled, plus there was no mention of *oxygen hoods* in the outline. Some have concluded there will be no items about oxygen hoods on an examination, which is false. To illustrate, consider the following from the outline:

II. TROUBLESHOOTING AND QUALITY CONTROL OF EQUIPMENT, AND INFECTION CONTROL
  A. Assemble and Troubleshoot Equipment
    1. Oxygen administration devices

Oxygen administration devices covers several devices. A general statement was used rather than listing every conceivable device in 2012. This makes it possible for new devices to become a part of examination content during the five years before another study. An efficient outline also was a goal to avoid discouraging people from responding to the survey.

Some have proposed that *endotracheal intubation* be excluded from examination content since those words do not appear in the outline. What the outline does include is the following:

III. INITIATION AND MODIFICATION OF INTERVENTIONS
  A. Maintain a Patent Airway Including the Care of Artificial Airways
    3. Establishing and managing a patient's airway
      e. endotracheal tube

A curriculum designed to prepare a graduate to do what is expressed in III.A.3.e really must cover endotracheal intubation.

Oxygen hood and *endotracheal intubation* examples highlight the fact that the outline is not a program curriculum. The NBRC's purpose is to confer credentials. Education programs are expected to interpret the outline as a guide — and only a guide — for curricular content.

Table 4. Current and Future Specifications for the Clinical Simulation Examination

Type of Problem	Specifications	
	Current 10-Problem	Future 20-Problem
A1. COPD Conservative Care	1 or 2	2
A2. COPD Critical Care	1 or 2	2
B. Trauma	1 or 2	3
C. Cardiovascular	1 or 2	3
D. Neurological/Neurosurgical	1 or 2	2
E. Pediatric	1	2
F. Neonatal	1	2
G. General Medical/Surgical	Optional	4

Clinical Simulation Examination

An unforeseen challenge

Where the Therapist Multiple-Choice Examination will assess a broad range of competencies, the Clinical Simulation Examination will deeply assess competencies. Changes are on the horizon for the simulation examination, which will be implemented at the same point the TMC Examination is launched in January of 2015.

Simulation examination changes were prompted by the decade since administrations had shifted to a computer platform. Prior to the year 2000, each candidate waited weeks for results. Results have been subsequently released to each candidate on the examination day.

Instant results release demands that every problem has been validated against responses from candidates. The requirement to limit the scored portion of the examinations to used problems slowed regular updates to problems. After reaching a critical point, the NBRC decided to explore other ways to accomplish simulation testing.

Solving the problem

The NBRC decided to halve the length of each problem. They arrived at this solution after often observing that only one section would benefit from updated content. The number of problems was doubled since the NBRC continued to see value in a four-hour test.

Opportunities to strengthen other elements of the simulation examination were taken. Table 4 compares current and future specifications. Current specifications permit leeway in assembling test forms but permit

variability among test forms. The examination committee decided to use a constant set of specifications to present an equal challenge within each test form.

The simulation is essentially two short tests within one examination. One set of test scores expresses information-gathering ability. The other set of test scores expresses decision-making ability. Each scale has a cut score. Another change will involve summing the results into one total score, which will be compared to one cut score. The NBRC expects scores to become more accurate in expressing candidates' abilities.

Table 5. Comparisons of Current and Future RRT Credentialing Program Elements

Program Elements	Numbers	
	Currently	In the Future
Hours of Testing Time	9	7
Examinations	3	2
Testing Sessions for a Candidate Who Passes on the First Attempt	3	2
Sets of Test Scores	4	2
Passing Points	4	3
Multiple-choice Items to Assess Competencies Broadly	240	140
Patient Management Problems to Assess Competencies Deeply	10	20
Typical Number of Sections in a Patient Management Problem	10 (8-12)	5 (4-6)

Summary

Beginning in January 2015, passing the Clinical Simulation Examination after passing the TMC Examination will complete requirements for the RRT credential. The process by which this goal is accomplished will change. Table 5 simplifies details about changes to the RRT program.

Not much will change within the CRT program. Candidates will still be able to achieve the CRT in one session. The number of items will be the same.

The NBRC Board of Trustees and its committees are interested in your questions, comments, and concerns. You may contact the NBRC by email at nbrc-info@nbrc.org, by phone at (888) 341-4811, or visit the NBRC website at www.nbrc.org. ■

Ensuring that "No" Means "Nowhere at All"

Hospitals' campus-wide bans on tobacco send the right message to communities

by Debbie Bunch

What constitutes a ban on smoking? Is it enough to require patients, visitors, and staff to step outside to a designated smoking area? Not anymore, say AARC members in the Association's Tobacco-Free Lifestyle Roundtable.

These days you'd be hard pressed to find a hospital where patients, visitors, or staff are free to "light up" inside the building. Thanks to a 1992 Joint Commission requirement banning indoor smoking in accredited hospitals,[1] ashtrays full of cigarette butts in hospital lobbies are a thing of the past.

However, to say that smoking has been eradicated from the nation's health care campuses would be a stretch. According to the American Nonsmokers' Rights Foundation, only around 3,600 of the nation's 5,723 hospitals have adopted 100% smoke-free campus policies, which means smoking is still allowed somewhere on campus at more than 2,000 hospitals nationwide.[2,3] And wherever there's smoke, there's the chance of secondhand smoke exposure.

As the keeper of all things respiratory in their facilities, respiratory therapists not only have an opportunity, but also an obligation, to step up and help their facilities work toward the 100% smoke-free mark. In this article, four AARC members from the Association's Tobacco-Free Lifestyle Roundtable explain what the process entails and how more RTs can get involved.

It just makes sense

Through his work with the North Dakota Society for Respiratory Care, Jay Taylor, RRT, TTS, was instrumental in supporting a legislative

measure in his state to earmark additional payments from the 1998 lawsuit against the tobacco companies for a comprehensive tobacco control program. He ended up being appointed to the North Dakota Tobacco Prevention and Control Advisory Committee by the governor and has been working on behalf of the anti-tobacco movement ever since. His recommendation to hospitals that have yet to implement tobacco-free campuses is to take a moment to carefully think about the message you're sending.

"My feeling is that the person is entering a *health care* facility," says the recently retired tobacco education coordinator at Sanford Medical Center in Fargo. "As far as the health risks from smoking and/or secondhand smoke go, there is no debate left; and anyone with any sense at all realizes that smoking and tobacco use are killers, as are exposure to secondhand and even third-hand smoke. To allow tobacco use of any kind on a health care facility campus is, in my opinion, promoting the addiction to nicotine."

Jonathan B. Waugh, PhD, RRT, FAARC, agrees hospitals have an innate responsibility to lead the way in developing smoke-free policies and says Taylor is on the mark when he includes the use of all tobacco products. "I think we should be talking about a tobacco-free policy rather than a smoke-free policy," says the faculty director for the Center for Teaching & Learning at the University of Alabama at Birmingham. "This includes concern for the user as well as others in the setting in question." While not a "tobacco product" per se, he emphasizes e-cigarettes should definitely be included. In April of this year, the AARC published a position statement on electronic cigarettes, which can be found at www.aarc.org/resources/position_statements/statement_index.asp.

Georgianna Sergakis, PhD, RRT, CTTS, assistant professor in the respiratory therapy program at The Ohio State University in Columbus, and Karen Schell, DHSc, RRT-NPS, CTTS, cardiopulmonary services director at Newman Regional Health in Emporia, KS, are both on board with that concept. "There is no clear scientific evidence that e-cigarettes are safe or a method to quitting," emphasizes Dr. Sergakis. Dr. Schell says e-cigarettes, like tobacco products themselves, have no business on hos-

pital campuses and should be part of any comprehensive effort to establish a truly smoke-free environment.

Dr. Waugh says these products — which as of this writing in late spring were set to go under regulation by the U.S. Food and Drug Administration in early July — can affect air quality in shared spaces. "Although one of the main carrier compounds, propylene glycol, is cleared for GI consumption, it is not cleared for inhalation," emphasizes the educator. Users can also mix their own cartridges using an array of undesirable substances, in some cases including illicit drugs. "From a legal as well as a health safety position, it is prudent to take a conservative approach to e-cigarettes until more is known about their effects on health."

All hospitals that embark down the tobacco-free campus road should be prepared to offer their patients and staff the help they need to kick the habit.

Leverage your expertise

Respiratory therapists who want to get more involved in helping their facilities establish a tobacco-free campus policy should be able to leverage their intimate knowledge of the respiratory system to gain a place at the table. "It only makes sense that we participate because as RTs we see the benefits of quitting and the end result of the smoker in the patients we care for throughout the day," says Dr. Schell. It helps, however, to gain additional knowledge and expertise in tobacco cessation and treatment; and when Newman Regional decided to adopt its smoke-free campus policy, that's what she did. "I became a Certified Tobacco Treatment Specialist (CTTS) when the hospital decided to become smoke-free," says the manager. Taking that initiative ensured she would have a major role in the planning process. "I helped with developing the policy, educating the patients and staff, and providing cessation classes," she says.

As an RT educator, Dr. Sergakis, who also holds the CTTS credential, didn't play a key role in establishing the smoke-free campus policy at Ohio State; but she was instrumental in developing the brief tobacco intervention service provided by respiratory therapists in the medical center. Thanks to this service, the hospital was able to close its tobacco treatment center and rely 100% on RTs to deliver the tobacco-cessation counseling that should be offered to patients in the setting of a smoke-free campus. "RTs are now providing the service by protocol," she says. "This is a very positive example of how a respiratory therapy department can step up and provide a valuable service on a tobacco-free health campus."

Do your homework

As the resident tobacco-cessation coordinator at Sanford Health, Jay Taylor played an instrumental role in setting up the tobacco-free policy on his campus. "We started slow by having meetings with various interested parties and listening to concerns from staff as well as folks from our security service who couldn't get past the enforcement issue," he says. "My best advice is to do your homework." He suggests talking to people at other facilities who have already been through the process to see where the opportunities and pitfalls lie.

Taylor also emphasizes the importance of getting buy-in from nursing from the outset. "Get nursing staff and nursing management involved. They are truly the frontline and can be your best allies." After you write the policy, he recommends running it by the people in your hospital who write policies for a living and asking them to help you fine tune the language. Only then will you be ready to take it to the next level. "After you get your background information researched and ready, then go after upper management," advises Taylor.

Dr. Waugh says committees that are set up to address the smoke-free or tobacco-free campus issue should have representation from a wide variety of hospital personnel. Engaging staff throughout the facility helps build buy-in for the concept and balances the conflicting interests that are inevitable when any change is proposed. However, RTs don't have to sit back and wait to be invited to join the group. They can be the drivers of the policy in the first place. "Take initiatives to administrators rather than waiting to be included on someone else's initiative," he recommends.

For educators like Dr. Waugh, a role in the background can come into play as well. When the policy at the University of Alabama at Birmingham's medical center was getting ready to undergo revision to address the e-cigarette issue, he researched the area for the committee that had been set up to tackle the problem. "I provided the working committee with a publication on the legal implications of not having e-cigarettes in our workplace smoking policy," notes Dr. Waugh.

Of course, enforcement can be an issue

Getting a committee set up to develop a tobacco-free campus policy and working out the details of what that policy will entail, though, is really only half the battle — and in some respects, the easier half. Once the policy is in place, it will have to be enforced; and ensuring everyone is on board with that concept can be the biggest challenge.

"All policies can run into problems with enforcement, whether directed at visitors or staff," says Taylor. "We offered staff tobacco counseling and encouraged signing with the North Dakota Quit Line. We even got a grant that allowed us to provide free nicotine replacement therapy for staff. But you know what they say about 'leading a horse to water'…" Taylor says the biggest problem they faced was having managers who wouldn't enforce the policy with their own staff. "I have no answer or solution for that kind of ignorance, but don't let them drag you down."

Dr. Waugh notes that threats of legal action can keep some policies from being enforced, and it can often be difficult for hospitals to come up with penalties for those who violate the policy. "Some find that component difficult to agree upon and tend to avoid taking on the work of the policy creation." He says it would certainly help if more states would pass laws like the one enacted in New York in July of last year requiring smoke-free hospital grounds.[2] In the meantime, however, hospitals are going to have to grapple with the enforcement issue on their own.

Dr. Schell says the biggest issues with policy enforcement often center around patients, physicians, and staff who continue to light up despite the policy, and the fact that non-smoking staff members don't feel empowered to call their co-workers on the carpet about their behavior. For example, in some cases, she says staff can clearly smell tobacco odor on the clothing of employees who smoke; but the problem is not addressed by managers with the proper response, which can and should include being sent home after repeated incidences. In her hospital, staff members have been empowered to approach violators without fear of reprimand.

Dr. Sergakis points out that many hospitals don't have the resources to truly enforce the policies they set up — or even develop and implement those policies in the first place. "Health systems are stretched thin; and to implement a comprehensive smoke-free policy — and do it right — takes dedication of time and resources," she says. However, that doesn't mean they should not try. "There isn't a more important commitment to the safety and health of patients, staff, and visitors that a health system can implement."

Dealing with patient/visitor noncompliance

Handling staff members who violate the tobacco-free policy is one thing. Dealing with patients and visitors who refuse to follow the rules is another. Now that patient satisfaction scores are tied to reimbursement through Hospital Consumer Assessment of Health Providers and Systems (HCAHPS), no one wants an irate patient; and since patients are in the hospital due to illness, no one wants to put undue pressure on them or their family members and friends either.

However, the good news is that problems with patients and visitors absolutely refusing to adhere to these policies appear to be rare. "When patients are admitted to Sanford Health in Fargo, they are informed of the tobacco-free campus policy — which, by the way, includes e-cigarettes — in the nicest and most professional manner," says Taylor. Anyone who balks can be up for discharge, and visitors who are spotted using tobacco on campus can be reminded of the tobacco-free status by any staff member who observes them (not just security). "Depending on how they behave, Sanford reserves the right to call the police and file a complaint," says Taylor.

Those policies are working well for the facility. "We found that most people don't mind following the rules, and I have never gotten any resistance when I've approached visitors outside of entrances smoking." On the few occasions when someone using an e-cigarette produced a card provided by the e-cigarette manufacturer suggesting users have the right to indulge in the product wherever they want, he would simply use the occasion to turn their statements into a "gentle tobacco consult."

The same has been true at Newman Regional. Similar to the policy at Sanford, patients are informed about the no-smoking policy on admission and visitors are not allowed to smoke inside or outside the hospital. Since there is a public smoking area across the street from the

Help Is Available!

If your hospital is getting ready to create a smoke-free or tobacco-free campus policy — or you just want to gather some resources so you'll be ready when the time comes — join the AARC's Tobacco-Free Lifestyle Roundtable. Membership is available to all AARC members at no additional charge, and the expertise you'll find there will help you get up to speed on these policies and what it takes to implement and enforce them. ■

campus, smokers are allowed to light up there; and a few physicians have also written permission in their ambulatory patients' charts allowing them to use it, although Dr. Schell says some of the staff worry about the liability of letting patients go off campus to smoke. However, most patients and visitors follow the rules without complaint, and Dr. Schell says the hospital has seen few implications from its policy on its HCAHPS surveys. "We really have never had anyone ticked off — maybe a little unhappy but (it was) not reflected in our surveys."

The University of Alabama at Birmingham Medical Center's manager of respiratory care, JoAnna McCarver, MAE, RRT, says patients/visitors there also can go across the street from the hospital to a public space where smoking is permitted, but no medical exceptions are ever made for patients to smoke within the hospital. Patients who violate the rules can be discharged, and her hospital isn't worried about the HCAHPS survey either. "The fear of patient/visitor dissatisfaction with the tobacco-use limitations has not come up for discussion in terms of survey results," says McCarver. "I think the risk associated with patients smoking outweighs the chance of having bad survey results."

Amanda Zeid, BS, RRT, team leader at the James Cancer Hospital at Ohio State University, believes the brief tobacco intervention delivered to patients at her hospital goes a long way toward neutralizing any negative effects of the tobacco-free campus policy there. The hospital has also provided staff members with scripts they can use to convey the no-tobacco message in a way that patients and visitors will accept. "The scripting gives the reasoning for going tobacco free, as well as examples of how to politely and empathetically approach patients about their adherence to our policy," she says. Still, if someone repeatedly disobeys the policy, staff members do have the power to call security to assist them in handling the situation.

Helping patients and families cope

Enforcement of the policy aside, all hospitals that proclaim "tobacco-free campus" should be prepared to offer their patients and staff the help they need to kick the habit. Jay Taylor says respiratory therapists who seek out specialized training in the area are the right clinicians for the job. "Tobacco education has been fine-tuned of late to address all issues surrounding it. It's medical, political, social, agricultural," says Taylor. "Go get the training! I think you'll find that there is more and more coverage in health plans for reimbursement, and that helps a lot."

Of course, time is precious in hospitals these days. Similar to his colleagues at Ohio State, Dr. Waugh recommends developing short interventions that can help patients with abstinence in the most cost-effective manner possible. "Routine interventions must be highly efficient and brief. That means being prepared and having a plan/protocol to follow," he says. He believes all staff RTs should be proficient at an abbreviated intervention such as the "3 A's," which addresses the actions (avoid, alternatives, adjust) someone can take when they feel pressured to smoke.

Dr. Sergakis says the process should begin with a review of the patient's tobacco history and level of dependence. "That allows the RT to start the conversation with the patient in order to suggest the appropriate nicotine replacement therapy to keep patients comfortable during their hospital stay." Noting that withdrawal symptoms peak during the first 48–72 hours of abstinence, she says it is important to provide the patient with this assistance from the outset of the stay. She also emphasizes the need to address tobacco use among hospital visitors who will have to refrain from tobacco use during what arguably may be a stressful time for them as they cope with a friend or family member who is receiving treatment. "There should be access to nicotine replacement therapy products and resources for quitting available for these individuals as well."

Dr. Schell also stresses the need for a system that identifies smokers upon admission. At Newman Regional, they built an intervention into their computer admission forms to do just that. Everyone in her department is trained to follow up with patients about their need to remain tobacco-free during the hospital stay and to offer the help and assistance they need at the bedside to give up tobacco while in the hospital, and hopefully beyond.

Get your ducks in a row

Creating and enforcing a smoke-free or tobacco-free policy on a health center campus can be a challenge; but when all goes as planned, the initiative can pay off many times over through a healthier environment for patients, visitors, and staff. Dr. Waugh believes respiratory therapy departments should create an annotated bibliography on tobacco-free policies, with accompanying articles and case examples of policies and model policy templates from other institutions so they will be ready when their hospitals are ready to begin the effort.

Dr. Waugh believes RTs should be advocates for air quality and lung health as well as sources for information needed for crafting air safety policies. "Volunteer to be on workplace safety policy committees and let administrators know in advance you will be glad to serve in such a capacity when the need arises." ■

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4 Great Reasons To Attend AARC Congress 2014

Meeting convenes in Las Vegas, Dec. 9–12

1. Need-to-Know Info
2. Original Research
3. Camaraderie Meets High Adrenalin Excitement
4. All-in-One Venue

For respiratory therapists caught up in the day-to-day world of bedside care, process improvement, patient satisfaction, readmissions penalties, and the like, there is no better way to recharge the professional batteries than by attending the AARC International Respiratory Convention & Exhibition. The largest and most respected respiratory care conference in the world, the AARC Congress represents the best opportunity you'll have all year long to learn about the latest developments in the profession while networking with like-minded peers from across the country and around the world.

AARC Congress 2014 will take place in Las Vegas, NV, Dec. 9–12. Although planning is still underway, here are four reasons why you don't want to miss this premier meeting of the year in the respiratory care profession.

1. NEED-TO-KNOW INFO

By the time we convene in Las Vegas, penalties for excessive 30-day readmissions for COPD will be a reality in U.S. hospitals; and other changes underway as a result of the Affordable Care Act will be impacting facilities as well. Couple those paradigm shifts with the ever-increasing array of medical technology at our disposal and the growing needs of our patients, and it's clear we'll all be seeking guidance on the way forward for our departments and our profession.

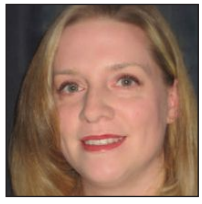
The AARC Congress will offer us that guidance and more. With an Exhibit Hall filled with all of the manufacturers and service providers in the business and a program packed with the cutting-edge topics and speakers we've come to expect from an AARC meeting, we're sure to go home with the tools we need to build a solid presence in our facilities in 2015 and beyond.

The preliminary program is available on www.AARC.org, but here's a brief look at just a few of the lecturers and topics you can choose from this year in Vegas:

- **BRIAN CARLIN, MD, FAARC,** will present talks on "The Problem with COPD and Readmissions," "The New ATS/ERS Guidelines for Pulmonary Rehabilitation," and "Oxygen Therapy: The Science Behind the Therapy."

- **ROBERT KACMAREK, PHD, RRT, FAARC,** will take part in a pro/con session on "APRV Is Optimal for Preventing Lung Injury."

- **JULIANNE PERRETTA, MSED, RRT-NPS,** will tackle two topics, "RT Instructors as Coaches — Training to Manage Critical Events" and "Creating a High-Fidelity Mechanically Ventilated Patient Overcoming (Almost) All Simulator Shortcomings."



- FREDERIC D. SEIFER, MD, FCCP, will offer a talk on "Fighting COPD Begins with Diagnostics."

- **ROBERT CHATBURN, MHS, RRT-NPS, FAARC,** will address the topics, "Clinical Research: How To Get Started," "What Is the IRB and How Does It Help Guide Research?" and "Computerized Mechanical Ventilation Will Be Superior to Any Respiratory Therapist."

- **KATHLEEN DEAKINS, MSHA, RRT-NPS, FAARC,** will speak on "Asthma," "Airway Clearance in Pediatrics: Does Device Matter?" and "Protocols, Care Paths, Guidelines, and Standards in 2015."

- **GARRY KAUFFMAN, MPA, RRT, FAARC,** will look at a topic that plagues us all in two talks: "You've Given All You've Got and They Want More: Dealing with Stress and Time Management — Seek First To Understand" and "You've Given All You've Got and They Want More: Dealing with Stress and Time Management — Committing to the Change."

- **RICHARD KALLET, MS, RRT, FAARC,** will participate in a pro/con session on "Aerosolized Vasodilators Are Equivalent to Inhaled Nitric Oxide in Safety and Efficacy" and will present lectures on "The Use of Capnography To Determine Physiologic Dead Space and Guide Management of Mechanical Ventilation" and "Prone Positioning."

- **JENNI RAAKE, MBA, RRT-NPS,** will present on "Risky Business: When the Business of Patient Care Puts the Caregiver at Risk" and "You Talking to Me? Communication Techniques for Patient Safety."

- **JONATHAN FANAROFF, MD,** will address "Alarms and the Neonate: Give Me My Earmuffs," "BPD Prevention: Does Strategy Matter?" and "Palliative Care and Ethical Decisions for Resuscitating the Extremely Low Birth Weight Infant: Where Do We Stand?" ■

2. ORIGINAL RESEARCH

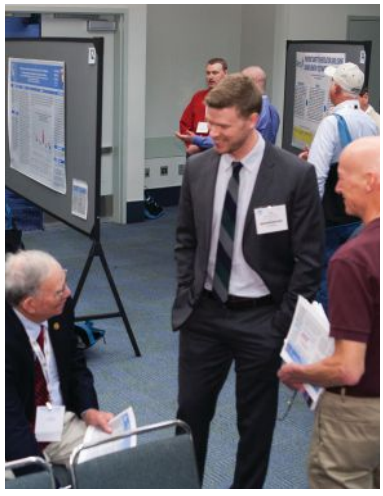
With original research conducted by and for RTs, the OPEN FORUM is always a big attraction at the AARC meeting. This year brings several changes to the FORUM that developers believe will enhance the experience even further. Designed to capture the best of the OPEN FORUM over its 30+ years of existence, plus ideas gleaned from similar presentations at other medical meetings, they are all aimed at increasing your ability to learn more about what your colleagues are doing in their facilities that you might want to take home and implement in yours.

EDITOR'S CHOICE:

Posters for this select group of abstracts will be on prominent display during the first two days of the Congress. On Day 3, each author will make a 10-minute slide presentation followed by 10 minutes of audience questions and discussion. By singling out these presentations with the "Editor's Choice" label, reviewers and attendees will be better able to recognize those abstracts that reflect the most important science and have high potential for translation into practice.

POSTER DISCUSSIONS:

Posters in this group will be presented in sessions grouped by topics, similar to the format the FORUM has been using for a number of years now. A brief oral presentation will be followed by audience questions and discussion. Most accepted abstracts will fall into this category.



POSTERS:

Posters in this category will be displayed during Exhibit Hall hours on an assigned day. These authors — many of them presenting at the FORUM for the first time — will then gather between noon and 1 p.m. on that day to discuss their work. This new category is expected to be a great way for newcomers to research to get their feet wet in a less intimidating environment while also sharing their work with their colleagues. ■

3. CAMARADERIE MEETS HIGH ADRENALIN EXCITEMENT

The AARC Congress is a great place to network with your colleagues in respiratory care, and every year the meeting features a number of fun and informational events aimed at giving you the chance to get out and mix and mingle. An opening reception kicks things off the first night of the meeting, all the Specialty Sections and many of the Roundtables host meetings, and the Exhibit Hall itself is a great place to stop and chat with friends old and new.

Chief among these opportunities to join your colleagues in the spirit of professionalism is our annual Sputum Bowl — and this year you can expect some great innovations. Topping the list is the introduction of a whole new category of teams we're calling the "Renegades."

As anyone who has attended a Sputum Bowl in recent years knows, teams who compete at the nationals are the winners of their state competitions. Last spring, AARC members from across the country were invited to assemble teams of their own and apply to take part in this year's competition in Las Vegas. Some are coming in cold, never having competed in a Sputum Bowl before. Others represent state teams that didn't win their state competitions. Whatever the case, they're definitely going

to be the "new kids on the block," and everyone will be waiting to see how they fare against teams with a record of success on the state level.

The deadline for applying for a spot in this year's Sputum Bowl is August 29; so if you have a team you'd like to bring to Vegas, go online to the Sputum Bowl page on the AARC website (https://www.aarc.org/members_area/sputum_bowl/index.asp) and fill out our Renegade Team application form. With the addition of the Renegade Teams, plus a return of our popular "Ask an Expert" and "Call Your Posse" lifelines and a number of surprises, the 2014 Sputum Bowl promises to deliver the high-adrenalin excitement you've come to expect from this annual event in the respiratory care profession. ■

4. ALL-IN-ONE VENUE

Convenience will take center stage at AARC Congress 2014 as we convene the meeting for the first time at the Mandalay Bay Resort. Located right on the Las Vegas Strip, this cutting-edge facility includes the fifth largest convention center in the nation, offering 1.7 million gross square feet of meeting space. With everything all in one place, attendees will be able to maximize their time at the sessions while gaining more downtime to enjoy all that Las Vegas has to offer as well.

DIVE IN!

Mandalay Bay has an onsite shopping mall and much more. You could spend virtually all of that downtime just taking advantage of the attractions at this world-class facility. One you won't want to miss is the Shark Reef Aquarium. Here you'll come face to face with exotic sea creatures such as sawfish, giant rays, endangered green sea turtles, piranha, jellyfish, and the rare golden crocodile.

With more than 2,000 animals in 1.6 million gallons of water, the aquarium is truly a natural wonder; and if you're feeling especially adventuresome and are a certified diver, you can even sign up to dive with the sharks in the Shipwreck Exhibit. Featuring more than 30 species of sharks, including the sand tiger, sandbar, and white tip reef sharks, it's the ultimate SCUBA experience.

Obviously not everyone will be up for that challenge, but you might want to feed the stingrays or sea turtles, or even the sharks (with plenty of supervision from on-site aquarists of course). And when the animals are all full, it'll be your turn. At the Mandalay Bay, you'll find 29 different restaurants to choose from, including several created by world-famous chefs like Wolfgang Puck, Hubert Keller, and Rick Moonen.

ONE-OF-A-KIND SHOWS

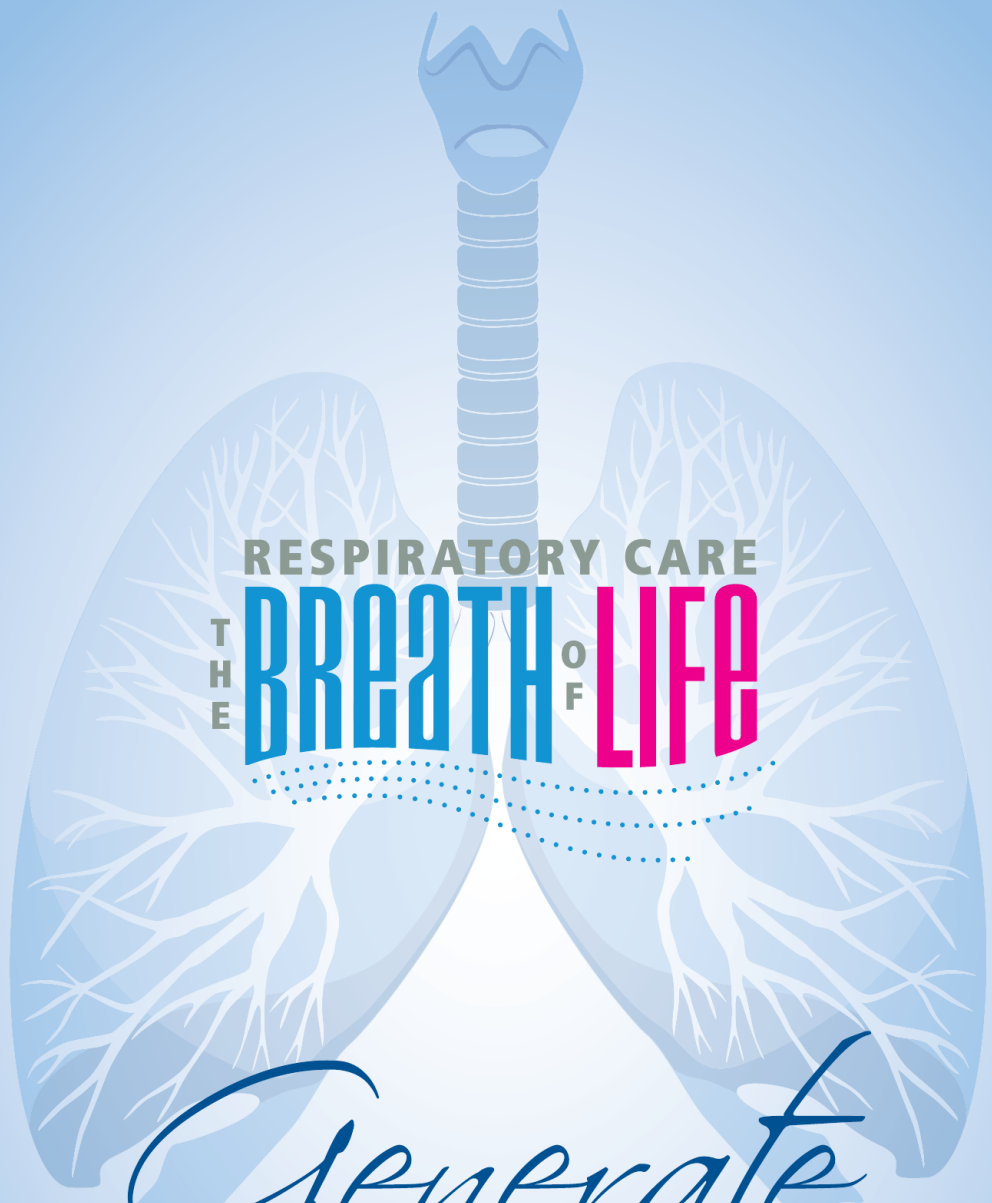
After dinner, head over to Michael Jackson ONE by Cirque du Soleil for a night of entertainment you won't soon forget. Driven by Jackson's powerful, multi-layered music, the show takes the audience into a world that is at once majestic, playful, magical, and heart-warming. The cast of 63 dancers and performers will dazzle you with their aerial performance, driving acrobatics, and vivid choreographies that use the urban/hip hop idiom as a springboard for exploration. It's truly a heartfelt tribute to the work, innovative spirit, and legacy of the King of Pop.

The Mandalay has plenty of additional nightlife to entertain you after hours as well, from comfy lounges and bars, to the LIGHT Nightclub, billed as the ultimate theatrical experience where everyone gets the chance to get into the act. Inspired by the creative minds behind Cirque du Soleil, LIGHT is unlike any other establishment you'll see anywhere else in the world.

RESPIRATORY-FRIENDLY

Perhaps the biggest attraction for RTs, though, is the fact that everything at the Mandalay Bay is also respiratory-friendly. The resort has installed a state-of-the-art ventilation system designed to address many of the concerns people have with secondhand smoke circulating in other Vegas establishments. Combined with all its other attractions, that makes it the perfect Vegas venue for AARC Congress 2014. ■

Photo courtesy of Jason Patrick Ross/Shutterstock.com



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Smoking Cessation for the Older Woman

by Donna D. Gardner, MSHP, RRT, FAARC

Cigarette smoking began to increase after advertising specifically targeting women began in the late 1920s. Some may remember when Lucky Strike launched the campaign, "Reach for a Lucky Instead of a Sweet," which focused on women's concern about weight.[1] The targeted advertising to women continued through World War II when women began to enter the work force. Then in 1968 Philip Morris introduced the first cigarette created especially for women — "Virginia Slims" — with a slogan, "You've Come a Long Way Baby," that stressed glamour and thinness. Today we have RJ Reynolds attracting women's interest with the new Camel No. 9, packaged in a black box with hot pink and teal colors and advertisements reading "Now available in stiletto" and "Dressed to the 9s."[2]

Many of the women who have succumbed to these advertising campaigns are now reaching their later years in life. Currently, 30% of female smokers are postmenopausal, and this population will continue to grow as the population ages.[2] By the year 2020, it is predicted that 3 million women between 50–70 years of age will die prematurely each year due to tobacco smoking.[3] Therefore, it is surprising how little is known about older women and smoking cessation.

The adverse health effects of smoking

The adverse health effects of smoking are extensive and well documented. These include COPD, cancers, cardiovascular disease, osteoporosis, peptic ulcer, decrease in quality of life, decrease in physical function, and interference with the efficacy of drugs.[4] Older women may engage in light smoking, which is associated with a higher risk for heart disease.[5,6] Women smokers are at a greater risk of advanced colorectal neoplasia after as little as 10 pack years of smoking.[7] There is an increased risk of breast cancer among post-menopausal former smokers and current smokers alike.[8] Women who smoke have a 25% greater risk of coronary heart disease.[9]

Smokers over the age of 65 are more likely to be successful at quitting, yet are not encouraged to do so by health care providers.[2,10] This may be due to the presumption that it is too late for an intervention. Older adults with long smoking histories and significant nicotine dependence may have been unsuccessful in previous quit attempts, which can lead to increased doubts among smokers and health care providers about the whole idea of smoking cessation later in life.

However, smoking cessation at any age can reduce excess risk of mortality. Quitting smoking before the age of 40 reduces the risk of smoking-related mortality by an estimated 90%, and those over the age of 65 who quit gain between 1.4–3.7 years of life.[3,11] Stopping smoking has clear and immediate benefits such as decreasing the frequency of respiratory infections, fewer sick days, and an overall improved feeling of well-being.[12] Long-term benefits of smoking cessation can significantly reduce the risk of cardiovascular disease, stroke, and cancers.[12] Unfortunately, studies show women have more difficulty than men when it comes to attempting to quit and staying quit.[13]

The role of respiratory therapists

Respiratory therapists must remember that women's reasons for starting to smoke, continuing to smoke, and trying to quit differ from those of men. Older women smoke fewer cigarettes, and for them smoking is a way to cope with stress and relax. They also smoke for pleasure and when socializing with friends. Older women who smoke are more likely to be postmenopausal, widowed, living alone, and unemployed; therefore, focusing cessation therapy on women-only group sessions offering social support and aimed at minimizing weight gain and managing withdrawal symptoms may be beneficial.[5,14] It is also important to remember that there are subpopulations of women who are unique and, therefore, require tailor-made cessation interventions. Whatever the population, however, evidence demonstrates quit rates increase when a health care provider advises the patient to stop using tobacco.[12] RTs can increase cessation efforts by implementing the "5 A's" in patients 50 and older:

- Ask about tobacco use and **document** tobacco use at every visit.
- Advise every tobacco user to quit.
- Assess the patient's readiness to quit.
- Assist those who are ready to make a quit attempt by prescribing cessation aids.
- Arrange for follow up to help the patient quit successfully.

Barriers to smoking cessation for women

Little research has been devoted to identifying the causes of poor smoking-cessation outcomes in women, and there is a lack of knowledge concerning the relationship between smoking and quality of life and mortality among middle-aged and older women smokers. There are no gender-specific smoking-cessation clinical practice guidelines. However, women face different barriers to smoking cessation that should be addressed. These include hormones, the sensory aspect of smoking, weight gain, and mood.[15]

The female hormone estrogen has been found to worsen the lung damage from smoking.[16] Estrogen increases the rate at which nicotine is broken down in the body, but it does not increase the rate at which the body eliminates these harmful compounds.[17] This increases stress to the lung and causes more damage. This increased metabolism of nicotine may explain why it is much more difficult for women to quit smoking than men.[2,17] Additionally, studies have found female smokers inhale more deeply and hold their breath for a longer period of time, which results in longer exposure to damaging toxins.[18]

The sensory aspects of smoking may have more of an effect on smoking-cessation treatment for women than for men.[15,19] Women are more likely to report greater physical and emotional dependence on cigarettes and also may suffer from depression in the absence of nicotine.[19] Women have common smoking behavior cues; among them, the sight or smell of smoke or preferred brand, the presence of friends who are smoking, and drinking coffee or alcohol after a meal.[15] These cues may actually make it harder to overcome the conditioned behavior than the nicotine addiction itself.[15] Both behavior and nicotine contribute to smoking reinforcement; therefore, smoking-cessation treatments must address both of these areas to result in a successful quit attempt.[13,19]

The respiratory therapist should acknowledge that quitting smoking is often followed by weight gain and recommend physical activities and diet to control weight during smoking cessation. Women gain more weight than men during smoking-cessation attempts. Those individuals age 56–64 gain more weight than younger individuals;[20] the average weight gain is 10 pounds. Focusing on energy intake, energy expenditure, or the use of medications can help address cessation-related weight gain.[6]

As we know, poor eating habits end with more weight gained. Therefore, to improve smoking-cessation outcomes it is also important to have a good quality diet. Withdrawal symptoms may be worse for women who are dieting and attempting to quit smoking at the same time.[6]

Negative mood and personality may predict smoking relapse. Women report feeling depressed, anxious, angry, and stressed. In one study, marital or partner conflict and financial difficulties were associated with midlife nicotine dependence in women.[21]

To help women be successful with cessation, new interventions are needed to affect mood. These can include exercise and pharmacotherapies. For example, yoga intervention results in improved mood, perceived health, and overall well-being.[22] Yoga has been evaluated as a smoking-cessation intervention and many women are receptive to using exercise with smoking cessation.[19,22]

Tools to facilitate smoking cessation

Cessation strategies designed for women need to consider the broad social context in which women smoke. For example, women smoke during coffee breaks or after meals with their friends. Smoking is a social event. Therefore, it may be best to offer women smoking cessa-

tion in settings that involve close informal personal and small group interactions. Studies have demonstrated women are more successful with nicotine replacement therapies coupled with supportive interventions.[19]

At any age, however, there are some people who, for a number of reasons (heavy dependence, stressful life), are not willing to quit. Therefore, the RT or certified tobacco treatment specialist may want to emphasize modifying the smoking behavior by using an alternative source of nicotine through nicotine replacement therapies.[12] No single approach to smoking cessation is going to work for every woman.[12] Adults 50 and over have benefited from tobacco-focused counseling interventions, physician advice, buddy system support groups, age-tailored self-help materials, and telephone counseling.[12]

Addiction dependence can be determined by the Heavy Smoking Index, which is a derivative of the Fagerstrom test for nicotine dependence.[23] Both of these questionnaires assess the number of minutes after waking up before smoking the first cigarette of the day, the number of cigarettes smoked per day, the cigarette the person would most likely hate to give up, and the difficulty of not smoking in a "no smoking" area. The higher the score, the more nicotine dependent the person.[23] (The Fagerstrom questionnaire is available at http://nicotinefreedom.com/articles/fagerstrom/.)

The Transtheoretical Model of Behavior Change has guided many smoking-cessation support programs. This model can be useful in gauging a woman's readiness to quit smoking and also to tailor cessation messaging. The model consists of stages of readiness to quit smoking and processes of change, such as self-monitoring and thought management.[24] Specifics of the stages and recommended strategies are listed in Table 1.

Pharmacotherapy for smoking cessation

Nicotine replacement therapy (NRT) is designed to provide controlled amounts of nicotine in a form that does not contain the thousands of constituents of tobacco smoke, many of which are responsible for smok-

TABLE 1.
Application of the Transtheoretical Model of Behavior Change to Smoking Cessation in Women

STAGES OF READINESS FOR CHANGE	PROCESSES OF CHANGE
PRECONTEMPLATION Not thinking about stopping	**Identify** education and awareness programs that are promoting information on the benefits of quitting. Identify community supports that can encourage women who are not thinking about quitting smoking to start thinking about it.
CONTEMPLATION Thinking about the pros and cons of quitting	**Address** weight gain and healthy eating post quit date. Consider wellness programs for smokers that precede the actual cessation program. Help women develop new eating habits and increase activity levels. Promote smoking cessation and offer support.
PREPARATION AND ACTION Setting a quit date and actually quitting	**Offer** a cessation program, stop-smoking medications, and support.
MAINTENANCE Quitting for good	**Identify** fitness, nutrition, and weight maintenance programs in the community to assist with maintaining smoking abstinence. Collaborate with them on fitness and nutrition.

ing-related diseases.[25] The various NRT products — nicotine polacrilex (gum), transdermal patches, nasal sprays, and inhalers — all administer nicotine.

Topiramate (TOP) blocks glutamate receptors and facilitates gamma-iminobutyric acid (GABA) neurotransmission, which in turn facilitates smoking cessation.[26] Combination therapy that includes TOP and the NRT patch is useful for cessation and reducing the weight gain associated with smoking cessation.[21] While studies have questioned the effectiveness of NRT in women, bupropion SR or NRT may be the best choices as they have been shown to delay weight gain after quitting.[26] While all smokers should be encouraged to use NRT and non-nicotine treatment, more research focused on women and smoking is needed.[19]

Insurance coverage

According to the American Lung Association, Medicare covers the nicotine nasal spray, nicotine inhaler, bupropion, and varenicline, as well as individual counseling for two quit attempts per year.[2] The Affordable Care Act (ACA) adds a prevention and wellness visit with the member's doctor and closes the Medicare Part D gap, making medications for tobacco cessation more affordable.[2]

As of Jan. 1, 2014, ACA section 2502 also removed smoking-cessation medications from the "optional" category of Medicaid-covered outpatient drugs.[2] This means the drugs are **not** optional and these prescription tobacco-cessation medications are included. State health insurance exchanges will cover the unemployed, self-employed, and those not provided with employer-sponsored insurance in 2014.[2]

Insurance benefits that include tobacco-cessation treatments increase availability of tobacco-cessation interventions and result in successful quitters. To find out which pharmacotherapies, types of counseling, and number of quit attempts are covered by the state insurance exchanges in each state, visit the American Lung Association State Tobacco Cessation Coverage Database at www.lungusa2.org/cessation2/.

More research needed

Women over age 65 may be less likely to receive smoking-cessation advice, but the good news is that Medicare is now including benefits for tobacco-cessation counseling and prescription medications for tobacco dependence through Medicare Part D.[2] Still, effective tobacco-cessation programs for women in this age group are scarce, and future research focused on specific interventions to promote tobacco abstinence among older women is sorely needed. ■

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About the Author

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Industry Update

Featuring information on products and equipment from manufacturers

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

— 2014 —

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.

A SALUTE to Our CORPORATE PARTNERS

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.

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Industry Watch

Santhera Pharmaceuticals reports DMD study outcomes

According to Santhera Pharmaceuticals, its Phase III DELOS study of orally administered Catena®/Raxone® in patients with Duchenne muscular dystrophy (DMD) has achieved its primary objective of delaying the loss of respiratory function compared to placebo. The double-blind, placebo-controlled study involved 65 DMD patients age 10–18 who were not using concomitant corticosteroids. Santhera reports the study met the primary endpoint, which was the difference between Catena/Raxone and placebo in the change in peak expiratory flow from baseline to week 52.

Welch Allyn receives award, names VP

Welch Allyn received the 2014 Pioneer Award from sales productivity solutions company SAVO at the firm's annual Sales Enablement Summit in Chicago. The award recognizes companies that demonstrate vision, leadership, and stewardship in sales enablement.

Janie Goddard

In other news, the company announced that Janie Goddard has joined the company as executive vice president of strategic business units and marketing. Goddard will oversee the company's four strategic business units and serve as its corporate marketing leader.

Propeller Health receives FDA 510(k) clearance for digital therapeutic

Propeller Health has received FDA 510(k) clearance to market the latest generation of its Propeller platform. A digital therapeutic, Propeller consists of a novel combination of sensors, mobile apps, and analytics aimed at encouraging adherence to maintenance therapy and remotely monitoring use of rescue medications in people with respiratory conditions. Under the new clearance, the company reports that the Propeller system can now be used to help predict exacerbations in patients with asthma and COPD. By comparing metered-dose inhaler use to a patient's baseline and the clinical guidelines, Propeller alerts care teams when patients do not have their disease under control or may be experiencing worsening symptoms that could lead to an exacerbation.

Kimberly-Clark announces name of health care spin off

According to Kimberly-Clark Corporation, the Form 10 Registration Statement for its previously announced plan to spin off its health care business has been filed with the Securities and Exchange Commission. The new company will be called Halyard Health Inc. and will be headquartered in Alpharetta, GA. Kimberly-Clark Chairman and CEO Thomas J. Falk said, "When the spin-off is completed, Halyard Health will be able to take advantage of its leading positions in several key categories to drive its performance and pursue its own opportunities. This move will also allow Kimberly-Clark to further sharpen our focus on growing our consumer and K-C Professional brands around the world."

Electromed enters partnership to promote self-care book for kids

Electromed Inc. has joined Healthy Choices, Happy Kids in the launch of its new children's book. The book explores choices and consequences and is expected to help parents and children understand the best way to deal with the many important self-care issues they will encounter, even when the results of those issues may not appear for years. Electromed reports, as part of the launch, it will include a free copy of the book with each SmartVest shipment for patients age 10 and under while supplies last. Additionally, Electromed field representatives will donate copies at cystic fibrosis centers, select pediatric pulmonology clinics, and family education days throughout the country.

BI IPF drug, other meds, highlighted at ATS

According to Boehringer Ingelheim, key data from the Phase 3 Inpulsis™ trials for nintedanib in the treatment of idiopathic pulmonary fibrosis (IPF) were presented at the American Thoracic Society meeting in May. "We are particularly excited about our research on nintedanib for IPF, which is a rare, fatal disease with a significant unmet medical need," says Tunde Otulana, MD, senior vice president, Clinical Development and Medical Affairs at Boehringer Ingelheim. Also presented at the meeting were Phase 3 data for the fixed-dose combination tiotropium and olodaterol for COPD, Spiriva® HandiHaler®, and investigational treatments for asthma and COPD.

GSK, Theravance COPD drug now available in U.S.

According to GlaxoSmithKline and Theravance Inc., Anoro™ Ellipta®, their once-daily product that combines two long-acting bronchodilators in a single inhaler for the maintenance treatment of COPD, is now available to retail pharmacies in the United States. "Anoro Ellipta is an important treatment option for appropriate patients with COPD, and we are proud to make it available in the U.S," says Jorge Bartolome, senior vice president of the GSK Respiratory Business Unit in the United States.

In Ovations announces new director/VP

In Ovations Holdings has appointed Mel Ehrlich, PhD, as a director and vice-president of technology. Dr. Ehrlich is CEO of Nano Biomed Inc., a company that has licensed patented nanoparticle technologies involved in the delivery of nitric oxide. He is also CEO of Cytest Labs Inc., which develops optical scanners using ultra-violet light and a pattern-recognition computer to measure and analyze human body cell parameters. "Dr. Ehrlich is a brilliant inventor in the health care space as well as the developer of energy-saving devices," says In Ovations President Rosendo Alvarez, III. "He will provide the knowledge and expertise that we need to pursue our planned businesses."

Ayasdi enters partnership to ensure better asthma outcomes

Ayasdi has partnered with Innovative Medicines Initiative to find new insights to ensure better outcomes for patients with severe asthma. Key members of the Unbiased Biomarkers for the Prediction of Respiratory Disease Outcomes initiative consortium — including 20 academic institutions, 10 biopharma industry partners, six patient organizations, and four other organizations — will now have access to the Ayasdi Cure application, which merges hundreds of algorithms with topological data analysis and obviates the need for queries or coding.

Theravance reports data on VIBATIV

Theravance Inc. presented new data from multiple studies of VIBATIV® (telavancin) at the 24th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID). The data confirm the *in vitro* potency of VIBATIV and its efficacy in patients with complicated skin and skin structure infections, including methicillin-resistant *Staphylococcus aureus*. "The range of important study results presented at the ECCMID conference bolsters our belief that VIBATIV is an essential tool in the antibiotic arsenal of physicians and health care practitioners," says Frank Pasqualone, senior vice president of operations at Theravance.

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

RC Currents

IN THE NEWS

TSRC, AARC Fight Deregulation Concerns in Texas

The AARC is assisting the Texas Society for Respiratory Care (TSRC) as they begin a fight to retain licensure in the state of Texas. A report from the Texas Sunset Advisory Commission has made a recommendation to discontinue or de-license 19 professions and disciplines, respiratory care practitioners among them. The AARC, TSRC, National Board for Respiratory Care, the COPD Foundation, and the Alpha-1 Association have all sent letters of support to the legislature, asking for reconsideration in this matter.

"We could not say it any better than the reporter in Wichita Falls does. 'People who style your hair are not coming under scrutiny, yet the people who run the ventilators that keep you alive are? It doesn't make sense,'" says AARC President George Gaebler, MSEd, RRT, FAARC. "We're ready to help our colleagues in Texas wherever they need us. This denigration of the public safety has to stop."

At press time, hearings were getting underway. On June 24, AARC leadership went to the Texas state capitol to fight for removal of a recommendation to de-license respiratory therapists. Executive Director Thomas J. Kallstrom, MBA, RRT, FAARC; Associate Executive Director-Education Shawna Strickland, PhD, RRT-NPS, FAARC; and Director of Government Affairs Cheryl West, MHA, were on hand to address the commission and support the TSRC as they make their case for the essential work of the respiratory therapist.

Texas is the latest in the list of states for which licensure is coming under scrutiny. "We are vigilant in keeping watch on these," says West. "This is where we work — protecting the patients who aren't in a position to protect themselves."

Check the AARC website, www.aarc.org, for the latest news. ■

Respiratory Care, the Breath of Life

RESPIRATORY CARE WEEK 2014

RC Week, celebrated Oct. 19–25, is that special time of year when you and your respiratory care colleagues are honored for your contributions. This year's theme, "Respiratory Care, the Breath of Life," reflects what you do every day — give the breath of life to your patients.

Use this week to share your enthusiasm in your chosen profession by planning events for recognition, fun, and awareness with your RC team, your patients, your community, local students, and more. As the official sponsor for Respiratory Care Week, the AARC provides a great website at www.AARC.org/rcweek. Make it your favorite online destination for event ideas, planning tips, photo sharing, and more.

Visit the AARC's partner, Jim Coleman Ltd., on or after July 23 at www.aarc.org/rcstore to find our 2014 RC Week store loaded with official themed items for your celebration. ■

RESPIRATORY CARE
THE BREATH OF LIFE

Enter the 2014 AARC Photo Contest

AARC Times is looking for creative AARC members to enter our annual AARC Photo Contest. Finalists will receive a free one-year membership renewal and have their photo entered into our Photo-of-the-Year Contest with the chance of it being chosen and featured on the cover of *AARC Times*. For information on how to enter, select the *AARC Times* icon on www.AARC.org and click on the "Photo-of-the-Year Contest" link. Deadline to submit photos is **Nov. 14, 2014.** ■

Military RTs Can Fly Free to Interview

Members of the AARC's Military Roundtable learned some great news. Thanks to an organization that supports our veterans, active-duty military personnel who are getting ready to transition back into the civilian world are now getting some welcomed help when it comes to finding a job.

In order to make it easier for more employers to hire these military vets, Hire our Heroes (HOH) is partnering with the Armed Forces Foundation to provide free round-trip airfare to any transitioning vet who would like to go on a job interview anywhere in the country.

If you are a military RT who's getting ready to transition back into civilian life, go to the HOH's Transitioning Veterans Fly Free for Job Interviews webpage (http://hireourheroes.org/free-travel/#sthash.wEY2uhbT.dpbs) for more information. ■

"NEW MEMBERS" COLUMN NOW ONLINE

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

TRANSITIONS

Harold Oglesby, RRT, has been named to the board of advisors for the Physician-Patient Alliance for Health & Safety. Oglesby, who serves as manager of the Center for Pulmonary Health at Candler Hospital and St. Joseph's/Candler Health System in Savannah, GA, was appointed in part due to the role he played in helping his hospital adopt mandatory capnography monitoring on all patients receiving patient-controlled analgesia (PCA), a move that has resulted in "opioid event free" PCA since 2004.

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

Jerry Bridgers, CRT, passed away in mid-June, and our profession lost a staunch supporter. An AARC member since 1963, he regularly served on AARC committees and was a longtime member of the House of Delegates from Mississippi, where he served as director of biomedical services at the University of Mississippi Medical Center in Jackson until his retirement. He was also an active member of the AARC Political Advocacy Contact Team (PACT) and made many trips to Washington, DC, to lobby with the PACT on behalf of our profession and our patients. "Jerry Bridgers was a huge rock in the foundation of the profession of respiratory care," says AARC President George Gaebler, MSEd, RRT, FAARC. "He lived his life with a zest generated by his passion and pride for being a respiratory therapist, and his life was dedicated to our profession." He received Life Membership in the AARC in 2000.

Rhinovirus Has Help in Increasing Seasonal Asthma Symptoms

Physicians have long believed viruses were responsible for the increase in asthma symptoms seen in children during the fall months. A study funded by the National Institute of Allergy and Infectious Diseases suggests the culprit is really a combination of viral and bacterial infections.

Researchers from the Asthma and Allergic Diseases Cooperative Research Center at the University of Wisconsin tested nasal mucus from 308 children with and without asthma for the presence of rhinoviruses and three common bacterial pathogens. They collected samples from the children with the help of their parents on a weekly basis for five weeks. Results showed rhinovirus infections typically coincided with or preceded bacterial infections. The presence of rhinovirus in nasal mucus increased the likelihood of detecting bacteria in the same sample or the following week's sample. In contrast, the presence of bacteria did not increase the chance of viral detection the following week.

From there, the investigators looked at potential links between bacterial infection and the severity of asthma and cold symptoms. Children reported more symptoms during weeks when rhinovirus or the bacterium *Streptococcus pneumoniae* was detected in nasal mucus. Symptoms tended to be even more severe during weeks when both pathogens were present. Among the 166 children in the study who had asthma, attacks were most frequent during weeks when both rhinovirus and *S. pneumonia* were present. Detection of rhinovirus together with another bacterium, *Moraxella catarrhalis*, was also associated with higher numbers of colds and asthma attacks than detection of rhinovirus alone.

Overall, the scientists found that only 11% of the 291 illnesses recorded during the study were linked to the presence of rhinovirus alone. Rhinovirus and bacterial infections occurred together during approximately 50% of illnesses, while 30% were associated with bacterial infection alone. The study was published in the May edition of the *Journal of Allergy and Clinical Immunology*. ■

As Seen on *AARConnect*

AARConnection… maximizing your membership

As an AARC member, have you looked at what your colleagues are blogging about on *AARConnect*, the Association's social media site? You might find an interesting tidbit you can use in your area of respiratory care or maybe answer a question someone has asked. Here is an example of a discussion we found on *AARConnect* while preparing this edition of the magazine.

Has anyone encountered The Joint Commission and were told they need to reprocess sterilized bronchoscopes after seven days? I've been researching the Internet and have found nothing concrete.

John Kimble
Jackson Memorial Hospital
Miami, FL

In theory, this sounds like a good infection prevention idea. In practice, is there any research related to scope storage and the growth of infectious agents? Why is seven days the magic number? What if my storage case only holds one scope and is not opened unless the scope is used?

Mark Shiner
University of Missouri
Columbia, MO

While your argument is a good one, the bottom line is… this is an issue and a very significant issue at that. The national recommendations are not much help.

1. *The Association of periOperative Registered Nurses (AORN) advises reprocessing scopes before use if unused for more than five days.*
2. *The Multisociety Guideline from the American Society for Gastrointestinal Endoscopy and Society for Healthcare Epidemiology of America says the issue is unresolved and data is insufficient, adding that reuse within 10 to 14 days of high-level disinfection appears safe.*
3. *The Society of Gastroenterology Nurses and Associates (SGNA) standards, revised in 2012, refer to the Multisociety Guideline, saying the issue "warrants further data and research."*

Our organization chose seven as a happy medium. Our hospital ID service audits on a regular basis. I would recommend that anyone establishing this process use item 1 and 2 mentioned above. These two opinion statements seem to be what TJC is basing its opinion on. We found five days to be unworkable because of labor issues.... We monitor the scope through all of the reprocessing steps from bedside to cabinet. The monitoring system does not say what the contaminant is, just that the item is contaminated. The numbers became frightening at over nine days of hang time in what we consider to be a secured scope storage process. Last, but definitely not least, TJC is looking at all phases of the reprocessing flow from immediately post procedure to storage and reprocessing. Good luck everyone.

James Canfield
El Camino Hospital
Vallejo, CA

Thank you very much for this post. Your citations are very helpful and consistent with what I found in some research this weekend. It looks like "to err on the side of caution" is the way to go here.

Mark Shiner
University of Missouri
Columbia, MO

RT Student Members:

AARC Times is always looking for good stories from AARC student members that relate special experiences and give the RT student perspective on the respiratory care profession they have chosen as a career.

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

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

ADHD Treatment May Help Kids Say No to Smoking

In the largest meta-analysis conducted to date on cigarette smoking and attention deficient/hyperactivity disorder (ADHD) treatment, Duke Medicine investigators find treatment for ADHD may decrease the risk for smoking.

The research involved 14 longitudinal studies that included 2,360 individuals with ADHD. Some of the studies used nicotine dependence to measure smoking behaviors, but since nicotine dependence may not be found in adolescents who recently started smoking, the researchers expanded their criteria to include smoking frequency and whether participants currently smoked.

The analysis revealed a significant association between stimulant treatment and lower smoking rates. The effect was larger in those with more severe ADHD and when participants took stimulant medications continuously. "This study may debunk the perception that stimulants will increase one's risk for smoking," study author Scott Kollins, PhD, was quoted as saying. "It gives us more confidence when we talk with parents to reassure them that consistent ADHD treatment won't increase their children's risk of smoking, and in fact, may actually do the opposite." The research appeared online in *Pediatrics* on May 12. ■

Strange But True...

Pucker up: Researchers from Louisiana State University have found that drinking Montmorency tart cherry juice morning and night for two weeks can help increase sleep time by nearly 90 minutes among older adults with insomnia. Turns out the cherries are a natural source of melatonin, a hormone that helps regulate the sleep-wake cycle.

Oxygen tracker: Investigators from MIT have developed an injectable device that reveals oxygen levels in the body over several weeks. Since cancer cells are most vulnerable in low oxygen environments, the hope is physicians can use that information to determine appropriate radiation doses and monitor whether treatments are having the desired effect.

Gender bias: Would animal research be better off with only female investigators? According to Canadian researchers at McGill University, the answer may be yes. They found stress levels in lab mice increased markedly when male researchers handled the animals, with the resulting increase in stress causing the mice to respond differently to behavioral tests. The fear is that male researchers might be skewing the results of studies due to the increased stress they invoke in the animals.

Herbal remedy? According to a recent study out of Georgia State University, Korean red ginseng extract may have a role to play in treating or even preventing influenza and RSV. The herbal medicine improved the survival of human lung epithelial cells infected with influenza and RSV and inhibited the RSV virus from replicating in the body. ■

Beating the clock: A lung transplant patient at Loyola University Medical Center may be one for the record books. He received his transplant just six days after going on the transplant list and went home five days following the surgery. That compares to a nationwide average of 4.6 months on the list and 15 days in the hospital.

Readmissions: It's Not Just About Quality

Penalties for excessive 30-day readmissions for some diagnoses (including COPD beginning in October) were instituted to improve the quality of care patients receive while in the hospital. However, hospital quality of care doesn't tell the whole story when it comes to determining which patients will end up back in a hospital bed within a month, report Henry Ford Health System researchers publishing in the May edition of *Health Affairs*.

Their study finds factors like the level of poverty in a neighborhood, living alone, and age make a big difference, too. The research was conducted among 4,646 patients who were discharged from the hospital during 2010. Using in-house data to determine demographic data such as age, sex, race, marital status, street address, and diagnosis, the researchers mapped patients' addresses to census data to determine their neighborhood socioeconomic factors, including percentage of families with incomes below the federal poverty level, median household income, and percentage of the population older than 25 without a high school diploma.

The mean age of the patients was 77, and black patients made up the majority of the study group. On average, patients lived in neighborhoods where nearly 30% of people age 25 and older lacked a high school diploma, 17% of households had incomes below the poverty level, and the median household income was about $38,000. Eighty percent of the patients had no 30-day readmissions during the year-long study, while 5% had multiple readmissions. In addition to finding that patients living in high-poverty neighborhoods had a greater chance of readmission, the study showed:

- Married patients were significantly less likely to be readmitted, suggesting they had more social support than unmarried patients.
- Older patients and those who were male were more likely to have at least one readmission compared to younger patients and females.
- Patients discharged with congestive heart failure and acute myocardial infarction and those with certain types of diseases, such as end-stage liver disease, acute renal failure, diabetes, and malnutrition, were at significantly higher risk of being readmitted than patients without those conditions.

The researchers believe these results suggest a need for CMS to revisit its Hospital Readmissions Reduction Program with an eye toward taking demographic infor mation and socioeconomic disparities into account. "Our findings underscore the importance of reaching consensus on this issue and, if appropriate, changing the risk-adjustment models, related penalties, or both," study author Jianhui Hu was quoted as saying. ■

FIM Predicts Readmissions from Rehab

Could a standard test required for patients within 72 hours of admission to a rehabilitation facility help determine which patients may be readmitted within 30 days? Yes, say researchers from Johns Hopkins who looked at Functional Independence Measure (FIM) scores for 9,405 patients admitted to an inpatient rehab facility directly from an acute care hospital between July 2006 and December 2012.

Breaking the FIM scores into low, medium, and high categories, the researchers found those who scored low on the functionality test were two to three times more likely to be readmitted to the hospital within 30 days than those with high scores. The finding held true even after the results were adjusted for potential confounders, such as age, gender, and even severity of illness.

Further investigation showed that people with medical disorders were the most likely to head back to the hospital within a month. The study was published in the May edition of the *Journal of Hospital Medicine*. ■

Evidence Mounts Against Safety of E-Cigarettes

According to researchers from RTI International who used a non-human model to study the effects of e-cigarette vapors on the lungs of human adolescents, these vapors consist of small particles containing chemicals that may cause or worsen lung diseases such as asthma and bronchitis.

The investigators developed an e-cigarette vapor collection and sampling system equipped with a custom apparatus to mimic the conditions found inside the human mouth and respiratory tract. The system was attached to an e-cigarette to uniformly generate and capture the vapor emissions and was flexible enough to mimic realistic smoking patterns among adolescents and adults. The study found up to 40% of particles emitted by an e-cigarette can deposit in the deepest area of a youth's lungs, where they can irritate the airways or worsen pre-existing respiratory conditions.

"Our soon-to-be published data indicate that we need to do more research to understand how different liquids and device features alter particles and thus impact respiratory health," study author Jonathan Thornburg, PhD, was quoted as saying. "What we learned from this first study will allow the design of scientifically defensible and comparable studies to further the understanding of the effects of e-cigarettes on a user's health." Last April the AARC published a position statement on electronic cigarettes, which can be found at www.aarc.org/resources/position_statements/statement_index.asp. ■

Wheeze Before Age Six Has Lasting Effects

Canadian investigators who looked at nearly 25 years' worth of research involving young children with recurring wheeze have concluded that early childhood wheeze increases the risk for lung function decline by age six. In many cases, damage to the lungs attributed to wheeze persists despite the disappearance of wheeze. Children whose wheeze is severe enough to require a trip to the ER are at particular risk for lung function decline at age six.

"Repeated wheezing is most often caused by asthma. However, the diagnosis is challenging because before six years of age, children are too young to go through the standard confirmatory lung-function test — spirometry," study author Dr. Francine M. Ducharme was quoted as saying. "Yet the period before six years of age is clearly a period of increased vulnerability and is probably the best time to intervene — and possibly — prevent lasting damage." The report appeared in the May 2 edition of *Lancet*. ■

Does Asthma Alone Increase the Risk for Bone Loss?

The connection between corticosteroid use for asthma and bone loss has been well established, but researchers publishing in the May 1 edition of the *Annals of Allergy, Asthma & Immunology* have for the first time linked bone loss directly to the condition.

South Korean investigators looked at more than 7,000 patients, 433 of whom had airway hyperresponsiveness (AHR) or asthma. Lumber spine and femur bone density were significantly lower in those with AHR or asthma, regardless of whether they used corticosteroids.

"It is difficult to pinpoint the cause of bone loss in this subset of patients," John Oppenheimer, MD, associate editor of the journal was quoted as saying. "Reasons can include corticosteroid use, low levels of vitamin D, or even race. This research has unveiled findings that need to be further studied." ■

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Calendar of Events

AARC & State Society Programs

July 24–26 Savannah, Georgia
Georgia Society for Respiratory Care's Summer CE Meeting
Contact: Megan Haight, megan@gasrc.org, www.gasrc.org

July 29 Bedford Heights, Ohio
Ohio Society for Respiratory Care's State Meeting
Contact: jgh578@aol.com

July 30 – August 1 Biloxi, Mississippi
TriState Respiratory Care Conference's 43rd Annual Conference
Contact: www.tsrcc.net

September 16 Rapid City, South Dakota
South Dakota State Respiratory Conference
Contact: Sandy Brown, (605) 328-2436

September 19 Fredericksburg, Virginia
Virginia Society of Respiratory Care's Neonatal/Pediatric Conference
Contact: vsrcneopeds@icloud.com

October 1–3 Hot Springs National Park, Arkansas
43rd Annual Arkansas Society for Respiratory Care State Meeting
Contact: John Lindsey, john.lindsey@mercy.net

October 9 Bloomington, Indiana
Indiana Society Seminar
Contact: pingle@in-isrc.org, (317) 962-5058

December 9–12 (Tuesday–Friday) Las Vegas, Nevada
AARC Congress 2014
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

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Submissions for the next available issue are due Aug. 19.

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

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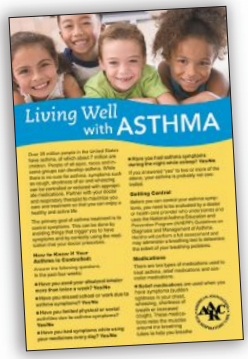

ASTHMA
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Bookmark IQ Card: PE0007

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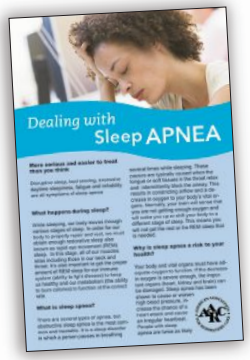

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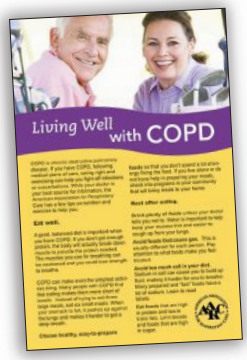
Bookmark IQ Card: PE0008



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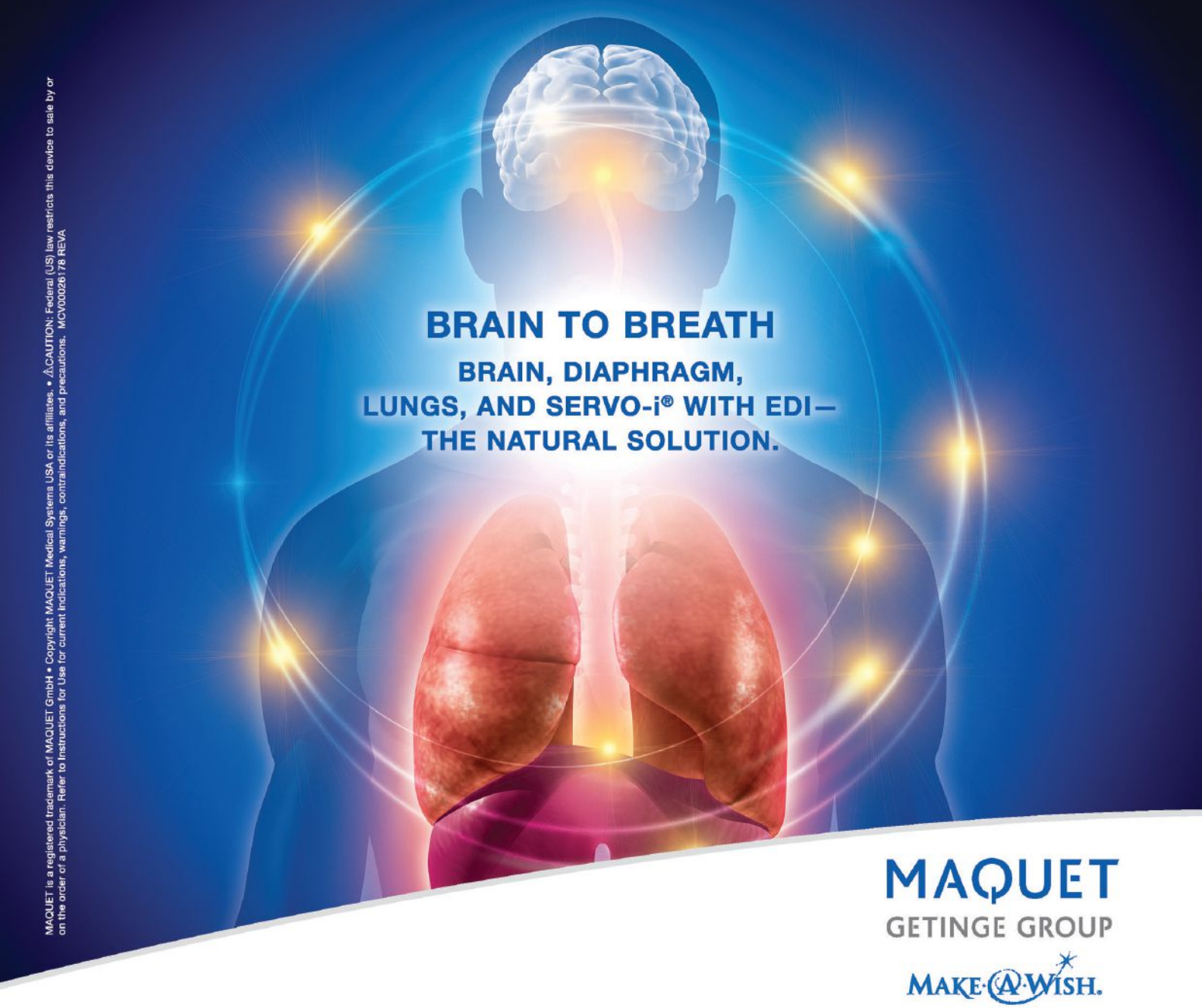

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1. Piquilloud L, Vignaux L, Bialais E, et al. Neurally adjusted ventilatory assist improves patient-ventilator interaction. *Intensive Care Med.* 2011 Feb;37(2):263-71.
2. Sassoon CSh, Caiozzo VJ. Bench-to-bedside review: Diaphragm muscle function in disuse and acute high-dose corticosteroid treatment. *Critical Care.* 2009;13(5):221.
3. de la Oliva P, Schüffelmann C, Gómez-Zamora A, et al. Asynchrony, neural drive, ventilatory variability and comfort: NAVA versus pressure support in pediatric patients. *Intensive Care Med.* 2012 May;38(5):838-46.

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