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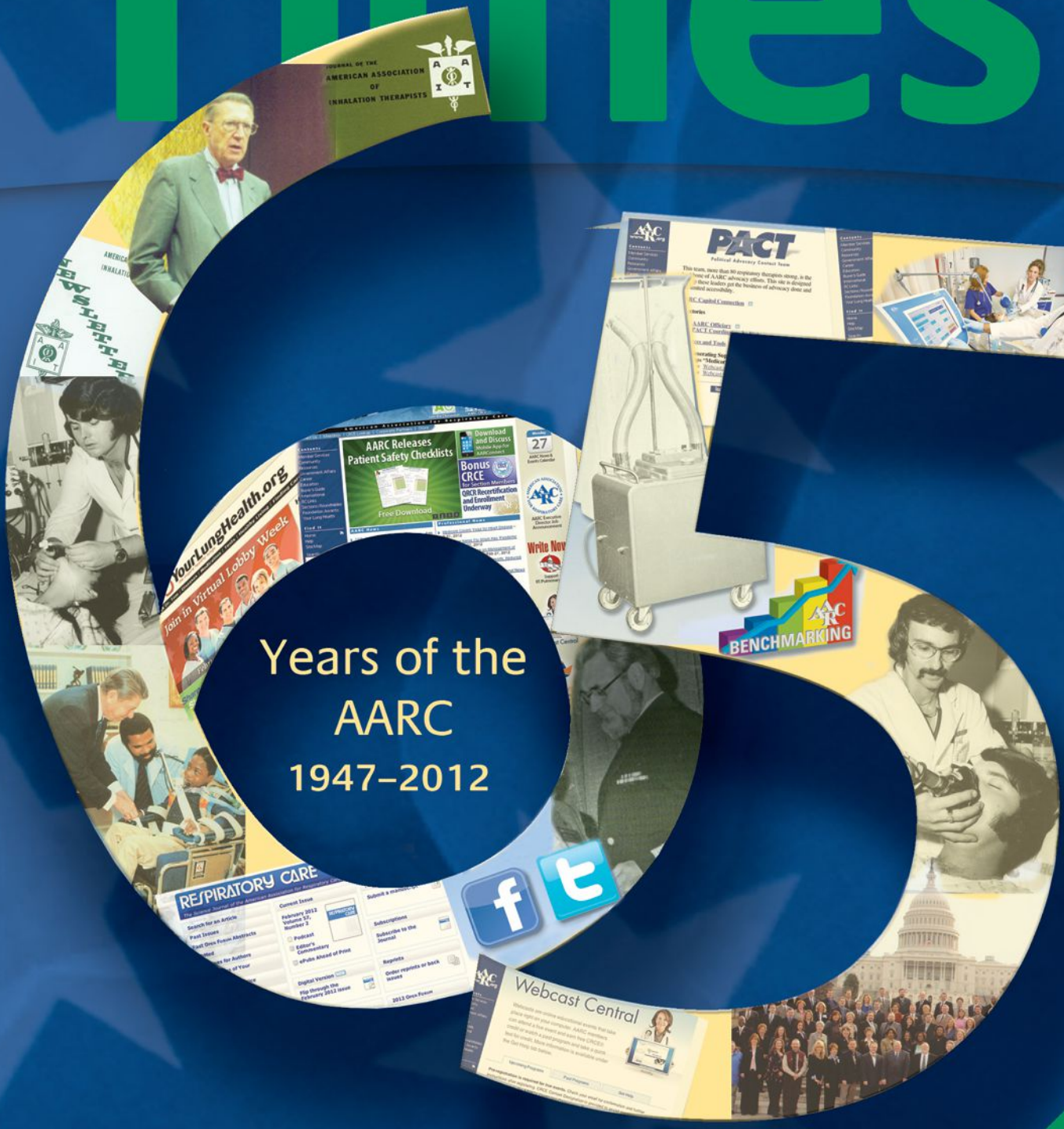

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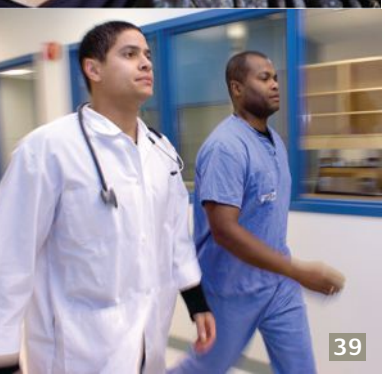
Table of Contents

April 2012
Volume 36, Issue 4



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

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

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

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

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

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

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2 Stoelting R and Overdyk F. Anesthesia Patient Safety Foundation, Conclusions and Recommendations from June 08, 2011 Conference on Electronic Monitoring Strategies to Detect Drug-Induced Postoperative Respiratory Depression. Accessed August 25, 2011 at http://www.apsf.org/announcements.php?id=7.

3 Standards for Basic Anesthetic Monitoring. American Society of Anesthesiologists. Accessed 6/20/11 at http://www.asahq.org/For-Healthcare-Professionals/~/media/For%20Members/documents/Standards%20Guidelines%20Stmts/Basic%20Anesthetic%20Monitoring%202005.ashx

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Understanding Alzheimer's Disease and How the Respiratory Therapist Can Positively Impact Patient Care

by Thomas J. Kallstrom, MBA, RRT, FAARC

In 2012 there are more than 5.4 million Americans living with Alzheimer's disease. Even more startling is the fact that if you are over the age of 65, your chances of having the disease are one in eight; and once over 85, nearly half have the disease, according to the Alzheimer's Association.[1] This trend is likely to broaden as the baby boomer generation ages.

The symptoms of Alzheimer's disease present often as subtle and sometimes almost unnoticeable changes. It could be something as simple as confusion caused when looking for an item that you have carried in your pocket for years, perhaps a missing checkbook or a set of car keys. This is exactly what happened to my father as he entered those difficult early years of the disease. In fact, when he started to loose familiar items he blamed me or my brothers or sister for taking them from him. Although none of us lived within 200 miles of him, he still insisted that we took them. These are classic presentations of a person who has Alzheimer's disease.

Warning signs

According to the Alzheimer's Association there are 10 important warning signs or symptoms of the disease that should raise a red flag.[2] These include:

- Memory loss that disrupts daily life
- Challenges in planning or solving problems
- Difficulty in completing familiar tasks at home, work, or at leisure
- Confusion with time or place
- Trouble understanding images or spatial relationships
- Problems with words in speaking or writing
- Misplacing things and inability to retrace steps
- Decreased or poor judgment
- Withdrawal from work or social activities
- Changes in mood or personality.

The Alzheimer's Association recommends that as these signs present, it should trigger a more thorough evaluation by a qualified clinician.

Even more concerning is the patient who presents with Alzheimer's disease and who also has comorbidities such as pulmonary disease. In fact, according to the Alzheimer's Association, 95% of all elderly fee-for-service Medicare beneficiaries with Alzheimer's disease and other dementias (AD/D) had at least one other chronic medical condition; only 5% had no other chronic medical conditions. Of those with AD/D, 29% had coronary heart disease (CHD); 28% had congestive heart failure (CHF); 23% had diabetes, and 17% had COPD.[3] They go on to state that the combination of AD/D and these four coexisting medical conditions (CHD, CHF, diabetes, and COPD) consistently increased hospital stays and Medicare costs for those age 65+ and for those in the age subgroups 65–74, 75–84, and 85+. Certainly the cost of care for this patient population is considerable.

Home safety

Once diagnosed with Alzheimer's disease and chronic lung disease, other challenges present themselves, including home safety. The National Institutes of Health has recommended that when it comes to safety, the caregiver should always be thinking about prevention of hazardous situations and that a safety check of the home is especially important.[4] This can become even more important if the patient is on oxygen therapy. Of course, the rules of safety when oxygen is used differ little in a home

about the author...

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

with an Alzheimer's patient. The key thing to remember is to be sure that the patient is wearing the oxygen as prescribed by their clinician. This will likely take more oversight by a caregiver. Also, oxygen tubing always presents a tripping concern in the home. While a portable oxygen concentrator may minimize this, the patient may have a stationary unit with up to 50 feet of cord. Care must be taken to ensure the tubing is not an obstacle. Furthermore, smoking should not be allowed in or around a patient on oxygen; and, certainly, the patient should never be allowed access to tobacco or matches.

The National Institutes of Health has a complete list of other home safety tips that you should review,[5] but there are particular items on their list that are especially pertinent to patients with COPD and Alzheimer's disease. These recommendations include the following:

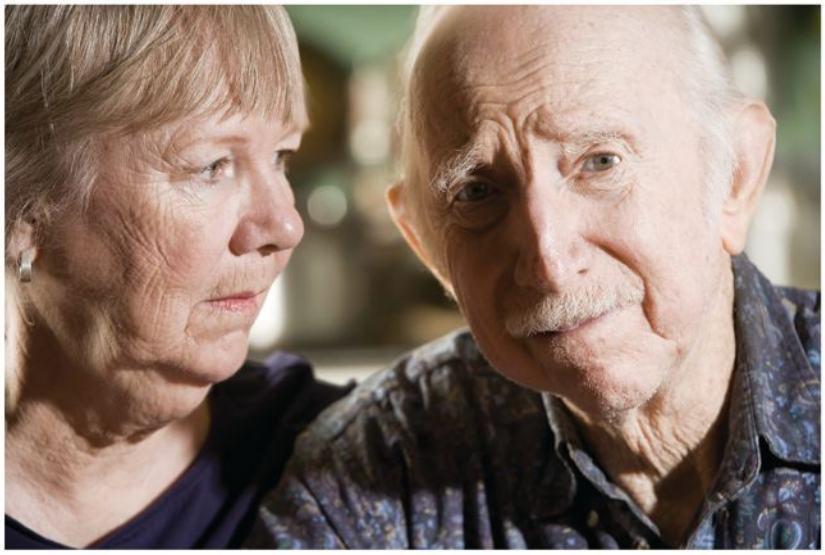
- Display emergency numbers and your home address near all telephones.
- Install smoke alarms and carbon monoxide detectors in or near the kitchen and all sleeping areas. Check their functioning and batteries frequently.
- Avoid the use of flammable and volatile compounds near gas appliances. Do not store these materials in an area where a gas pilot light is used. This is especially true with the patient on oxygen.
- Keep all medications (prescription and over-the-counter) locked. Each bottle of prescription medicine should be clearly labeled with the person's name, name of the drug, drug strength, dosage frequency, and expiration date. Child-resistant caps are available if needed.
- Remove matches, lighters, ashtrays, cigarettes, and other means of smoking from view. This reduces fire hazards; and with these reminders out of sight, the person may forget the desire to smoke.

RTs can impact safety and quality of life for these patients

The population of patients who fall into the age group that COPD and Alzheimer's disease often present will continue to grow in the next few decades. As respiratory care professionals, we are obligated to ensure that our patients and families understand the best management of care — with a keen eye to safety. As for my father and the other 5.4 million other Americans living with this disease, his cognitive status will continue to deteriorate. But by providing support, education, and advocacy, we will have made a significant impact on improving their safety and quality of life. ■

REFERENCES

1. Alzheimer's Association website. 2011 Alzheimer's disease facts and figures. Available at: www.alz.org/documents_custom/2011_Facts_Figures_Fact_Sheet.pdf *Accessed Jan. 25, 2012*
2. Alzheimer's Association website. 10 signs of Alzheimer's. Available at: www.alz.org/alzheimers_disease_10_signs_of_alzheimers.asp *Accessed Jan. 25, 2012*
3. Alzheimer's Association website. Alzheimer's disease and chronic health conditions: the real challenge for 21st century Medicare. Available at: www.alz.org/national/documents/report_chroniccare.pdf *Accessed Jan. 25, 2012*
4. National Institutes of Health, National Institute on Aging website. Home safety for people with Alzheimer's disease. Available at: www.nia.nih.gov/alzheimers/publication/home-safety-people-alzheimers-disease/general-safety-concerns *Accessed Jan. 25, 2012*
5. National Institutes of Health, National Institute on Aging website. Home safety for people with Alzheimer's disease. Available at: www.nia.nih.gov/alzheimers/publication/home-safety-people-alzheimers-disease/home-safety-room-room *Accessed Jan. 25, 2012*



"Home Safety for People with Alzheimer's Disease" is available in English or Spanish on the NIH National Institute on Aging website. (Click on the above link, or see Reference 5.)

Nutritional Support for the Ventilation Patient

by Bill Pruitt, MBA, RRT, AE-C

Nutrition is often overlooked in hospitalized patients. In an article from *Chest* in 2004, the authors remarked that some 40% of adult patients entering the hospital are seriously malnourished.[1] These patients have ignored their nutritional needs prior to admission, and this situation often contributes to their health status and affects the course of their hospitalization. Those who come to the hospital due to a disease or accident that leads to an ICU admission have problems with nutrition that are compounded by being in a critical care unit.

Patients who have a critical illness are prone to anorexia (persistent loss of appetite).[2] Timely nutritional support for patients receiving mechanical ventilation (MV) is paramount to their recovery. However, the focus for patients receiving MV tends to be on the pulmonary system failure and unstable hemodynamics. Nutrition tends to be at a lower priority, particularly since these patients are unable to take nutrition orally, and artificial means must be established for feeding. This article will examine nutritional support for patients in this subgroup and strive to move this issue to a higher priority.

Malnutrition, underfeeding, and overfeeding

Malnutrition leads to a decrease in body mass, contributes to problems with wound healing, increases the risk of nosocomial infection, and causes a decrease in strength and endurance in the respiratory muscles and diaphragm muscle mass.[3,4] Research has found that underfeeding in the ICU is a problem; these patients only received 59% of their prescribed calories.[5,6] Patients receiving MV who are malnourished have an increased risk of becoming ventilator-dependent, have longer stays in the ICU, and have higher mortality.[3]

On the other hand, overfeeding also leads to problems, such as increased oxygen consumption and increased carbon dioxide production, particularly when the patient is given too many carbohydrates. Higher levels of carbon dioxide increase minute ventilation, resulting in an increased work of breathing.[7]

When patients have undergone prolonged starvation or malnutrition, there may be a tendency to "overfeed" the patient, which can bring about refeeding syndrome. This syndrome occurs because the body deals with starvation/malnutrition by changing energy sources from glucose to ketones and free fatty acids. Thus, cellular electrolyte imbalance occurs. When overzealous feeding starts after prolonged absence of feeding, the body switches back to using carbohydrates for fuel. The imbalance in electrolytes reverses, and the hallmark sign of abnormally low phosphate levels shows up. Low phosphate levels reduce the production of adenosine triphosphate and respiratory muscle contraction suffers. Thus, with refeeding syndrome, patients have increased ventilator dependence and longer stays in both the ICU and the hospital.[3]

Patient assessment

Assessment of the patient's nutritional status commonly calls for measuring the patient's weight and calculating the body mass index. Measuring albumin and pre-albumin levels, nitrogen balance, and serum levels of the trace elements such

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as magnesium and phosphorus may also be helpful.[8] Other assessment tools may include limb circumference, skin-fold measurements, and a check on protein using a 24-hour urine creatinine measurement to compute the creatinine/height index.[7]

Equations for energy needs assessment

Deciding which nutrients to include when correcting malnutrition is a complicated issue. There are over 200 equations available to estimate calorie needs, which are given in kilocalories per kilogram (kcal/kg) of body weight. An article by Walker and Heuberger from Respiratory Care in 2009 reviewed seven equations selected out of the more than 200 prediction equations.

The reviewed equations included Harris-Benedict, American College of Chest Physicians, Ireton-Jones 1992 and 1997, Penn State 1998 and 2003, and Swinamer. Probably the most well known is the Harris-Benedict (HB) equation, which was published in 1919. The original equation adjusted for weight, height, age, and sex. Currently, the HB equation is often modified by using a factor to account for stress and injury since the original research used non-obese healthy volunteers to derive the equation.

According to Walker and Heuberger, if the clinician is not able to obtain an indirect calorimetry study (considered to be the "gold standard"), the 1998 and 2003 Penn State equations, the 1992 Ireton-Jones equation, and the Swinamer equation score better than the rest for assessing energy needs in critically ill patients. The HB equation was found to be inaccurate and unreliable for critically ill patients, having a tendency to both overestimate and underestimate the resting energy expenditure.[3]

Indirect calorimetry

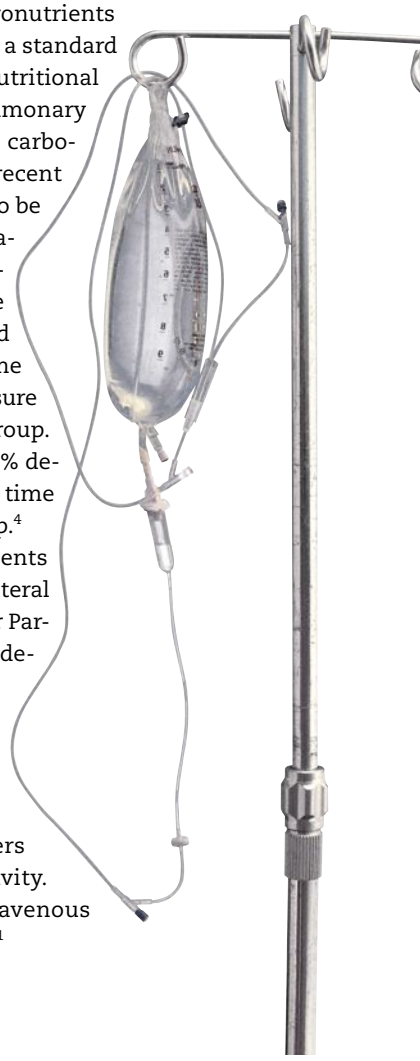
Indirect calorimetry (IC) is the standard by which all other measurements are compared when examining energy expenditure and the patient's nutritional needs. IC measures oxygen consumption (VO_2), carbon dioxide production (VCO_2), respiratory quotient (RQ, which is the ratio of CO_2 production to O_2 consumption), and resting energy expenditure (REE).[9] The oldest method of performing IC utilized the collection of all the expired air into an airtight container called a Douglas bag. Relative concentrations of expired O_2 and CO_2 were analyzed and compared to measurements of inspired O_2 and CO_2 to derive the VO_2 and VCO_2.

This method was cumbersome, required expensive equipment for the analysis, and required technical expertise to perform the measurements correctly. The Douglas bag method for performing IC was supplanted by the metabolic cart, which utilizes mixing chambers and performs breath-by-breath analysis to determine VO_2 and VCO_2. This method is more portable and provides accurate measurements when all factors are stable and there are no complications, but these carts are expensive.

The newest generation of IC measuring devices has come about with the digital revolution and microcomputer technology. These devices are handheld and extremely portable but are unable to perform the IC measurement on ventilator patients.[10] IC measurement with MV can cause problems with the patient-ventilator system in such areas as trigger sensitivity, compressible volume loss, increased resistance, and possible leaks. Leaks around a tube cuff or chest tube can cause the measured REE and RQ to be inaccurate, and peritoneal and hemodialysis will also skew these values.[9]

Providing nutrition

When nutrition is provided, the goal is to provide a certain number of kcal/kg/day for energy (calories are found in carbohydrates, fats, and protein), along with adequate fiber, fluid, and micronutrients (which may be provided through a standard multivitamin with minerals). Nutritional formulas for patients with pulmonary disorders are most often low in carbohydrates and high in fats. In a recent study, this combination proved to be much more beneficial for ventilator patients compared to a standard low-fat, high-carbohydrate formula. The high-fat group had decreased $PaCO_2$, tidal volume needs, and peak inspiratory pressure versus the high-carbohydrate group. The high-fat group also had a 42% decrease in mechanical ventilator time as compared to the control group.[4]



Nutrition for ventilator patients can be given by enteral or parenteral means. The American Society for Parenteral and Enteral Nutrition defines these terms:

- Enteral nutrition: Feeding provided through the gastrointestinal tract via a tube, catheter, or stoma that delivers nutrients distal to the oral cavity.
- Parenteral nutrition: The intravenous administration of nutrients.[11]

The enteral route is preferred for providing nutrition — this allows the gut to continue normal function and helps maintain immune function. Enteral feeding may be continuous or intermittent, and sometimes is set up to occur in the nighttime hours to allow for activities during the day that interrupt feeding. Short-term enteral feeding often occurs via a nasogastric or orogastric tube. Prolonged enteral feeding may call for a percutaneous endoscopic gastrostomy tube.[4] Parenteral nutrition is called for when the patient has issues with the gastrointestinal (GI) tract such as GI bleeding, bowel obstruction, vomiting, diarrhea, or prolonged periods postoperatively with all feeding being held.

Patients with severe health conditions (acute respiratory distress syndrome, septic shock, severe sepsis) who are fed special enteral feedings enriched with the acids EPA and GLA (fish oil and borage oil, respectively) and antioxidants have had significant improvement in outcome. This approach has been termed "inflammation-modulating nutritional support." Studies have shown that this formulation resulted in a much better PaO_2/FIO_2 ratio, increased ventilator-free days, increased ICU-free days, and reduction in organ dysfunction.[12,13]

RTs must be aware

Adequate and timely nutritional support is necessary for maximizing recovery from critical illness. The best means to assess nutritional status is indirect calorimetry, but the availability of the equipment, cost, and technical expertise often preclude this measurement. Of the current equations to assess nutrition, the 1998 and 2003 Penn State equations, the 1992 Ireton-Jones equation, and the Swinamer equation scored better in targeting the correct kcal/kg/day. Enteral nutrition is preferred, and low carbohydrate, high-fat feeding is most appropriate for ventilator patients.

Although respiratory therapists are not directly involved with nutrition, we need to be aware of its implications in caring for the ventilator patient and should consult with our nutrition or dietary departments to en-

sure we are addressing the needs of the total patient. Our goal should be to provide and promote good health care and good health. Appropriate nutrition can decrease the detrimental sequelae associated with prolonged mechanical ventilation. ■

REFERENCES

1. Barr J, Hecht M, Flavin KE, et al. Outcomes in critically ill patients before and after the implementation of an evidence-based nutritional management protocol. Chest 2004; 125(4):1446-1457.
2. Casaer MP, Mesotten D, Hermans G, et al. Early versus late parenteral nutrition in critically ill adults. N Engl J Med 2011; 365(8):506-517.
3. Walker RN, Heuberger RA. Predictive equations for energy needs for the critically ill. Respir Care 2009; 54(4): 509-521.
4. Doley J, Mallampalli A, Sandberg M. Nutrition management for the patient requiring prolonged mechanical ventilation. Nutr Clin Pract 2011; 26(3):232-241.
5. Cahill NE, Heyland DK. Bridging the guideline-practice gap in critical care nutrition: a review of guideline implementation studies. JPEN J Parenter Enteral Nutr 2010; 34(6):653-659.
6. Lev S, Cohen J, Singer P. Indirect calorimetry measurements in the ventilated critically ill patient: facts and controversies – the heat is on. Crit Care Clin 2010; 26(4):e1-e9.
7. Cairo JM, Pilbeam SP. Effects of positive pressure ventilation on the cardiovascular, cerebral, renal, and other organ systems. In: Mechanical ventilation: physiological and clinical applications, 4th ed. Pilbeam SP, Cairo JM, editors. St. Louis MO: Mosby Elsevier; 2006:345-356.
8. Racco M. Nutrition in the ICU. RN 2009; 72(1):26-30.
9. Respiratory Care Journal website. AARC clinical practice guideline: metabolic measurements using indirect calorimetry during mechanical ventilation – 2004 revision & update. Available at: http://www.rcjournal.com/cpgs/09.04.1073.html *Accessed Jan. 22, 2012*
10. Haugen HA, Chan LN, Li F. Indirect calorimetry: a practical guide for clinicians. Nutr Clin Pract 2007; 22(4):377-388.
11. American Society for Parenteral and Enteral Nutrition website. Available at: http://www.nutritioncare.org/homepage.aspx (Search website for definition of terms) *Accessed Jan. 23, 2012*
12. Pontes-Arruda A, Aragão AM, Albuquerque JD. Effects of enteral feeding with eicosapentaenoic acid, gamma-linolenic acid, and antioxidants in mechanically ventilated patients with severe sepsis and septic shock. Crit Care Med 2006; 34(9):2325-2333.
13. Gadek JE, DeMichele SJ, Karlstad MD, et al. Effect of enteral feeding with eicosapentaenoic acid, gamma-linolenic acid, and antioxidants in patients with acute respiratory distress syndrome. Crit Care Med 1999; 27(8):1409–1420.

Educating the COPD Patient in the Hospital

by Thomas J. Kallstrom, MBA, RRT, FAARC

With all the talk about COPD readmission rates being scrutinized by Medicare and other third-party payers, and with hospitals being penalized for readmissions within 30 or 60 days, there appears to be an opportunity for clinicians, including respiratory therapists, to positively impact COPD patients who are admitted to an acute care facility.[1] Many hospitals and medical associations have developed acute care COPD protocols with the goal of providing care as expeditiously as possible, as well as to educate and train the patient so that they will be in a better position to self manage their chronic lung disease. Today the average length of stay in the hospital is four to five days. This timeframe allows the RT to assess, evaluate, and educate patients on optimal self-management. The processes must start at admission and should trigger the preparation for discharge from the hospital to home.

about the author...

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Aerosol administration technique

Respiratory therapists at the bedside should engage the patient in teaching them self-management techniques. One of these areas, in particular, is that of aerosol administration technique. All too often we treat patients who are not competent in the administration of their aerosol. Press et al spotlighted this in a study examining rates of inhaler misuse in a population of patients with COPD and asthma.[2] In this large academic hospital, patients were observed administering metered-dose inhaler (MDI) and Diskus® devices. Misuse was defined as following less than 75% of correct steps. Interestingly, misuse was considerable. Misuse was identified in 86% of patients using MDIs and in 71% using a Diskus in the asthma population, and it was similar for the COPD patients. Further, the COPD patients were more likely to have vision problems and three times more likely to have inadequate health literacy. The patients with poor vision misused their Diskus devices more frequently. It took the clinician two education sessions on average to train the patient adequately. This brings home the point that understanding the capabilities and barriers to education are the first steps that need to be taken when starting an educational intervention. Additionally, we cannot assume that our patients are competent until they demonstrate back to us the procedure we have taught them.

The AARC has published a series of three aerosol guides that respiratory therapists may find useful as an aid in aerosol device and medication education:

- "A Patient's Guide to Aerosol Drug Delivery"
- "A Guide to Aerosol Delivery Devices for Physicians, Nurses, Pharmacists, and other Health Care Professionals"
- "A Guide to Aerosol Delivery Devices for Respiratory Therapists"

All three have focused education. The patients' guide is written for patients at a lower health care literacy level, the guide for physicians, nurses, pharmacists, and other health care professionals provides essential information as well as an executive summary, and is different from the version for respiratory therapists, which is more in-depth in theory and application. All three guides can supplement RTs as they educate.

Self-management skills

Beyond education on aerosol delivery devices, it is important that COPD patients be taught the self-management skills they need. An essential component is the

action plan. Action plans have been a basic component in asthma self-management, and in recent years its utility has been shown to be just as effective for patients with COPD. In 2005, a Cochrane Database review was completed which showed that an action plan did help COPD patients recognize and react appropriately to exacerbations by self-initiation of steroids and antibiotics.[3] By allowing the patient to identify the symptom and take the appropriate intervention, they were able to reduce unscheduled visits to their physician as well as to reduce emergency room visits or hospitalization. In another study, Bourbeau and colleagues found that using an action plan reduced morbidity and mortality.[4] There are promising data to support their use.

While COPD action plans vary, essential components should include:

- Medications (dose, route of delivery, and frequency)
  - Used as routine
  - Used when symptomatic
- Best FEV_1 (if known)
- Best FVC (if known)
- Room air oxygen saturation
- Oxygen setting (frequency and dose)
- Symptoms and recommended responses
  - This includes examples of symptoms (e.g., being unable to speak in a full sentence or unable to walk even a short distance without getting short of breath) and then directs the patient to recommended action.
- Contact information (physician, emergency contact, nearest hospital)
- Comorbidities
- Some action plans also include general health care information, such as:
  - Vaccine history
  - Smoking status (and if still a smoker, tobacco-dependence treatment)
  - Exercise plan
  - Diet plan.

RTs are leaders in patient education

The next several years in patient care will be interesting, and the role that the respiratory therapist can and should play will put us front and center in the care and education of our patients. Whether it is a protocol, action plan, or bedside education, the goal must be to better prepare the patient and their caregivers to be the best self-managers that they can be. ■

REFERENCES

1. U.S. House of Representatives website. 111th Congress: legislative counsel: compilation of patient protection and affordable care act. Available at: http://docs.house.gov/energycommerce/ppacacon.pdf *Accessed Jan. 23, 2012*
2. Press VG, Arora VM, Shah LM, et al. Misuse of respiratory inhalers in hospitalized patients with asthma or COPD. Gen Intern Med 2011; 26(6):635-642.
3. Turnock AC, Walters EH, Walters JA, Wood-Baker R. Action plans for chronic obstructive pulmonary disease. Cochrane Database Syst Rev 2005; (4):CD005074.
4. Bourbeau J, Collet JP, Schwartzman K, et al. Economic benefits of self-management education in COPD. Chest 2006; 130(6):1704-1711.

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RTs Can Be a Resource To Help Patients with the Cost of Their Medications

by Cheryl West, MHA, and Anne Marie Hummel

As respiratory therapists, you are not only the experts in providing a range of clinical pulmonary services across all care sites, you are also on the front lines when it comes to interacting with pulmonary patients and acting as a key source of knowledge and advice on how your patients can manage their respiratory conditions.

A key factor for many patients is acquiring the medications, respiratory-related or not, that are essential for them to recover from or manage their medical condition. But as the economy still slowly emerges from the recession, as unemployment remains exceptionally high, as individuals lose their health insurance and become uninsured or underinsured, many Americans struggle or even lose the ability to pay for these critical and often expensive medications. Simply put, many of our fellow citizens do not have the money to pay for the medications they need.

As respiratory therapists, you are probably well aware that as of Jan. 1, 2012, Primatene Mist (the only low-cost, over-the-counter asthma drug) was removed from the market. The removal of Primatene Mist, while required by the Clean Air Act, just adds additional pressure to those pulmonary patients who are having difficulties paying for, or simply cannot afford to pay for, their medications.

We all know that there are state and federal programs that provide or assist in the acquisition of medications: Medicare Part D for the elderly and disabled, Medicaid for those in poverty (the federal poverty level in 2011 was $22,350 for a family of four and $10,890 for an individual… think about that). Those of you who are fortunate enough to have employer-covered private insurance that may (or may not) cover prescription medications, have no doubt seen your benefits shrink or watched as the costs of your premiums, co-insurance, and deductibles just keep rising.

about the authors…

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For those who do not qualify for these programs (e.g., the working poor, those who lost their jobs, those whose companies provide the bare minimum of insurance), it often comes down to getting the medications or paying the rent or putting food on the table. Often times, the drugs they need become secondary to other pressing needs.

Is there help for these individuals who fall between the cracks? The answer is yes, but a qualified yes. It's not a perfect system, and it won't solve the problems for everyone; but there are drug-assistance programs available. As respiratory therapists, you probably take care of these pulmonary patients who need help and who would welcome assistance as to where they can turn to for help. We hope the information below will provide you with some guidance you can provide to them.

The rest of this column is part of a reprint of information AARC published last summer on our consumer website YourLungHealth (www.yourlunghealth.org) that details drug-assistance programs.

Partnership for Prescription Assistance

This is a national program that provides many resources for financial aid. It helps qualifying patients without prescription drug coverage get the medicines they need for free or nearly free. According to the website, they offer "a single point of access to more than 475 public and private programs, including more than 180 programs offered by pharmaceutical companies."

It can also:

- Direct you to programs that help with co-payments.
- Provide a link to savings cards.

- Help you locate a free or low-cost clinic in your area.

Click on the "Patient" link in the center of the page or the "Prescription Assistance Programs" link near the top to access the information. Assistance programs available in your state are also listed where applicable.

If you have trouble obtaining the information you need or are unsure how to use the website, there is a link for your physician, pharmacist, caregiver, or community group member to help obtain assistance for you. They can help you by clicking on the "Patient Advocates" link. For more information, log on to www.pparx.org or call (888) 477-2669.

RX Assist

This is an additional resource sponsored by AstraZeneca. It is a comprehensive database of programs run by drug companies to help you get free or low-cost medications if you cannot afford them. You can search by either the drug medication name or the drug company who makes the drug. Your physician can also access the site and help you if necessary. See www.rxassist.org for more information.

NeedyMeds

You can search this data base (www.needymeds.org) for financial assistance on brand name drugs as well as generics. It also has a link for drug coupons and how to find a free clinic near you.

Asthma Patient Assistance Programs

The American Society of Health-System Pharmacists' website lists 42 asthma drugs for which financial assistance is available as well as the names of the drug manufacturers and how to contact them directly. It lists information on what is required from either your physician or pharmacist and what you as a patient need to do to get help. Toll-free phone numbers for the drug manufacturers participating in the program are also available.

The list was developed and updated by university pharmacy students several years ago, so the information may not be completely accurate, but it cannot hurt to try it out in the event it may be helpful. See www.ashp.org/Import/PRACTICEANDPOLICY/PracticeResourceCenters/PatientAssistancePrograms/SpecialtyResourcesGroup/AsthmaPatientAssistancePrograms.aspx#GSK.

Xopenex

This site is provided by the drug manufacturer Sunovion Pharmaceuticals Inc. and offers a "Breathe for Less" savings program. Xopenex comes in two formulations — Xopenex HFA Inhalation Aerosol (inhaler/puffer) and Xopenex Inhalation Solution (nebulized solution). Talk to your physician about which one is right for you. For details, log on or call www.xopenex.com, (888) 394-7377.

Ventolin

This site is provided by GlaxoSmithKline, the company that makes Ventolin. If you don't have prescription drug coverage, the company may be able to help you regardless of whether you are age 65 or over, disabled, or under age 65. Patient-assistance programs from other sources are also available on this site: www.gskforyou.com (or call 866-475-3678). ■

Health Care Information Security in the Sleep Center

by Mark D. Eley, MS, RRT-NPS, RPSGT

Breaches in health care information security can occasionally occur. While some of these breaches are minor and generally go unnoticed, others are indicative of gross failures of health care information systems and associated security practices.

In one of the most significant recent information breaches, approximately 26 million U.S. veterans had their personal data compromised when a laptop computer with their information was stolen.[1] While this incident was extensive and dramatic, many health information breaches are smaller in scope and scale, and represent a failure of routine activities and controls. The inadvertent sharing of medical information with friends or family members, leaving a computer monitor displaying patient information on in a public area, and not properly disposing of patient paperwork all represent health information breaches.

In today's health care environment, significant amounts of information are obtained, used, and transmitted electronically. This evolution of the processing of health information has created new and unique challenges for health care providers. In response to these challenges, many new legislative and policy decisions have occurred to help ensure the privacy and security of health information.

Probably most noteworthy of these legislative acts is the Health Insurance Portability and Accountability Act (HIPAA). Most health care providers are familiar with this legislation, and most health care employers require employees to undergo ongoing training and education in many of its facets. This helps ensure that providers are aware of what constitutes secure and confidential information and which actions must occur to ensure the ongoing security of protected health information.

about the author...

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While these legislative directives are important and useful, they are not always met with success or acceptance. For example, a recent article on the HealthData Management website described the relatively poor enforcement of the security provisions of HIPAA as related to the security of protected electronic health information.[2]

Specifically, this article identified 151 vulnerabilities in electronic health information systems. Many of these vulnerabilities were judged as "high impact," which implies a significant degree of threat risk. Additionally, this report indicated that other security issues, such as mobile device encryption and appropriate user authentication, were ineffectively implemented.

How information security impacts your sleep center

Relative to a sleep center, these are all-important information security issues that must be considered when evaluating and engaging in operating activities. Sleep centers present unique challenges to health information security. Respiratory therapists and sleep technologists must be aware of these issues. Many security practices are generalized for all health care encounters, and some are specific to a sleep center environment.

During patient intake, confidential information about patients should not be revealed to other patients, friends, or family members. In some instances, patients arrive at a sleep center simultaneously, and information must not inadvertently be revealed about a patient to another individual.

Tasks viewed as somewhat mundane, such as traveling in an elevator with other patients or placing patients

in common waiting rooms, have the potential for information breaches. Staff members should never discuss patient-specific information with a patient in any community area such as those described.

Computer issues

Many sleep center control rooms have multiple computers, with each computer dedicated to a specific patient. It is crucial that individuals working in a sleep center either prevent access to these areas by unauthorized individuals or ensure that monitors are not viewable by unauthorized individuals. Sleep centers often transfer computerized sleep data to physicians or scoring technologists for review and evaluation. This use of information technology must occur in a secure and confidential manner. Both the data source and data target must have appropriate controls to ensure that the sleep data is used and evaluated in a secure manner.

Many computers in a sleep center have Internet access and also support the use of external media such as USB flash drives. Ideally, computers used for acquisition and analysis of sleep studies should be dedicated specifically to that purpose. Internet use other than remote access by an authorized sleep system vendor or authorized data transfer should be prohibited.

Despite the use of firewalls and other security precautions, the Internet can cause problems. The best precaution against computer compromise with Internet malware or other malicious downloaded software is to not use a computer connected to the Internet. While it is desirable and probably necessary to have external media access on a sleep center computer, employees should be discouraged or prohibited from using these media access points for personal use on a dedicated acquisition or analysis computer.

Any paper documents used in a sleep center must have a secure destination. Confidential documentation must either be placed in a patient's chart and subsequently placed in a secure location, or the documentation must be disposed of in a secure manner.

Social media activity is also a potential security risk for sleep centers and health care facilities. Employees must never divulge any information about their patients or patient-related activities on a social media website. Doing so would constitute an information security breach and would be dealt with accordingly.

Ongoing training and education of all sleep center employees must regularly occur. The strongest barrier to supporting information security and the weakest link compromising information security is a facility's employees. Effective training and education of these individuals is one of the best and most efficient controls that can be enacted to ensure successful and robust information security.

Video concerns

One common patient concern in a sleep center involves the video recording of a sleep study, which is usually done for medical purposes and can also be used to document abnormal clinical nocturnal activities and, in some cases, position changes during a sleep study. Patients and family members are often justifiably concerned about the use of video recordings from a security perspective. Appropriate consents must be obtained when individuals are video recorded, and explanations must be provided about the use and rationale of video recordings.

Video recordings can also be used when a sentinel event occurs. In one tragic and unfortunate event, a patient died in January 2010 at a sleep center in Georgia.[3] In this instance, security cameras were used for individuals to view this event. The initial perception was that there was negligence on the part of the sleep technologist based on this video footage. The outcome of an event such as this is ultimately decided in the court system.

In instances such as this, sleep center personnel should consult with a

facility's risk management or security personnel to determine the best course of action for both the patient and the staff member.

Cell phones and other media devices

Cell phones and other media devices can present information security concerns as well. Many sleep center environments are somewhat open in that patients can easily view and communicate with each other. A misuse of the photo function of a cell phone or other communication technology such as text messaging may be considered a security breach. While some health care facilities ban the use of cell phones, it is possible or probable that individuals will not adhere to this ban, so it should be assumed that cell phone photos are possible whenever patients are in a sleep center.

Conclusion

All individuals working in sleep centers and in health care must be aware that information security is a primary concern with patients, facility administrators, and general staff members. These issues are especially significant with the rapid advances in communication technology and Internet technology. Night-time sleep technologists in particular must be aware of these issues and must pay close attention to all sources of information sharing to ensure that patient information and patient confidentiality is not compromised. ■

EDITOR'S NOTE

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REFERENCES

1. Baseline magazine website. What you can learn from the VA's snafu. Available at: www.baselinemag.com/c/a/Projects-Security/What-You-Can-Learn-From-the-VAs-Snafu/ *Accessed Jan. 20, 2012*
2. HealthData Management website. Goedert J. HHS cops: enforcement of security rule poor. Available at: www.healthdatamanagement.com/news/hhs-inspector-general-hipaa-security-cms-onc-reports-42492-1.html *Accessed Jan. 20, 2012*
3. The Atlanta Journal-Constitution website. Schneider C, Stevens A. Man dies during Emory sleep test. Available at: www.ajc.com/news/dekalb/coroner-no-investigation-into-293531.html *Accessed Jan. 20, 2012*

The Right Choice in Profession

by Debora Schantz

My respiratory care journey began back in 2007. I worked as a medical secretary in the step-down and critical care units of a local hospital. As I am fully aware that everyone's position is just as important as the next, I was truly unhappy doing what I was doing. With the encouragement of family and friends and my husband's support, I decided to go back to college. I started with baby steps and enrolled in a medical terminology class at the local community college in my area. I succeeded with that class, and my goals and aspirations grew larger and larger.

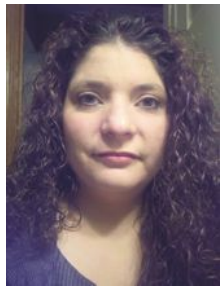
In 2008, I jumped in with both feet and began this long, stressful, eye-opening, yet gratifying journey we call school. Starting from the bottom and working my way up was an understatement — it had been 15 years since I graduated from high school. I was, and gratefully still am, married with two children and had no idea how to get back into the groove of school once again. At first, I was thinking of going into nursing. A lot of my friends I had met along the way and worked with were nurses. As time passed, I really began to notice the respiratory therapists I worked with and started talking with them in depth about the profession and what it entailed. The more we spoke and the more I saw, the more I liked it. In 2009, I officially chose my major and applied for the respiratory therapy program offered at my school.

As a respiratory therapist, there are several different aspects to the profession. You can be employed at hospitals, clinics, urgent care centers, the doctor's office, sleep clinics, or in home health care. Depending on the place of employment, as an RRT, I can go from a code, trauma in the ER, or giving breathing treatments — all in the same day. The versatility, training, and experiences are amazing. Once I started doing my clinical rotations as a second-year student, I knew for certain that I was in the right field.

Another bonus with respiratory therapy is that in your second year, if you have passed all the required classes and clinical competencies, in the state of Ohio you are able to apply for a limited-practice permit. I took advantage of this opportunity and have truly been blessed by acquiring a position in the respiratory care department of the same local hospital where I had started in 2007 as a medical secretary. Being able to work in the profession that I have worked so hard to get into is so gratifying. It makes all the hard work well worth it. I am grateful every time I head into work that I have a job I truly love doing.

Although my journey has not been an easy one, with the support, love, and encouragement of my amazing husband, beautiful children, friends, and family, I am down to my last semester of school. My projected graduation is May 2012, and I for one can't be happier. With strength and determination, truly anything is possible. It is true what some say, "hard work does pay off in the end." ■

about the author...



Debora Schantz is a respiratory therapy student at Lakeland Community College in Kirtland, OH. She works for Lake Health at TriPoint Medical Center in Concord.

Compounding: Looking at the Legalities

by Anthony L. DeWitt, JD, RRT, FAARC

Ever since the first drugstores were opened by Muslim pharmacists in Baghdad in 754, chemists and pharmacists, as well as physicians have been compounding or mixing their own medications. In an age where pharmaceutical companies spend millions of dollars on slick television advertising featuring butterflies and bathtubs, it is easy to believe that the art of compounding has been lost to history, replaced by commercially bottled and well-regulated drugs. But that is not the case. Physicians and pharmacists still compound medications for patients, sometimes out of unusual substances; and this practice is, for the most part, poorly regulated by the U.S. Food and Drug Administration (FDA).

Compounding challenges

Compounding is necessary because patients often present unique challenges. A child may need a specially compounded flavored antibiotic. Patients with peculiar nutritional deficiencies may require specially compounded supplements. A patient with an allergy to an ingredient in an expectorant may require a specially compounded one. Compounding is normally done by a pharmacist pursuant to a physician's prescription. In the 1990s, however, the FDA received reports that some retail pharmacies were purchasing large quantities of bulk drugs, mixing those with other drugs, and providing them to practitioners without ever receiving a prescription. The FDA issued rules that were later declared unconstitutional in part. The FDA amended the rules stating up front it didn't want to stop the practice of compounding. It said:

FDA recognizes that pharmacists traditionally have extemporaneously compounded and manipulated reasonable quantities of human drugs upon receipt of a valid prescription for an individually identified patient from a licensed practitioner. This traditional activity is not the subject of this guidance.[1]

The FDA's new rules took aim at pharmacies that acted like drug manufacturers and informed them that compounding pharmacies that acted like manufacturers would face enforcement actions. The FDA guidance provided nine factors that it said would guide its determination of when to enforce its new policy. Distilled to its essence, the current FDA guidance allows a retail pharmacy to compound a drug when:

1. There is a valid prescription.
2. It compounds in an amount ordered by the prescription and not in bulk.
3. The pharmacy operates as a retail pharmacy.
4. It does not compound drugs that were withdrawn or removed from the market or use components that are not FDA-approved without an investigational new drug application.

Lack of regulation

Interestingly, the FDA does not regulate, in any way, the compounding of substances by physicians. A physician could, without FDA approval, create an entirely new compound of drugs and provide those to a patient subject only to the regulation of his or her state medical board. The FDA also permits physicians to utilize drugs "off label" for purposes other than those for which the drug is approved. But most physicians have far too much to do to engage in the business of compounding, and few engage in compounding because it may run afoul of their malpractice insurance policies if they do.

about the author...

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More importantly, simply because the FDA does not regulate a physician's compounding of a drug, or the FDA allows a pharmacy to compound a solution for administration pursuant to its rules relating to retail pharmacies, it doesn't mean that there are no consequences for doing so. If things go wrong, there are always consequences.

Where no harm comes to a patient there is almost no chance that a pharmacist or physician would face licensure or legal problems from compounding. But when a patient has a severe or anaphylactic reaction to a compounded substance, several significant issues arise under state tort law.

> Therapists should be wary of compounded medications.

Under federal law, drugs that are approved by the FDA for use in the United States contain a label warning required by federal law, and its wording is set by the FDA. When bad things happen to someone who takes a drug like ibuprofen, the FDA warning means that a plaintiff can't claim they should have been warned that the drug might cause some new or different condition than those set forth on the packaging. This is called the doctrine of federal preemption. However, when a pharmacist mixes compound A with compound B, and adds flavoring C, the pharmacist is doing so without the FDA's specific approval. Thus, under product liability law in most states, that pharmacist has a duty to warn about the possible side effects and adverse consequences of the drug. A failure to do so can result in a "negligence" or "failure to warn" claim.

Similarly, an FDA-approved drug is deemed safe. Under the doctrine of federal preemption, only the FDA can say when a drug is safe. Product liability lawsuits over a drug's safety or efficacy are often preempted. But a compound of drugs may not obtain that same level of protection under the federal law. Strict liability may apply such that a pharmacist would be liable for any harm caused by his compounded drug.

Therapists and compounding

What about the home care therapist who is asked to administer a compounded medication? Can the therapist safely do that? A therapist would have a duty to identify the components of the drug and obtain information from the pharmacy about the likely side effects of the drug before administration. Failure to do that before administration would be negligent.

Prudence would dictate that the first administration of a compounded drug be done within the confines of a hospital or a physician's office such that any untoward reaction could be documented and treated. Certainly a patient should never be sent home with a compounded prescription and allowed to administer it at home without a therapist present if the compounded solution had not been previously administered and safety ensured.

Similarly, if the home care therapist acted as the "agent" of the pharmacist by delivering and administering the drugs, he might subject the pharmacist to liability for the therapist's actions.

It is important to recall that mistakes do happen even in very good pharmacies. Early in my career as a therapist, a newborn infant was transported to our facility in cardiac arrest. Despite our best efforts, we were unable to save the infant's life. The child had severe derangement of its electrolytes. The parents lived on a farm and had well water. On the advice of their physician, they had picked up a bottle of sterile water from a local pharmacy to use to make the infant's formula. Unknown to everyone, that bottle had been opened and potassium had been added. It had then been erroneously recapped and left unlabeled. That simple mistake cost a human life.

A similar mistake in compounding of respiratory solutions could be equally disastrous. Therapists should be very wary of administering compounded medications and should do so only where unit dose medications are unavailable or where a definite clinical need exists. ■

REFERENCE

1. FDA website. Inspections, compliance, enforcement, and criminal investigations: Manual of compliance policy guides (CPG 460.200). Available at: www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/ucm074398.htm *Accessed April 20, 2012*

Understanding the Issues Associated with Compounding Respiratory Medications

by Sandra Walker

Triad: *a group of three, especially of three closely related persons or things*

When defining traditional pharmacy compounding of drugs, the "triad" is key. It takes three: the patient, the prescribing clinician who determines in partnership with the patient there is no U.S. Food & Drug Administration (FDA)-approved drug that will suit the patient's need, and the compounding pharmacist who creates the personalized drug for that individual patient per the provider's prescription. Communication among members of the triad is critical and continues long after the patient leaves the pharmacy with their prescription. The existence of a patient-prescriber-pharmacist relationship is inherent in true pharmacy compounding. If not, it may instead be a case of "manufacturing under the guise of compounding."

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Risk factors

Traditional compounding is an important service that provides patients with options when they have allergies to inactive ingredients in an FDA-approved drug, are unable to swallow a pill, or need a medication that is not commercially available. These compounded medications, based on a physician's prescription for an individual patient, are not required to meet FDA standards of safety, efficacy, and sterility as compounded drugs are made for individual patients, not the masses. In fact, compounding a medication based on the provider's prescription by a pharmacist is an accepted and necessary practice in order to meet rare and specific needs of an individual patient.

Documented risks of adverse events over the years from compounded drugs have highlighted the need for patient and prescriber awareness. In particular, over the last decade, evidence surfaced regarding pharmacy businesses that *illegally manufactured respiratory drugs under the guise of traditional pharmacy compounding*.

Without patient or provider knowledge, these businesses dispensed non-FDA approved respiratory medications to patients instead of FDA-approved nebulizer medications. In several documented cases, home health care company representatives, while delivering nebulizer machines to patients in their homes, offered patients the opportunity to sign paperwork that would allow them to receive their nebulizer medications mailed directly to their homes. At no time were the patients told they would receive illegally mass-manufactured compounded medications instead of FDA-approved medications. When the companies contacted the physician offices, they submitted preprinted paperwork that did not state the nebulizer medications listed were not FDA approved but instead were being mass manufactured by a pharmacy business. By providing medications that were not FDA approved for safety, efficacy, or sterility, these pharmacy businesses put patients at risk. Some of these mass-manufactured nebulizer medications were found to contain irritants such as ethanol and some were contaminated with bacteria or fungi. Some were also found to have not enough drug, too much drug, and (in a few cases) a drug other than what was on the label.

Although there are inherent risks in any compounded medication, if a provider and a patient decide there is a need to compound, risks are discussed and managed by the physician, patient, and pharmacist working together.

There was a considerable financial incentive for these businesses to illegally manufacture and dispense these medications; and after careful review of this practice, the Centers for Medicare and Medicaid Services halted reimbursement for any compounded nebulizer medications, thereby removing the financial incentive and eliminating most of these products from the market.

In cases where the FDA addressed companies for illegally manufacturing drugs under the guise of traditional pharmacy compounding, they stated these companies acted like manufacturers, making hundreds of thousands of doses of nebulizer medications and then substituting these unapproved drugs in place of the prescribed FDA medications without provider or patient knowledge. Some companies made small changes in dosage and/or created a combination of drugs not proven to be effective to justify compounding.

Below are some ways illegally manufactured nebulizer medications made their way into patients' homes without their (or their providers') knowledge:

- Using preprinted forms that listed these compounded medications (sometimes with different doses) among FDA-approved medications without clearly stating they were compounded and, thus, not FDA approved
- Sending pharmacy business employees to "detail" physician offices with the unapproved nebulizer medications and leaving samples
- Encouraging patients, to whom the company would provide durable medical equipment (DME), to sign up and switch to their medications because they would be delivered right to their door and be cheaper, faster, and/or easier to use.

Under ideal and "expected" circumstances, when a pharmacist compounds a medication on a provider's prescription for one individual, both the individual and the provider must be aware the prescription is not FDA approved and was compounded specifically to meet their unique needs. The patient and the physician communicate to the pharmacist any potential issues (i.e., dosage, side effects, or the medication not doing the job they intend). Because it is one patient, one provider, and one pharmacist, if there is any problem or adverse reaction, one person is affected. Illegal manufacturing of nebulizer medications can ultimately affect several hundreds or thousands of people.

Safety measures

So how do patients protect themselves and still receive the appropriate medications they need to lead their lives? How do medical professionals ensure their patients are using FDA-approved medication as prescribed?

1. Be vigilant if using preprinted forms from DME companies or other businesses. Forms may list unapproved medications along with FDA-approved ones by simply changing the dosage. Review forms carefully and request verification that the medications are FDA approved to not only keep patients safe but also reduce prescriber liability.

2. Ask patients to bring in samples of their medications at every visit. Teach them what their medications should look like and what they shouldn't. FDA-approved nebulizer medications do not have paper labels or inked printing on the vials but come in clear, embossed vials sealed in foil packets.

3. Display patient education material and show patients actual samples of their medication and packaging. Provide them with a phone number to contact if they have any questions.

4. Be wary of claims made by pharmacies that are not supported by evidence: less nebulization time, better patient compliance, etc. Statements such as "*Manufacturers provide some nebulizer medications, but many of the most effective formulations must be mixed by a compounding pharmacist*" should be a red flag and raise questions. FDA-approved nebulizer medications are approved for safety, efficacy, and sterility; and most people can be treated by an FDA-approved nebulizer medication.

5. If a patient tells you they are using their nebulizer medications and following their plan but the outcomes are not what you expect, check the medications to ensure they have received what was prescribed.

6. Ask patients regularly how they are doing, how their medicine and plan are working for them, if anything has changed in their lives, and if there is anything they would like you to know.

For more information, read the AANMA White Paper "Unlawful Pharmacy Manufactured Nebulizer Medications: Physician Liability and Patient Safety Issues" at www.aanma.org/pdf/physicianLiabilityWhitePaper.pdf. ■

ADDITIONAL READING

U.S. Food & Drug Administration website. Pharmacy compounding. Available at: www.fda.gov/drugs/GuidanceComplianceRegulatoryInformation/PharmacyCompounding/default.htm *Accessed Feb. 17, 2012*

U.S. Food & Drug Administration website. The special risks of pharmacy compounding. Available at: www.fda.gov/ForConsumers/ConsumerUpdates/ucm107836.htm *Accessed Feb. 17, 2012*

Specialty Sections, Times 10

AARC delivers targeted information to practice groups within the profession

When respiratory care educators go out to recruit students for their programs, one of their top selling points for the profession is the great diversity people will encounter in terms of practice areas. Respiratory therapists are found in nearly every health care setting, and they see a wide range of patients with different conditions. That diversity calls for specialized education and networking opportunities, and the AARC fills the bill with 10 specialty sections designed to give RTs with specific interests a place to call home within the larger Association.

All of the specialty sections have dedicated discussion lists on the AARC's social networking site AARConnect, and they all publish monthly newsletters and quarterly *Bulletins* aimed at keeping their members informed. They also contribute significantly to the educational program at the AARC International Respiratory Convention and Exhibition — and in the case of the Education and Management sections, the Summer Forum as well. Sections that maintain a membership of 1,000 or more are represented on the AARC Board of Directors.

What else do the AARC's sections have to offer their members? We asked our section chairs to weigh in with what they feel are the top benefits of their groups and why they believe more therapists should join these speciality sections.

Adult Acute Care: The Heart and Soul of Respiratory Care

Who:
Keith Lamb, RRT

What:
RT II, Surgical Critical Care, Christiana Care Health System

Where:
Newark, DE

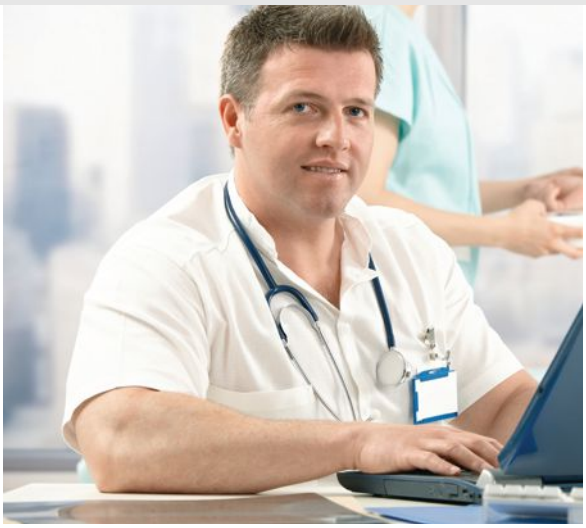
Adult Acute Care Section Chair Keith Lamb

Top benefits of your section:
Most of our colleagues who practice in the acute care setting are also fairly heavily involved with critical care. Some practice at very busy centers that see many critically ill/injured patients, and some are at facilities that see these patients infrequently. The section allows all of us to share our experiences and expertise through benefits like our discussion list on AARConnect, our section publications, our new journal club, case studies, and other interactive features. I believe these features help to make the world a smaller place and allow for very quick access to experience, evidence, and nearly unlimited resources to assist with our daily practice.

What you have done recently:
The addition of the journal club is one of our most recent developments. I basically choose a paper once a month that has been recently published (sometimes we take a stroll down memory lane with an "oldie but goodie") and send it out via AARConnect. A while back we were discussing a paper about the usefulness of a "cuff leak test" to evaluate upper airway patency. A therapist from a small facility out in the Midwest joined the discussion and stated that at his facility it was common practice to perform this test on all intubated patients before extubation. He was later able to convince others at his facility that this was not supported by the current data, and policy changes were made.

What's new for 2012:
We're working on a "virtual consult service" that will provide a list of members who are willing to be contacted at any time and are more than happy to help fellow members. A therapist in any part of the country who is having difficulty with a patient can simply pick up a phone, or send a text or email, and get advice almost immediately. I think this could be a great resource, especially for RTs who practice acute care at smaller facilities.

Why adult acute care RTs should join this section:
Adult acute care is the heart and soul of respiratory care. It is the basis of all of our training, but many people branch off into other areas of the profession after graduation. The section is the place where those of us who work in the "bread and butter" area of respiratory care can come together to network on behalf of our patients.



Management: Where Leaders Learn from Leaders

Who:
Bill Cohagen, BA, RRT, FAARC

What:
Clinical Specialist, Respiratory Care, Cancer Treatment Centers of America/Western Regional Medical Center

Where:
Phoenix, AZ

Management Section Chair Bill Cohagen

Top benefits of your section:
The biggest benefits of Management Section membership are networking with your fellow leaders on AARConnect; our AARConnect library of policies, protocols, forms, and best practices; Joint Commission and other governing body updates; mentoring and excellent educational materials; and the ability to get more in-depth information on the AARC's Benchmarking System and "Uniform Reporting Manual."

What you have done recently:
We're working on the AARC's "Hospital to Home" initiative in conjunction with the Home Care Section to help improve the transition of care between hospital and home and reduce costly readmissions for our facilities. We are also working with the AARC on the "Respiratory Therapist for 2015 and Beyond" project to define the knowledge, skills, and attributes (KSAs) needed by RTs in the next few decades, and the AARC's Leadership Institute, which will help to provide RTs with those KSAs.

What's new for 2012:
With the changing face of health care, we are the leaders who have been called upon to make a difference and take the profession to the next level. We are also the ones who are the mentors for future leaders. We'll be working to further our roles in these areas this year.

Why managers should join this section:
As a professional, you need to raise the bar within yourself first in order to raise the bar of the RTs you lead. The Management Section has the tools to help you accomplish that goal.

Education: A Virtual Faculty Lounge

Who:
Joe Sorbello, MSEd, RRT, RT

What:
Chair, Department of Respiratory Therapy Education, SUNY Upstate Medical University

Where:
Syracuse, NY

Education Section Chair Joseph Sorbello

Top benefits of your section:
The section allows us to share important information on clinical testing/evaluation, accreditation, etc.; receive consensus answers on problems/questions that come up spontaneously; improve our knowledge base in many areas of practice, including education; foster collegiality and cooperation among educators in all settings; and encourage scholarly work.

What you have done recently:
We've developed a Preceptor Training Program that combines the time-tested efforts of the professional respiratory therapy faculty at both the Georgia Health Sciences University in Augusta and the University of Arkansas for Medical Sciences in Little Rock. The Commission on Accreditation for Respiratory Care is looking to verify inter-rater reliability, and giving clinical preceptors an opportunity to attend this program will help in that process.

What's new for 2012:
The recent appointment of two subcommittees representing associate's degree and bachelor's degree respiratory therapy programs will hopefully encourage educators at these programs to work together in responding to ongoing issues in education, particularly those raised by the AARC's "Respiratory Therapist for 2015 and Beyond" project outcomes.

Why educators should join this section:
We are a relatively small profession; and we need every educator we can get, both in our schools and in the clinical setting, to be active and involved. By displaying and sharing our know-how, we are recognized by the scientific community, particularly our physician colleagues, as having professional expertise and value. RTs must be active and visible in scientific inquiry, research, and scholarly work to be valued and included whenever health professions are mentioned.

Continuing Care/Rehabilitation: Helping Patients Help Themselves

Who:
Debbie Koehl, MS, RRT, AE-C

What:
Program Coordinator, Pulmonary Rehab and Patient Education Program, Indiana University Health Methodist Hospital

Where:
Indianapolis, IN

Continuing Care/ Rehabilitation Section Chair Debbie Koehl

Top benefits of your section:
Networking with other pulmonary rehabilitation professionals, getting updated information on pulmonary rehabilitation legislative items quickly, and communicating through our section *Bulletin* and our discussion list on AARConnect.

What you have done recently:
I think our biggest project at the moment is working with the committee that's revising the AARC's "Uniform Reporting Manual" and ensuring pulmonary rehabilitation is included. This will allow our work to be reported and represented in a document that is well researched and published.

What's new for 2012:
We are working with AARC Director of Regulatory Affairs Anne Marie Hummel and our sister organizations to improve reimbursement structures for pulmonary rehabilitation. A multi-society project is being put together to address this issue.

Why continuing care/rehabilitation RTs should join this section:
The interaction of our members is one of the best reasons to join. I think our discussion list and the ability to contact each other and network has been extremely instrumental for many people. It does not cost that much to join our section, and the information that is shared is so very valuable. While some of our pulmonary rehabilitation programs function in large hospitals, many are located in small hospitals; and the opportunities to network and help each other that we get through the section is vital to our success. Sharing ideas and program models has benefited our members.

Sleep: Waking Up to Opportunities

Who:
Mike Runge, BS, RRT, FAARC

What:
Director, Respiratory Therapy and the Heart & Vascular Center, St. Alexius Medical Center

Where:
Bismarck, ND

Sleep Section Chair Mike Runge

Top benefits of your section:
Networking on AARConnect is one of the best benefits of Sleep Section membership because it allows for timely discussions of current events that affect our members and gives us ready access to policies and procedures or other pertinent data and information that members are willing to share. But I believe the No. 1 benefit is our ability to influence the sleep presentations at the AARC International Respiratory Convention and Exhibition. The program always offers some of the best and most current information for respiratory therapists working in the area of sleep. Equally important is the opportunity we all get at the Congress to network with and develop new friends and colleagues in sleep whom we can always call on when we need help in a pinch.

What you have done recently:
The most important project that the Sleep Section is working on today is continued development and recruitment of new leadership for the section.

What's new for 2012:
One of the specific areas that we are concentrating on is AARC Congress 2012 in New Orleans. We are recruiting "new blood" for speakers to bring in fresh ideas and lectures pertaining to the day-to-day needs of our Sleep Section therapists.

Why sleep RTs should join this section:
To get involved. Being part of the Sleep Section allows you to network and foster friendships with colleagues who will always be there to assist in any way they can for a lifetime.

Long-Term Care: A Growing Field for RTs

Who:
Gene Gantt, RRT

What:
Manager REMEO Ventilation, USA, Linde RSS LLC/REMEO USA

Where:
Livingston, TN

Long-Term Care Section Chair Gene Gantt

Top benefits of your section:

Long-term care (LTC) has come a long way from the days of the traditional nursing home concept, and the changes pose new and unique challenges to the profession. We are seeing an explosion of opportunities for RTs in the LTC segment, which includes long-term acute care hospitals, subacute rehabilitation facilities, and skilled nursing facilities (SNFs), as well as newly emerging sites of care such as specialty group homes for ventilated patients. By being involved with the section, RTs can hear of such opportunities, share ideas, and network with others who are working in the arena.

What you have done recently:

In 2009 the section drafted a position statement on "Delivery of Respiratory Therapy Services in Skilled Nursing Facilities Providing Ventilator and/or High Acuity Respiratory Care," which was approved by the AARC Board of Directors and Board of Medical Advisors. As section chair, I presented to the Centers for Medicare and Medicaid Services on the issues of long-term ventilator care in SNFs and the need for these uniform standards of care to be implemented, as well as the need for higher Medicare reimbursement and more demand for outcomes-driven programs. That effort was followed by the release of the RUGs IV payment in late 2010, which nearly doubled the rate paid to SNFs for the ventilator and tracheostomized population. With the increased rates and standards to work from, there has been tremendous growth in access to long-term ventilator beds across the United States and a subsequent increase in opportunities for RTs in that environment.

In Tennessee, the section provided input to the state Medicaid program (TennCare) as well, which resulted in safety standards and the inclusion of RTs in legislation to create a new level of care, the adult care home. RTs are included on the list of those who can license and own these new facilities.

What's new for 2012:

This year we are continuing to pursue growth in membership as well as look at avenues to improve patient care. Over the last three years, our membership has doubled, and the goal of 1,000 members is now in sight. Additionally, we hope to announce an accreditation process specific to LTC ventilator units. This project has been underway since 2009 and will be a very important step to assure payers and consumers of quality care.

Why long-term care RTs should join this section:

As you can see from all of our recent accomplishments, section membership is the best way to stay abreast of current trends and to influence change.

Home Care: New Paradigms for Success

Who:
Greg Spratt, BS, RRT, CPFT

What:
Director of Clinical Marketing, Oridion Capnography

Where:
Philadelphia, MO

Home-Care Section Chair Greg Spratt

Top benefits of your section:
The ability to interact with peers, especially via AARConnect, information provided through the monthly newsletter and quarterly *Bulletin*, and the ability to receive communication and provide input directly to the AARC on topics that matter.

What you have done recently:
Our project focus has been on the "Hospital to Home" initiative, working jointly with the Management Section to explore how hospital and home care RTs can work cooperatively to prevent readmissions. Soon, hospitals will be financially penalized for readmission rates above the norm, creating an opportunity for home care therapists to demonstrate their value in preventing readmissions.

What's new for 2012:
As noted previously, changes in readmission payments for hospitals, along with other government initiatives such as the Accountable Care Organizations, are creating new opportunities for home care RTs. We're exploring which models may be most effective in responding to these opportunities.

Why home care RTs should join this section:
I would say that you must get involved to effect change and be most aware of opportunities available to you. I'm very proud that many prominent AARC officials came up through the section ranks, including some AARC presidents. Members may not think they can have that much impact, but they really can, and we have many examples of that in our history. It all starts by getting involved through something as simple as submitting a session or abstract to the AARC Congress, or even an article to the *Bulletin*. Many prominent RT authors got their start by submitting an article to the *Bulletin*, and I'm proud that we've had many first-time authors this past year.

Surface & Air Transport: When Time Is of the Essence

Who:
Steven Sittig, RRT-NPS, C-NPT, FAARC

What:
Pediatric Transport Clinical Specialist, Mayo Clinic

Where:
Rochester, MN

Surface & Air Transport Section Chair Steven Sittig

Top benefits of your section:
The section *Bulletin* is a top benefit as it offers current information about teams around the nation, reviews for the neonatal-pediatric transport exam, issues facing the transport RT specialist, and many times information for neonatal-pediatric based RTs as well. Our discussion list on AARConnect is also a great benefit because it gives us the chance to post questions on issues or equipment and receive responses from fellow section members everywhere.

What you have done recently:
We are currently helping RTs in Costa Rica participate in neonatal and pediatric transport there. Since neo/peds is a specialty for many of us, being able to help improve care for this patient population on an international level is a great opportunity. Secondly, during the last AARC Congress, I submitted a resolution to the AARC Board of Directors to give free section membership to RTs on the U.S. Air Force's Critical Care Air Transport teams. This resolution was approved, but modified to allow military RTs to join any specialty section for free.

What's new for 2012:
We are going to start a regional representative program to help recruit membership to the AARC and Transport Section. We feel these regional representatives know where the transport teams are located and the RTs who staff them. This idea was put forth by our chair-elect, Billy Hutchison, BA, RRT-NPS.

Why transport RTs should join this section:
By being a member of the section, you have the ability to contact transport RTs everywhere to get answers to your questions or help with issues related to scope of practice. Just this year I was contacted by a transport team that was being challenged by another profession about the RT's scope of practice in administering medication on transport. I was able to quickly garner instances where transport RTs administer medication, and I also looked closely at this team's state RC scope of practice, which did not preclude the ability for RTs to administer medications on transport once they were trained and signed off by the medical director. I forwarded the information to this program, and the issue was resolved. RTs there are now administering medications on transport.

Diagnostics: Labs Helping Labs

Who:
Matthew O'Brien, MS, RRT, RPFT

What:
Pulmonary Diagnostic Lab Manager, University of Wisconsin Hospital and Clinics

Where:
Madison, WI

Diagnostics Section Chair Matthew O'Brien

Top benefits of your section:
The No. 1 benefit is networking on AARConnect. When you want to offer a new procedure, having input on the policy, report output, and billing can be invaluable. Our section *Bulletin* is another important benefit. Our goal is to offer timely updates regarding diagnostics and topics of interest submitted by the membership. Finally, insight into other perspectives gained from the dialogue shared via our discussion list on AARConnect allows us to broaden our view on how other labs operate. It is easy to become isolated when working in a specialty area of respiratory care. Specialty section membership keeps that from happening.

What you have done recently:
Our biggest project has been to develop lecture and symposium ideas for the AARC Congress. Listening to what the section membership is discussing and interested in helps me suggest topics that will appeal to the widest range of diagnosticians.

What's new for 2012:
Diagnosticians are facing several CPT coding changes in 2012 that will impact procedure volume and possibly revenue generation for some labs. One example is the designation of diffusion capacity as an add-on code by the American Medical Association's CPT Editorial Panel, a change that requires this test to be performed with another diagnostic test in order to be billed. There is some controversy on this and other changes, so we're investigating how to make appeals, as well as exploring how new codes are suggested.

Why diagnosticians should join this section:
The networking capability our section offers is tremendous. We provide a wide variety of knowledge, and our members truly enjoy helping each other. If you need policy or equipment or billing advice, we can help you succeed.

Neonatal-Pediatrics: Kids Come First

Who:
Cynthia White, BA, RRT-NPS, FAARC

What:
RT-III, Research, Cincinnati Children's Hospital Medical Center

Where:
Cincinnati, OH

Neonatal-Pediatrics Section Chair Cynthia White

Top benefits of your section:
Our discussion list on AARConnect gives us the ability to contact any member of the section, expanding our network of other neonatal and pediatric specialists from around the world. We can ask questions and seek information, and take advantage of guidelines, procedures, and best practice tips shared among members. Another big benefit is our section *Bulletin*, which gives us links to recent abstracts published in peer-reviewed journals that directly relate to our patient population and to the profession of respiratory care.

What you have done recently:
We've been participating in the AARC's "Hospital to Home" project to design a few outcome studies that directly relate to the impact of respiratory therapy initiatives. Following suit with the Adult Acute Care Section, we're also looking at initiating a journal club to allow members to discuss recent evidence-based journal articles and become more fluent in critical appraisals and different levels of scientific evidence. My vision is that these discussions will allow us to relate evidence back to application and critical thinking at the bedside.

What's new for 2012:
We are excited about the new smart phone app for AARConnect that enables section members to respond to their discussion lists from their smart phones.

Why neonatal/pediatric RTs should join this section:
I always try to encourage new members to join the section for the No. 1 benefit of being able to network with their neonatal/pediatric peers everywhere. ■

Come Join Us!

Joining one or more of the AARC's specialty sections is easy. Just go to https://secure.aarc.org/sections/ to add section membership to your AARC membership package. Section membership can be added at any time of the year. ■

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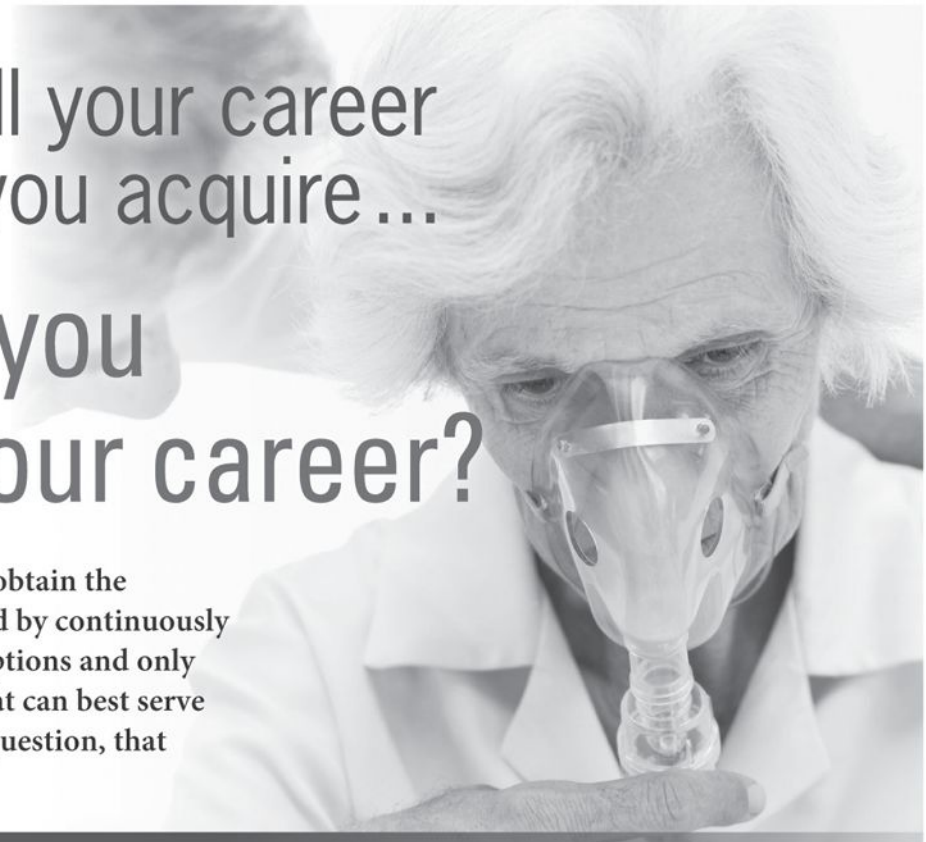

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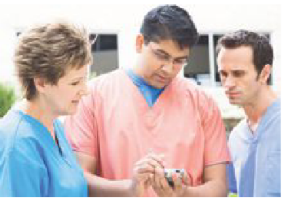
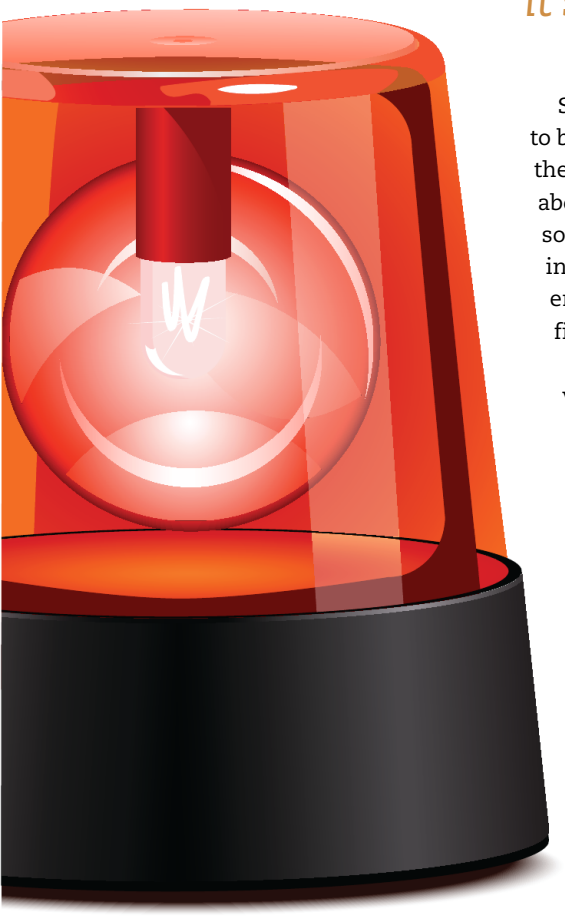




What's That **Sound** I Hear?

by Debbie Bunch



If you're in the typical ICU, it's probably an alarm

Modern medical technology is great, but all the buzzing and beeping that goes along with it is enough to make the average clinician (and patient) long for a little peace and quiet.

Step into any ICU in the country and you're likely to be met with a cacophony of sound. Phones ring at the nurses' station. Health care professionals hurry about their daily tasks. And in between it all are the sounds of alarms going off in patients' rooms, alerting clinicians to everything from profound hypoxemia to a lost pulse oximetry signal because the finger probe has fallen off the patient.

The problem for busy clinicians is determining which alarms require their immediate attention and which don't. That was the crux of a recent survey conducted by the Healthcare Technology Foundation (HTF) with support from the AARC and eight other organizations, including the U.S. Food and Drug Administration, ECRI Institute, and the U.S. Department of Veterans Affairs.

RTs lead the pack

"This is the second time the survey was conducted," explains HTF Secretary Jennifer Ott, MSBME, CCE, project manager at Northstar Management Company in St. Louis, MO. "The first clinical alarm survey was conducted in 2005–2006 and was an initiative to improve patient safety by identifying issues and opportunities for enhancements in clinical alarm design, operation, responses, communication, and appropriate actions to resolve alarm-related events."

WHAT RTs HAD TO SAY

The clinical alarms survey conducted by the Healthcare Technology Foundation last fall garnered an overwhelming response from respiratory therapists, who made up 63% of the sample. Here are the RT-specific results from a rough review of data filtered for respiratory care:

RTs FELT THE MOST IMPORTANT ISSUES CONCERNING ALARMS WERE:

1. **FREQUENT FALSE ALARMS** that led to reduced attention (27.2%)
2. **DIFFICULTY UNDERSTANDING** the **PRIORITY** of an alarm (18.1%)
3. **DIFFICULTY IDENTIFYING** the **SOURCE** of the alarm (16%)
4. **INADEQUATE STAFF** to **RESPOND** to alarms (14.8%)
5. **DIFFICULTY** in **HEARING ALARMS** when they occur (14.6%)

At the time, the perception at the HTF was that alarms were causing problems, but the extent to which those problems were affecting patients and caregivers had yet to be determined. The 2011 survey, which is available at www.thehtf.org, sought to further clarify the issue in advance of the Association for the Advancement of Medical Instrumentation's Medical Device Alarms Summit held in October 2011. "The HTF Clinical Alarm Task Force felt it beneficial to re-survey at the five-year interval to determine changes in the profession's perception of clinical alarm issues, improvements made at their facilities, and priorities for future action."

The initial survey was conducted without direct input from the AARC but still garnered a respectable response rate from respiratory therapists nationwide, who made up 14% of the sample. With the AARC's support, the HTF heard from RTs loud and clear last fall. "In the 2011 survey, HTF emphasized contacting more professional groups to complete the survey, thus the initial contact with AARC," says Ott. "This prompted an overwhelming response from RTs, 63% or 2,071 completed surveys." RTs constituted the largest group of respondents, followed by nursing at 31% or 1,324 completed surveys. "We truly appreciated the effort AARC made in sharing the announcement and encouraging their members," says Ott.

Room for improvement

Overall results from the 2011 survey suggest much work needs to be done to bring clinical alarms in line with patient safety. Nearly one in five respondents reported adverse events related to alarms in their facilities, and nuisance alarms were cited as a problem in deterring an effective response to meaningful alarms. Respondents also agreed strongly with the statement that "alarm sounds and/or visual displays should be distinct based on the parameter or source" and favored the use of smart alarms, central alarm management, and clinical alarm improvement efforts. (See sidebar above and on page 41 for respiratory therapist-specific results.)

AARC members agree there is room for improvement. "There are far too many devices that have alarms, and with all alarmed devices there are too many false alarms," says Lorraine Bertuola, BA, RRT, director of clinical services/respiratory therapy at Respiratory Health Services in Towson, MD. "Clinicians have a tendency to tune out the alarms that are not as important, thus allowing alarms to continuously alarm. This is disturbing and annoying to our patients."

Keith Lamb, RRT, an RT II at Christiana Care Health System in Newark, DE, and chair of the AARC's Adult Acute Care Section, says the biggest problem he sees with alarms is the inability of clinicians to immediately recognize and differentiate between those that are important and those that are not. "Since RTs often cover multiple areas, they rely heavily on nurses who are in closer proximity to the patient to recognize important alarms and relay them to the RT appropriately. This

(continued on page 42)

38.7% said **ENVIRONMENTAL NOISE** competed with alarms, but 44.8% did not think this was a problem.

61% felt **ALARM INTEGRATION** and **COMMUNICATION SYSTEMS** were **BENEFICIAL** for alarm management, and 77.1% thought **SMART ALARMS** would be the most effective in **REDUCING FALSE ALARMS** and improving clinical response.

ALARM POLICIES and **DOCUMENTATION** were followed at over 75% of the RTs' facilities.

52.2% felt **CENTRAL ALARM MANAGEMENT** would be **HELPFUL** in alarm management but noted the **DESIGN** of such a system should **ALLOW FOR DIRECT CAREGIVER CONTACT** with the alarm rather than a delayed interpretation and response.

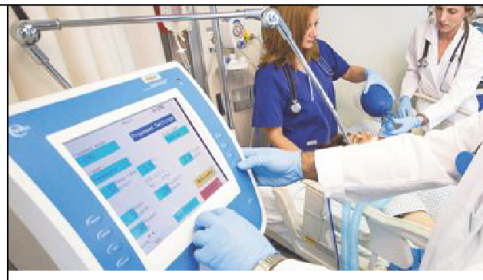
71.5% felt **NUISANCE ALARMS OCCUR FREQUENTLY**, 66.4% said they **DISRUPT PATIENT CARE**, and 75.5% said they cause **REDUCED TRUST** and inappropriate turn off.

44% **DID NOT KNOW** of any clinical **ALARM ISSUES** in their facilities, but 16.5% said there had been issues.

66.7% felt **STAFF WERE SENSITIVE** to alarms and **RESPONDED QUICKLY**, and 71.9% said RT equipment has **DISTINCT SOUNDS AND DISPLAYS**. However, if the device count increased and competing alarms existed, 50.2% believed alarm confusion could occur.

49.4% were **NOT AWARE** of any **ALARM IMPROVEMENT INITIATIVES** in their facilities over the last year. Those who were aware of alarm improvement initiatives said most initiatives were related to **POLICY** or **DOCUMENTATION**, with a few mentioning **CENTRAL ALARM WATCHING** and/or eICU (electronic ICU). Technology revolved around alarm integration with nurse call and other central monitoring opportunities.

62.1% felt alarms are **RELATIVELY EASY TO SET**, and 74.4% said RT-related **ALARMS ARE ADEQUATE**. However, 28.7% felt that there have been frequent instances where alarms were missed.



RTs Weighed in on SPECIFIC ISSUES in the General Comments Section as Well:

- RTs felt all nuisance alarms should be investigated and defended the reasoning behind alarms, but they also felt proper alarm setting by patient condition would reduce the potential for nuisance alarms. However, they noted that some RT procedures, such as ventilator weaning and treatments, cause alarms that can be silenced only for short periods, leading to further desensitization.

- Most RT concerns focused on alarms outside the ICU setting or in isolation rooms or other locations where closed doors or far proximity from the nurses' station would prevent alarms from being heard and responded to, pointing to the need for integrated systems that can help triage alarms from remote locations.

- RTs raised concern about further integration that could potentially make the alarm problem worse, noting in one case, "Alarms for alarms, really?!" ■

needs to be done in order to avoid the 'little boy who cried wolf' syndrome in which providers become complacent about responding to alarms when they have been needlessly summoned repeatedly to respond to alarms."

Cynthia White, BA, RRT-NPS, FAARC, an RT-III at Cincinnati Children's Hospital Medical Center in Ohio and chair of the AARC's Neonatal-Pediatrics Section, calls for measures to ensure relevant alarms are not dismissed and says that is what's happening now in her hospital's unique pediatric transitional care center, which serves as an 18-bed long-term ventilator and tracheostomy unit. "Having extra alarms in this setting, such as continuous end tidal CO_2 monitoring and all the ventilators connected into the callbell system, has been a priority," she says. "The intention of these alarms is to recognize a ventilation or decannulation emergency more rapidly." The hospital has also incorporated cameras in every room and has trained monitor techs to watch them 24/7. Clinician response time and alarm validity are being measured to facilitate a more efficient response as well.

Toss the bathwater, keep the baby

Solving the nuisance alarm problem is certainly central to improving patient safety in the ICU. But while no one wants to be the "little boy who cried wolf," no one wants to be the clinician who misses an important alarm either. RESPIRATORY CARE Editor in Chief Dean R. Hess, PhD, RRT, FAARC, assistant director of respiratory care at Massachusetts General Hospital in Boston, believes in erring on the side of caution.

"I would venture to guess that tens of thousands of lives have been saved as the result of an appropriate response to an alarm," he says. "So let's not throw out the baby with the bathwater." He also notes that just because an alarm may be labeled a "nuisance" doesn't mean it is a false alarm.

"The ventilator will not alarm 'High Pressure' if the pressure is low. It will not alarm 'High Rate' if the rate is slow," he continues. "The ventilator is just a dumb machine. It cannot distinguish high pressure because the patient is coughing or high pressure due to a life-threatening tension pneumothorax. Either way, it demands clinician intervention — despite the fact that the high-pressure alarm due to coughing or asynchrony may be a nuisance for the clinician."

A few good ideas

Dr. Hess believes part of the solution lies in ensuring ventilator and other alarms are set per the clinical needs of the patient rather than per unit policy, which is often the case. "Often there is no distinction made between the patient with severe respiratory failure and the patient nearing the time of extubation. An alarm that might signal a life-threatening event in one case might be a nuisance in another case."

Lorraine Bertuola agrees. "I believe device alarms should be re-evaluated and only critical alarms should trigger audible alarms. This will eliminate many of the nuisance alarms heard throughout the clinical environment." For example, she suggests a feeding tube pump does not need an audible alarm. Instead, this alarm could be registered as a flashing light on a device panel. Other devices could be handled similarly, helping clinicians focus on only the meaningful alarms and helping patients sleep better at the same time.

Keith Lamb would like to see alarms engineered so that their tone and volume are keyed to the acuity of the alarm situation. "For example, a lost pulse oximetry signal alarm would be notably different from that of an actual reading demonstrating profound hypoxemia. A single high-pressure alarm would be different from a constant low-pressure alarm, etc."

Dr. Hess envisions a single device that could capture all of the alarms and make better sense out of them for the clinician. "One approach that has not been taken to my knowledge is the use of a device — let's call it an 'alarm box' — that takes the alarm inputs from multiple devices and filters them to a single alarm. The clinician could program which alarms (individually or in combination) would be high, medium, and low priority." That would overcome the current situation in which alarms are set by device manufacturers without regard to other devices and clinicians who set alarms without regard to other clinicians. "Such a device could also be moved away from the bedside to minimize alarming the patient with the alarms," he says.

The ball is rolling

The HTF's Jennifer Ott notes that alarm hazards came in at number one on the ECRI Institute's 2012 Top 10 Health Technology Hazards list and says solving the problem will take input from clinicians, manufacturers, regulatory groups, and others. The survey conducted by her organization last fall and presented at the Medical Device Alarms Summit in October was an attempt to start the process. "Our next goal is to continue to analyze the data and continue to work with various clinical stakeholders like the AARC to develop white papers, peer-reviewed publications, articles, etc.," she says. "We look forward to further collaboration." ■

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Presenters:
Charlie Strange, MD
James K. Stoller, MD MS FAARC
Robert Sandhaus, MD PhD

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AARC Celebrates Its 65th Anniversary

Accomplishments Mark Major

Many of us still think of respiratory care as a fairly young profession — and compared to medicine and nursing, it certainly is. But the years have gone by and, believe it or not, this month the American Association for Respiratory Care, which has been around nearly as long as the profession itself, will turn 65 — an age that speaks more of maturity than youth, more of "we've arrived" than "we're on the way."

Clearly, we have stood the test of time. But what have we accomplished since that handful of "inhalation therapists" gathered with physician sponsors in Chicago on April 15, 1947, to legally charter the "Inhalation Therapy Association" as a not-for-profit entity in the state of Illinois? To get the answer, we turned to five long-time veterans of the profession for their take on the most significant achievements of the AARC during the last six and a half decades. Here are their top-five lists.

My Top 5

George Gaebler, MSEd, RRT, FAARC

AARC Member Since 1976

1 The AARC fostered licensure of the respiratory therapist: The first state to obtain respiratory care licensure was California in 1982. We now have only one state left without licensure, ensuring the majority of patients are being cared for with the assurance that their respiratory therapist is educated and competent.

2 Name change: The name change in 1986 from American Association for Respiratory Therapists (AART) to American Association for Respiratory Care (AARC) identified the real meaning of what our profession does and has been a major thrust toward recognition by other groups, including patients, state and federal governments, and other professional groups.

3 Associate's degree entry: The AARC's drive to move the profession to associate's degree entry level in the mid 1990s was clearly a game changer for the profession. It marked a point where the profession attained status with other professions in terms of education and aided greatly in many states achieving licensure.

4 The 1996–1998 Restructuring Taskforce: This effort resulted in the reformatting of the Association's Bylaws to allow for the inclusion of Specialty Section chairs as Board members and at-large Board members elected by the active membership. These new Board members have added an invaluable voice in shaping the activities of the AARC. As a testament to this change, two of our last three AARC presidents came from people who started out as Specialty Section members on the Board.

5 The AARC Political Advocacy Contact Team (PACT): In March our PACT made its 13th visit to Washington, DC, to meet with members of Congress about key respiratory care legislation, including our Medicare Respiratory Therapy Initiative, pending in the House of Representatives as H.R. 941.

George Gaebler is director of respiratory care at Upstate University Hospital and Golisano Children's Hospital in Syracuse, NY, and president-elect of the AARC.

Milestone for the RC Profession

My Top 5

David W. Robbins, DC, RRT, FAARC

AARC Member Since 1969

1 **An excellent administrative team.** The AARC's hiring of Sam Giordano, MBA, RRT, FAARC, Ray Masferrer, RRT, FAARC, and an excellent administrative team was instrumental in shepherding the Association through major challenges and opportunities.

2 **Developed Specialty Sections.** These groups have provided for more direct input from the profession, with frequent Internet postings and the AARConnect discussion links.

3 **Organized an excellent set of meetings.** The annual Summer Forum® and AARC Congress® combine to meet our professional educational and networking needs.

4 **Developed continuing education.** The AARC's vast array of continuing education opportunities ensures we can all meet requirements for our state licenses to practice.

5 **Maintained an effective professional attitude.** By modeling professionalism, the AARC has encouraged professionalism.

David Robbins heads up Robbins & Associates/Sunset Seminars, Health Care Management/Education Consultants, in Miami, FL.

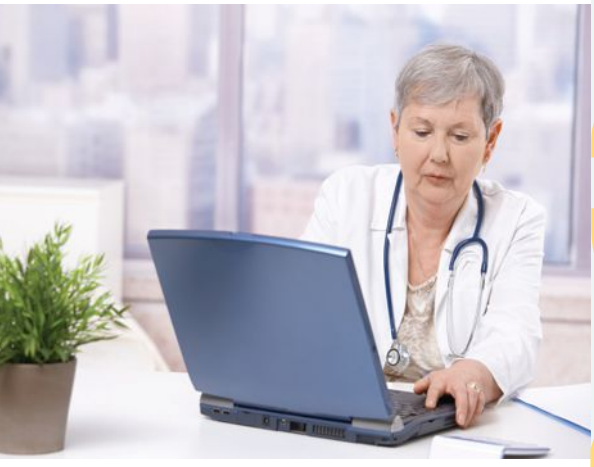
Blog Your AARC Memories

Connect with your fellow RTs on AARConnect and share your memories of the AARC over the last 65 years.

More Accomplishments

65th Anniversary

Another reason the AARC was founded: "To provide education of the general public in pulmonary health promotion and disease prevention."



My Top 5

Trudy Watson, BS, RRT, FAARC

AARC Member Since 1971

1 **Provision of continuing education opportunities.** The AARC Congress, Summer Forum, workshops, online courses, Professor's Rounds℠, webcasts, journals, Specialty Section programs, AARConnect discussion lists, etc., all address the founding purpose of the Association, which is "to advance the science, art, and technology of the profession."

2 **Publication of Respiratory Care®, the only recognized, peer-reviewed science journal for our profession, as well as *AARC Times*, the *Respiratory Care Education Annual*, Section *Bulletins*, and other educational materials.** These publications educate respiratory therapists, physicians, and others on the art and science of respiratory care, current practice, equipment, and professional standards.

3 **Establishment of quality standards.** From its earliest days, the Association has focused on the development of high-quality, professional practitioners, and the delivery of quality clinical practice guidelines.

4 **Globalization of the profession.** The AARC has provided opportunities to promote the profession around the world through the establishment of international affiliates, co-sponsorship of the International Fellowship Program, support of the International Council for Respiratory Care™, participation in international meetings, translation of our publications into multiple languages, and sponsorship of the International Respiratory Convention and Exhibition.

5 **Advocacy for therapists and patients.** The AARC has offered countless resources to assist its state societies in seeking and maintaining licensure, and ongoing resources to monitor state and federal regulation and legislation that impact the scope and practice of respiratory care. Educational resources for the public such as YourLungHealth.org and the Peak Performance USA® program, and our participation in national education campaigns such as DRIVE4COPD, have helped to address another reason the AARC was founded: "To provide education of the general public in pulmonary health promotion and disease prevention."

Trudy Watson is a retired RC educator who currently serves as chair of the Respiratory Advisory Committee at Trinity College of Nursing and Health Sciences in Rock Island, IL. She is also the AARC's historian.

My Top 5

Dianne Lewis, MS, RRT, FAARC

AARC Member Since 1975

1 2 3 4 5

Formation of the first national association. Without the AARC's founding mothers and fathers, most of us would not be here today as respiratory therapists.

Support for state licensure. This showed we were protecting the public by ensuring RTs were educated and credentialed.

Development of Clinical Practice Guidelines. This is near and dear to my heart because I chaired the oxygen therapy guideline group, which resulted in the first Clinical Practice Guideline published in **Respiratory Care**.

Respiratory Care's listing in *Index Medicus*, the premier database of medical journals worldwide. Thanks to much preliminary work by AARC Associate Executive Director Ray Masferrer, RRT, FAARC, the Journal's entry in the database became a reality while David Pierson, MD, FAARC, was editor in chief.

Expansion of the AARC and respiratory care outside the United States. The AARC's leadership and fostering of international respiratory care fellowship has increased our knowledge, as well as our membership.

Dianne Lewis is a sales representative at Rotech Oxygen and Medical Equipment in Naples, FL.

Blog Your AARC Memories

Connect with your fellow RTs on AARConnect and share your memories of the AARC over the last 65 years.

More Accomplishments

65th Anniversary

Blog Your AARC Memories

Connect with your fellow RTs on AARConnect and share your memories of the AARC over the last 65 years.

My Top 5

Thomas Madrin, BS, RRT, FAARC

AARC Member Since 1970

1 **The evolution of Respiratory Care.** Under the direction of Pat Brougher, MEd, RRT, FAARC; David Pierson, MD, FAARC; and now Dean Hess, PhD, RRT, FAARC, the Journal is highly regarded as a scientific medical journal. The scientific depth and quality of the Journal are positive reflections on the entire respiratory care profession.

2 **Development and ongoing expansion of the Open Forum® at the AARC Congress.** These poster presentations stimulate creativity in research and clinical practice, and spread creative and frequently unique ideas from a very local practice to national acceptance. The **Open Forum** also provides a venue for students, as well as therapists, to develop their research, writing, and presentation skills.

3 **Clinical Practice Guidelines.** The AARC's development of these guidelines has promoted significant improvement in quality of care through peer-reviewed best practice clinical protocols published in **Respiratory Care** and posted on the Journal website.

4 **The 2015 and Beyond Task Force.** This task force was created to look at the clinical and scientific findings and technology advancements impacting health care, plus the knowledge, skills, and attributes RTs will need to meet them in the future. If fully addressed, the results of this project will allow the profession to maintain or improve its position in the health care community.

5 **Gradually but continuously raising the entry-level requirement.** Over the past 65 years, medical knowledge, scientific research, and new technology — including computerization and sophisticated diagnostic/therapy devices — have dramatically increased expectations placed on respiratory therapists. The AARC has moved us from OJT (on-the-job-trained) to technical certificates, to associate's degrees, and will perhaps move us to the bachelor's degree level or higher in response to the 2015 and Beyond findings.

Thomas Madrin is a staff therapist who provides home care services in the Atlanta, GA, metro area.

2012 Summer Meetings

July 12–15, 2012 Thursday–Sunday

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July 13-15

Concurrent Sessions for Managers and Educators

Pre-Summer Forum Sessions

July 12

- NBRC-Sponsored Item Writing Workshop
- CoARC Meet the Commission
- New Special Session – Building a Simulation Toolbox

Post-Summer Forum Session

July 15

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For complete details, visit the website at

Here are just a few of the Summer Forum sessions that will be offered*:

Plenary Session

■ THE TRANSFORMATION OF RESPIRATORY CARE: MORE OF THE SAME OR A DEFINING MOMENT FOR THE PROFESSION?

In this presentation, Patrick Dunne, RRT, FAARC and past-president of the AARC will dissect the current and pending changes to both healthcare as a whole and the profession of respiratory therapy. Are significant changes really possible? What must the profession do to keep pace? Attend this riveting keynote presentation to find out!

Management Section

■ VIEW FROM THE C SUITE

Back by popular demand! Last year one hospital executive described his personal journey from a bedside RT to a hospital president. This year a new executive will highlight the skills, traits and attributes RTs must possess if they aspire to have an office in the C-suite. Two seasoned RT managers will also discuss creating a culture of accountability in your RT department and whether or not there is a difference between management and leadership.

■ PERFORMANCE IMPROVEMENT: TOOLS YOU CAN USE!

This symposium will educate managers on how to choose a PI project, what methodology to use and what to do with the data. Attendees will also participate in an interactive workshop to develop these skills, report their work, and receive live feedback on their performance. The presenter will provide useful tools and templates for managers to take home with them!

Education Section

■ TAKING A PROGRAM FROM GOOD TO GREAT

Is enrollment down? Are the pass rates for your program not where you'd like them to be? Are your medical director and advisory committee fully engaged with your program? Attend this symposium to find out how to take your program to the next level.

■ ECONOMICS 101 FOR RESPIRATORY CARE PROGRAM DIRECTORS

This lecture is ideally suited for the program director that lacks experience in understanding budgets and calculating ROIs. The presenter will discuss the importance of understanding the economics of managing an RT program. Learn why the economics of your program are just as important as your performance and outcome measures.

Pre- and Post- Summer Forum Special Sessions will be offered at a nominal charge.

Most sessions at the AARC Summer Meetings are approved for CRCE® contact hours. All programs are presented at the Santa Fe Hilton at Buffalo Thunder just outside Santa Fe, NM.

Discounts are available for hotel and travel.

* Topics are subject to change.

www.AARC.org/education/meetings

AARC Celebrates Its 65th Anniversary

That Was Then,

So, you read what long-time therapists in the profession believe are the AARC's top accomplishments over the past 65 years. What about the next 65? We asked three up-and-coming RTs what they think their generation of RTs can and should be focusing on in the coming decades.

Arzu Ari, PhD, RRT, FAARC

AARC Member Since 2001

Support clinical research. Clinical research is vital not only for the future expansion of our knowledge and its possible implementation at the bedside, but also our professional growth and representation as respiratory therapists. If we are to be responsible for working in accordance with scientific knowledge and improving the quality of practice, the AARC must support a research-based practice for professional patient care.

Promote advanced-level education. According to the AARC Human Resource Survey, most RC program directors and educators will retire in the next 10 years. In order to eliminate problems in recruiting qualified faculty who meet all the academic preparation requirements, the AARC should develop policies to promote graduate-degree programs in the profession and prepare training programs for future faculty members.

Foster international relationships. The AARC should increase its affiliations with international organizations. I believe this is essential in fostering global networking and professional opportunities for RTs in the nation and around the world.

Create a section on aerosols. Although aerosol therapy is the most common treatment used in our profession, there is no specialty section on aerosols. Creating a specialty section on aerosols would foster connections between members in this specific area of research and update them on industry developments.

Promote specialty training. The AARC can actively promote specialty training both in school curricula and post graduate education programs to qualify RTs for clinical specialist, management, research, and education positions, thus broadening the range of potential employment settings in which respiratory therapists can have a significant impact.

Arzu Ari is a professor of respiratory care at Georgia State University in Atlanta, GA, and a member of the AARC International Council for Respiratory Care and International Committee.

This Is Now

Darcy O'Brien-Genrich, MPA, RRT

AARC Member Since 1995

1 **Support continual education.** This will even further broaden the respiratory care profession and allow us to be seen as physician extenders to initiate diagnostic and therapeutic orders or care plans.

2 **Expand the respiratory care leadership program.** This program would provide powerful leadership and direction for respiratory care departments throughout the country in preparation for the dramatic changes in health care on the horizon.

3 **Continue to work with federal and state governments to build recognition for respiratory care and support reimbursement of respiratory care services.** Lobbying in Washington, DC, and state legislatures is necessary to ensure our patients receive the high-quality care they deserve.

4 **Develop updated, evidence-based Clinical Practice Guidelines.** Keeping the AARC CPGs current will ensure RTs everywhere have the references they need when updating policies/procedures and educating physicians on the latest evidence.

5 **Update protocols and clinical time standards every five years.** This will help leaders keep up with the latest and greatest approaches to respiratory care.

Darcy O'Brien-Genrich is manager of respiratory care services at The Nebraska Medical Center in Omaha, NE.

Blog Your AARC Memories

Connect with your fellow RTs on AARConnect and share your memories of the AARC over the last 65 years.

Then and Now continued

65th Anniversary

Brian Cayko, MBA, RRT

AARC Member Since 2008

Increase our legislative presence. In today's economy and uncertain level of health care reform, reimbursement for RTs inside and outside of hospitals is well below what is needed to serve our patients and grow our profession. Without increasing the RT's scope of practice and number of procedures we get reimbursed for, we will continue to watch our RC departments shrink in size and find ourselves working only in critical care departments. This is not what is best for our patients at any level.

Increase the number of bachelor-degreed RTs working at the bedside. In order to achieve a level of reimbursement to appropriately care for our patients and actually grow our profession, we will need to better prepare our clinicians with an education that results in a more academically rounded respiratory therapist who can think and communicate with nurses, physicians, and administrators on their level.

Continue to improve on current campaigns to increase public awareness of the respiratory therapist. As an educator in a rural state, I see high school and college students fighting "tooth and nail" to gain entry into overly competitive LPN and RN programs. They are turning away honor students while many RC-program seats go unfilled.

Foster the future leadership of the AARC. The last few years have proven to be a tumultuous time in the realm of health care, and the future shows no signs of easing up. Current initiatives such as the AARC Leadership Institute, which will prepare RTs to excel in research, education, and management, should be brought to the forefront to groom future leaders.

The profession needs to increase an RT's education level to meet an expanded role. We all need to be willing to sit at this table and work toward a solution that will place respiratory care in the professional ranks with other health care providers, where it belongs. We know where we need to go. Let's work together to get there.

Brian Cayko is director of clinical education at Montana State University College of Technology, Great Falls, in Great Falls, MT.

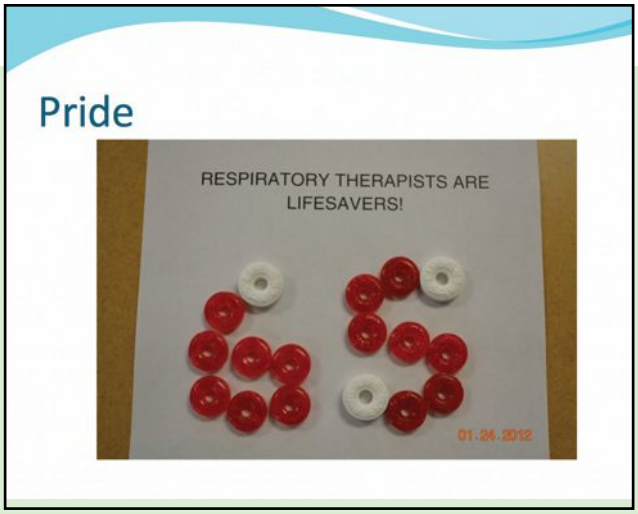
AARC Awards RTs for Their "Fun with 65!"

Earlier this year we hosted a friendly competition on our website called "Fun with 65" to give AARC members the opportunity to help celebrate the AARC's 65th anniversary. The premise was simple: creatively depict the numeral "65" in picture, video, or song.

RTs from around the country participated. We got lots of submissions of respiratory equipment and supplies. We also received photos of cute kids and dogs — who doesn't like them? But our winners were all chosen based on their creative ideas and energy put forth in preparing the entries.

Now the results are in:

First place is awarded to Nancy Graff, RRT, RPSGT, of Spectrum Health–Grand Rapids Hospital, Grand Rapids, MI. Her entry included photos of care-



Winner ... A slideshow with music

3rd place winner

View all the entries online

2nd place winner

Go to www.AARC.org to see all the contestants of "fun with 65."

fully arranged RC equipment in a slideshow set to inspirational music. She won a $250 gift certificate to the AARC Store.

Second place goes to Karla Gilliam, BS, RRT, for the Respiratory Care Club of Piedmont Technical College in Greenwood, SC. Her entry offered photos of their club with old and new respiratory care equipment to show the progress of the respiratory care profession over the years. She won a $100 gift certificate to the AARC Store.

Third place is bestowed upon Karen Schell, MHSc, RRT-NPS, RPFT, for Newman Regional Health in Emporia, KS, for their department's lineup of RTs whose years of respiratory care experience add up to 65. She won a $50 gift certificate to the AARC Store.

We thank everyone who entered the contest to have "fun with 65." To see all the contest entries, visit www.AARC.org. ■

April 15, 1947

The Inhalation Therapy Association is formally chartered as a not-for-profit entity in the state of Illinois. The new Association boasts 59 members, 17 of whom are from various religious orders.

1947

Albert Andrews, MD, outlines the structure and purpose of a hospital-based inhalation therapy department in his book, "Manual of Oxygen Therapy Techniques."

1950

The New York Academy of Medicine publishes a report, "Standard of Effective Administration of Inhalation Therapy," setting the stage for formal education for people in the field.

1955

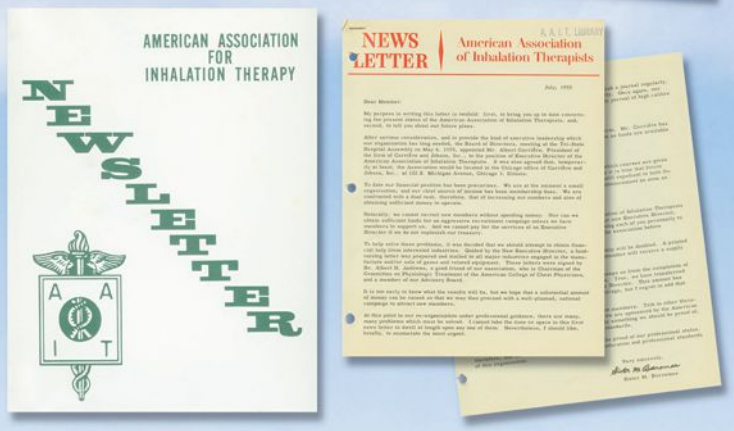
The American Association of Inhalation Therapists holds its first annual meeting and convention at the Hotel St. Clair in November in Chicago, IL.

65 Years of the AARC: 1947–2012

by Thomas J. Kallstrom, MBA, RRT, FAARC
Associate Executive Director/Chief Operating Officer

On April 15, 1947, what today is known as the American Association for Respiratory Care was formally incorporated as the Inhalation Therapy Association (ITA), a not-for-profit entity in the State of Illinois. Today, 65 years later, the AARC continues its mission to proudly serve its members and patients who are cared for by respiratory therapists. As you can see from the following summary of milestones, through all of these years your association has advocated to assure that patients would have access to high-quality care provided by the respiratory therapist. In addition to this advocacy mission, we have striven to provide our members with high-quality post-pedagogical education, much of which today is offered through a variety of formats (the AARC Congress and Summer Forum) and media (webcasts, digital, and print).

(continued on page 56)



1956

The AAIT begins publishing a peer-reviewed science journal, Inhalation Therapy (now Respiratory Care).

AARC advocates for (and it was later accepted) that the American Medical Association (AMA) House of Delegates adopt a resolution calling for the use of the "New York Essentials" in the creation of schools of inhalation therapy.

1957

The AAIT leads the adoption by AMA, American College of Chest Physicians, and American Society of Anesthesiologists of the "Essentials for an Approved School of Inhalation Therapy Technicians." The Essentials begin a three-year trial period.

1960

The AARC leads the effort with physician allies to create the American Registry of Inhalation Therapists (ARIT) to oversee a new examination leading to a formal credential for people in the field.

The ARIT administers the first Registry Exams for the RRT credential in Minneapolis, MN, on Nov. 18.

1962

The AMA House of Delegates grants formal approval for the "Essentials for an Approved School of Inhalation Therapy Technicians."

1963

The Board of Schools of Inhalation Therapy Technicians is formed in Chicago on Oct. 8.

1969

The American Association for Inhalation Therapy (AAIT) creates the Technician Certification Program to offer a credential (CRTT) based on the needs of RTs working in the profession who qualified to take the Registry Exams and earn the ARIT credential.

1970

AARC supports the Board of Schools of Inhalation Therapy Technicians, which becomes the Joint Review Committee for Respiratory Therapy Education (JRCRTE) on Jan. 9.

AARC also reaches out to our patients as their advocate and provides them with pertinent education that allows them to optimize self-management of their disease through our patient website YourLungHealth.org. Today and in the future, the need exists for RTs to go beyond the hospital environment to the patient's home, outpatient clinics, and the community. As health care evolves, there will be a need for RTs to use their knowledge, skills, and attributes as disease managers both inside and outside of the hospital. By achieving Medicare Part B status for the respiratory therapist, the profession will be better positioned to cover the continuum of care. The AARC will continue to push toward this goal. Today our profession is respected and often called upon by our colleagues in health care, industry, and government for our input. As we pass this milestone, the AARC will continue to be an advocate for our members and patients and look forward to continued success and milestone achievements in the next 65 years.

In our 65-year history, the name of the Association has changed four times from the Inhalation Therapy Association in 1954, to American Association of Inhalation Therapists (AAIT), to The American Association for Inhalation Therapy (AAIT) in 1966, to the American Association for Respiratory Therapy (AART) in 1973, to the American Association for Respiratory Care in 1986. Here are some other milestones in the Association's history.

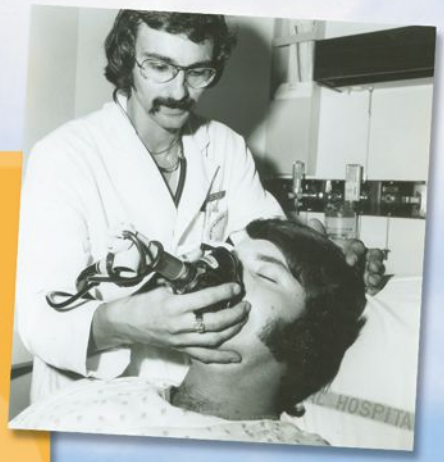
1974

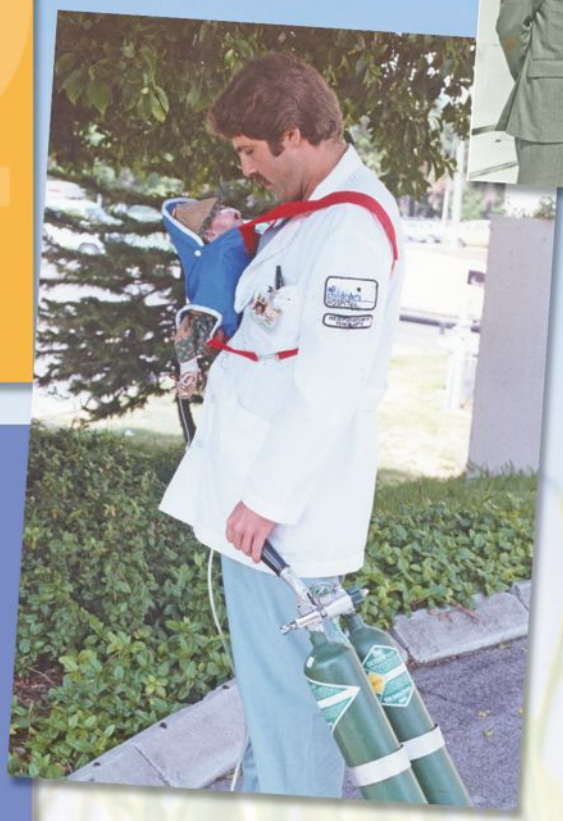
AART transfers ownership and administration of the CRTT exam and credential to the National Board for Respiratory Therapy (NBRT).

The AART forms the American Respiratory Therapy Foundation (ARTF) to support research, education, and charitable activities in the profession.

The National Heart and Lung Institute and American Thoracic Society convene a conference to review the scientific basis of respiratory care, concluding that intermittent positive-pressure breathing (the mainstay of RC treatment at the time) was of questionable value. The conference spurs the AART to begin scientifically examining treatments and modalities used in the profession.

AART is recognized as a profession by AMA.





1977

The Carter Administration's Department of Health, Education and Welfare (DHEW) Secretary, Joseph A. Califano, testifies before congressional hearings on health care costs, citing limited professional evidence for inhalation therapy services. The AART responds with letters to government officials and others explaining the vital nature of respiratory therapy services. These letters generate support from leading physicians and result in a reply from the DHEW on behalf of Secretary Califano, stating that, "it is a well-documented fact that respiratory therapy is an essential life-saving method of treatment" and "respiratory therapists are dedicated, responsible professionals."

In July, the AART publishes the first issue of *AARC Times* magazine, the news and features publication of the Association.

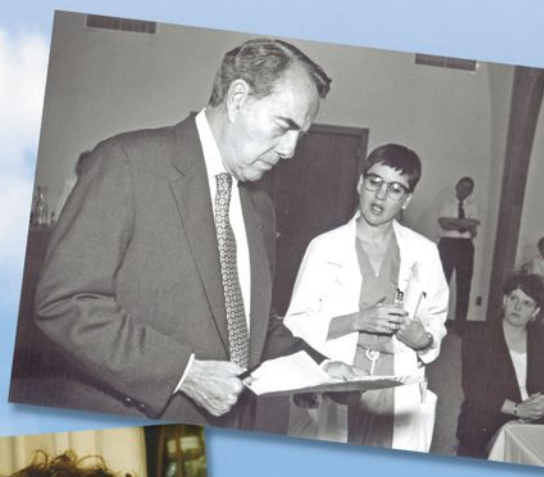
AART creates its continuing education recognition program.

1978

The Association forms its first Specialty Sections to meet the needs of RTs practicing in specific areas of the profession.

1979

In December, the Secretary of Labor issued a directive that IPPB not be reimbursed under the Black Lung Program. This was later challenged by AART. As a result of the Association's actions, this directive was reversed.



1980

The AART begins to actively advocate for licensure for RTs. A model practice act was developed and distributed to all charted affiliates, hospital associations, and medical groups.

1981

Congress creates Katie Beckett waivers, which provided reimbursement for ventilator care at home, which includes respiratory therapists.

AARC creates the Political Action Committee (AARCPAC).

1982

President Ronald Reagan proclaims the first National Respiratory Care Week℠.

The AART leadership was invited to meet with President Reagan in the Oval Office.

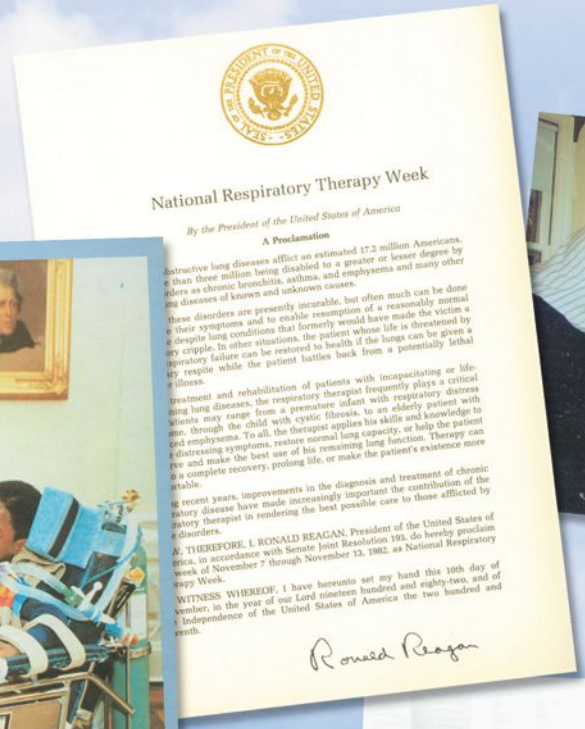
The AART supported a bill (S. 234) by Sen. Hatch to reimburse for Medicare Home RT visits.

1983

Congress passes a bill creating Hybrid Title 38 to better recognize and pay RTs who work in VA Health Systems.

1985

Congressman Ron Wyden and Sen. John Heinz introduce Medicaid legislation (H.R. 2703/S. 1249) for coverage of home visits by RTs for chronic ventilator-dependent patients.



National Respiratory Therapy Week

By the President of the United States of America

A Proclamation

obstructive lung diseases afflict an estimated 17.2 million Americans, e than three million being disabled to a greater or lesser degree by ders as chronic bronchitis, asthma, and emphysema and many other ng diseases of known and unknown causes.

these disorders are presently incurable, but often much can be done e their symptoms and to enable resumption of a reasonably normal e despite lung conditions that formerly would have made the victim a ry cripple. In other situations, the patient whose life is threatened by spiratory failure can be restored to health if the lungs can be given a ry respite while the patient battles back from a potentially lethal e illness.

treatment and rehabilitation of patients with incapacitating or life- ning lung diseases, the respiratory therapist frequently plays a critical atients may range from a premature infant with respiratory distress me, through the child with cystic fibrosis, to an elderly patient with ced emphysema. To all, the therapist applies his skills and knowledge to distressing symptoms, restore normal lung capacity, or help the patient rve and make the best use of his remaining lung function. Therapy can o a complete recovery, prolong life, or make the patient's existence more rtable.

recent years, improvements in the diagnosis and treatment of chronic ratory disease have made increasingly important the contribution of the ratory therapist in rendering the best possible care to those afflicted by e disorders.

W, THEREFORE, I, RONALD REAGAN, President of the United States of erica, in accordance with Senate Joint Resolution 193, do hereby proclaim week of November 7 through November 13, 1982, as National Respiratory apy Week.

WITNESS WHEREOF, I have hereunto set my hand this 10th day of vember, in the year of our Lord nineteen hundred and eighty-two, and of Independence of the United States of America the two hundred and venth.

Ronald Reagan

1989

AARC does a second survey as requested by Illinois Rep. Durbin (now senator) to determine support for extension of the smoking ban on all airline flights. This law was passed.

The AARC, after several years, is successful in getting the designation "Inhalation Therapy" changed to "Respiratory Therapy."

1990

The AARC begins developing Clinical Practice Guidelines (CPGs) for treatments and modalities common in the profession, leading to the development of 42 guidelines developed in a period of six years.

The AARC launches an International Fellowship Program to bring health care professionals from around the world to the United States every year to tour health care facilities in two cites and attend the AARC Congress.

The AARC supported coverage to skilled nursing facilities to allow them to bill for ventilator care as an ancillary (and not a routine) service.

1986

The American Association For Respiratory Care successfully lobbies Congress to gain the RT home visit Medicaid option for home patients who are chronically ventilator dependent.

1987

AARC members take part in a nationwide airline passenger survey to determine if there is support for an airline smoking ban. The results of the survey were presented to Congress. Congress later passes a law that banned smoking for flights two hours or less duration. The AARC was recognized for its contribution to this effort.

1988

AARC formalized international collaboration between the United States and Mexico.

1991

The International Council for Respiratory Care is formed in partnership with the AARC to promote the globalization of quality respiratory care.

Our first translation of a CPG was made (English to Japanese).

The AARC worked with and supported S. 1120 Medicare Home RT Care Act, which would have created a three-year respiratory therapy demonstration program for Medicare home oxygen patients.

1992

AARC advocated for revisions in Clinical Laboratory Improvement Amendments (CLIA) regulations and was successful in its efforts that allowed RTs to do blood gas and pulmonary function lab testing.

The AARC advocated for an update on salary equivalence guidelines used to pay RTs for nursing home services.

1993

AARC participated in government conferences describing the value of RTs outside of the hospital in postacute care (skilled nursing facilities, homecare).

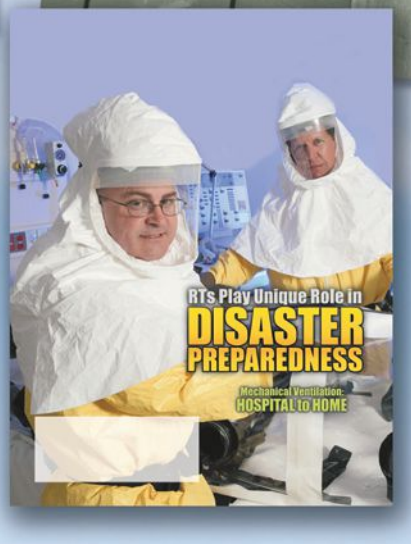
1994

AARC succeeds in including RTs as eligible for Indian Health Service educational scholarships.

1995

AARC has representative on government panel to revise smoking cessation.

AARC has representative appointed by Health and Human Services (HHS) to first National Allied Health Commission.



1998

The AARC opened eligibility of sections with at least 1,000 members to be represented on the Board of Directors.

JRCRTE evolves into the Committee on Accreditation for Respiratory Care (CoARC) to oversee educational programs for respiratory therapy students.

The AARC supported the tobacco settlement, which allowed for $206 billion back to the states from the tobacco industry.

AARC succeeds in gaining higher RC salary equivalency rates under Medicare.

1996

The Association enters the Internet age with the debut of www.AARC.org.

The Million Dollar Fund was created to document the value and contributions of the respiratory therapist. As of 2012, approximately $500,000 has been released for this purpose.

The Task Force on Restructuring is formed to restructure the AARC to better meet the needs of its members.

The AARC provided input to U.S. Food and Drug Administration at their request regarding the effective diagnosis and treatment of sleep apnea.

1997

Advertising for tobacco was eliminated at the urging of a coalition (Coalition on Smoking or Health), of which the AARC was a member.

AARC celebrated its 50th anniversary.

1999

AARC organizes the Political Advocacy Contact Team (PACT) consisting of two representatives from each state society for the purpose of improving the profession's health policy advocacy at the grassroot level.

AARC supports $50 million of federal funding earmarked for asthma education to the states.

AARC accepted the invitation to serve on a Medicare technical panel to develop the rehabilitation prospective payment system.

2000

Our science journal Respiratory Care is accepted into *Index Medicus* (after a 30-year quest), the principal bibliographic database of the National Library of Medicine and its online counterpart MEDLINE.

The AARC launches an annual Capitol Hill Lobby Day to educate members of Congress on key respiratory care issues.

2003

The AARC launches its first Lung Health Day℠ as part of RC Week. This will promote awareness and collaboration to our consumers. It is observed on the Wednesday of RC Week.

The Association brings www.YourLungHealth.org to the Internet to serve as a resource for patients and families with lung diseases.

The AARC offers webcasts to members, allowing for free Continuing Respiratory Care Education® (CRCE) credits to members.

2007

The AARC succeeds in efforts to allow RRTs with a minimum of a bachelor's degree to become commissioned as officers in the U.S. Public Health Service.

The AARC launches the 2015 and Beyond project to identify future roles, education, competencies, and credentials for RTs in the future health care system.

2009

The AARC, under contract from the U.S. Department of Health and Human Services, conducts the first population ventilator survey of acute care facilities. The information in the survey was to be used for mass casualty events. The response to this survey was 90%.

The AARC supported the Medicare outpatient rehabilitation benefit (H.R. 552/S. 329).

2005

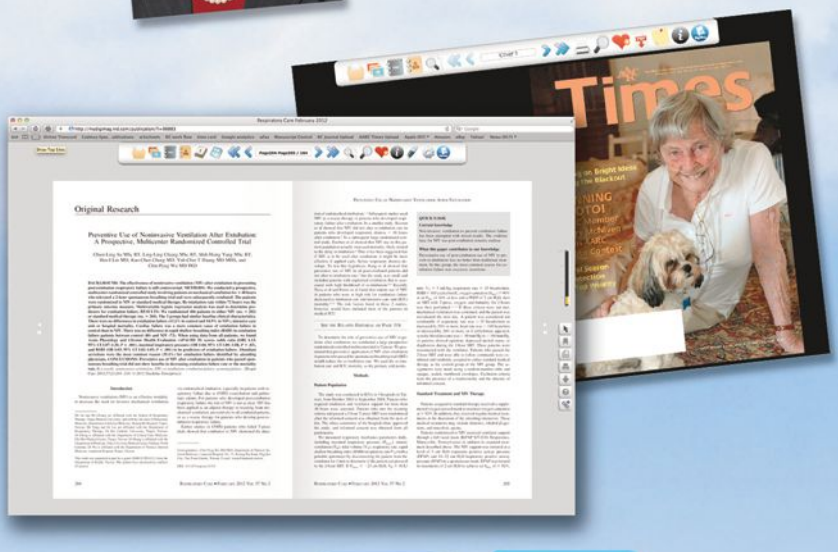
The Association develops the Advocacy 435 Plan, which goes online and becomes operational. The 435 Plan includes that RTs and respiratory patient advocates ensure a rapid response to fast-moving legislative issues. This helped us to designate two respiratory therapists in each district who would act in this grassroots movement.

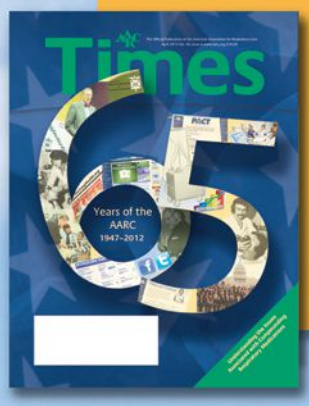
Toni Rodriguez, EdD, RRT, FAARC, is the first AARC president elected to serve a two-year term (2006–2007).

2006

The AARC launches a Benchmarking Program to assist respiratory care managers in providing accurate data to support administrative decisions and identify and promote best practices in the profession.

The AARC forms the International Educational Recognition System℠ (IERS) to promote high-quality respiratory care education around the world.





April 15, 2012

The AARC celebrates its 65th anniversary, with membership going strong and heading for 55,000 members. ■

2010

The AARC launches its social media presence on Twitter and Facebook.

AARC Times goes digital, allowing for easy access for members to view *AARC Times* through the Internet.

The AARC tops the 50,000 membership mark for the first time in its history.

2011

Respiratory Care becomes available as an online publication; epub ahead of print feature was also added.

Our 49th State-of-the-Art Journal Conference was held. This culminates 30 years of Journal Conferences, which are either State-of-the-Art or Consensus Conferences.

Industry Watch

AstraZeneca donates prescription medicines

AstraZeneca has donated $3.8 million worth of prescription medicines to AmeriCares to help care for chronically ill Americans who rely on safety net clinics for their medical care. AmeriCares is delivering the medicines to free clinics and community health centers through its U.S. Medical Assistance Program, which provides free medicines and medical supplies to 400 health care facilities serving the poor and uninsured across the United States. The AstraZeneca products are expected to benefit patients at about 100 clinics in 28 states.

Hospital studies HGNS system

The Apnex® Hypoglossal Nerve Stimulation (HGNS®) System to treat obstructive sleep apnea is being tested at Henry Ford Hospital in Michigan. The surgically implanted medical device activates muscles of the upper airway to ensure that the airway remains open during sleep. While asleep, the system monitors the patient's breathing and delivers mild stimulation to the hypoglossal nerve, which controls the tongue. As the nerve is stimulated, the tongue gently moves forward to keep the airway open. The study seeks to determine the safety and efficacy of the device.

Stony Brook collaborates with Sanofi on new TB drug

Researchers from Stony Brook University in New York are working with Sanofi to optimize novel benzimidazole-based compounds with the objective of identifying drug candidates ready for investigational new drug filing and clinical development in the treatment of tuberculosis, especially multi-drug resistant TB. The compounds were discovered by Stony Brook professor and director of the Institute of Chemical Biology & Drug Discovery, Dr. Iwao Ojima, and his team. "This is an exciting collaboration as we partner with a global pharmaceutical leader in developing a new and efficacious TB drug based on our discovery," Dr. Ojima was quoted as saying.

GSK, Theravance proceed with studies of new COPD, asthma drug

GlaxoSmithKline and Theravance Inc. have completed the Phase III registration program for the once-daily investigational medicine Relovair™* (fluticasone furoate/vilanterol) in patients with COPD and all but one of the pivotal studies in patients with asthma. For COPD, GSK intends to submit regulatory applications in the United States and Europe in mid-2012. For asthma, GSK plans to submit an application in Europe in mid-2012 and will continue discussions with the FDA on the regulatory requirements for a U.S. asthma indication.

Johns Hopkins leads effort to uncover genetic causes of asthma in African-Americans

A team of experts in genetics, immunology, epidemiology, and allergic disease has embarked on a four-year effort to map the whole genome of 1,000 people of African descent, including men and women from Baltimore, MD. Led by investigators from Johns Hopkins, the initial goal of the research is to find genetic variations underlying asthma and to explain why the disease disproportionately affects blacks. For part of the initiative, the researchers have contracted with Illumina Inc. of San Diego, CA, to create a commercially available, customized gene chip (or DNA microarray test) dubbed the "African power chip" to quickly find single mutations in genetic materials from blacks that may be associated with heightened disease risk.

Roswell Park Cancer Institute working on blood test for lung cancer

Roswell Park Cancer Institute researcher Sai Yendamuri, MD, FCCP, is working on a blood test to help diagnose lung cancer in patients before they undergo a biopsy. Dr. Yendamuri's work is supported by a $100,000 OneBreath Clinical Research Award in Lung Cancer from The CHEST Foundation. The first step will be to identify blood-based biomarkers for the disease called microRNAs to determine which microRNAs or signatures of

microRNAs are the best predictors of the disease state. "At that point we will create a whole blood microRNA assay for lung cancer," Dr. Yendamuri was quoted as saying. "We will then validate our findings by checking for these biomarkers in blood samples of lung cancer patients both before and after resection surgery to understand whether these signatures represent cancer presence versus cancer susceptibility."

Hamilton Medical receives FDA clearance for automatic cuff pressure solution

Hamilton Medical has received 510(k) clearance from the FDA for Intellicuff™, a new noninvasive automatic cuff pressure solution to reduce ventilator-associated pneumonia (VAP) and tracheal injuries. According to the company, following AARC Clinical Practice Guidelines, Intellicuff assists efforts to reduce VAP and tracheal injuries by continuously monitoring and automatically adjusting cuffed tracheal and tracheostomy tubes, providing a real-time optimization of cuff pressure.

Cellceutix reports progress on cancer drug

According to Cellceutix Corporation, recent research has shown that its flagship anticancer compound Kevetrin™ has achieved potent anticancer activity in a wide range of tumor types by targeting histone deacetylase. The discovery was made during research to further define Kevetrin's mechanism of action (MOA). Prior investigation of the MOA found Kevetrin™ activates both transcription-dependent and transcription-independent pathways to induce apoptosis in tumor cells through activation of p53, the "Guardian Angel of the Human Genome," and potentially the retinoblastoma protein, or Rb, pathway. Damaged or mutated p53 or Rb is exhibited in nearly 100% of cancers, regardless of origin.

Masimo receives FDA clearance for handheld device

Masimo has received FDA 510(k) clearance and full market commercial launch approval for the Masimo Pronto-7®, a palm-sized handheld device designed for quick and easy noninvasive spot-checking of total hemoglobin (SpHb®), SpO_2, pulse rate, and the perfusion index. According to Dr. Andrew J. Schuman, an adjunct assistant professor of pediatrics at Dartmouth Medical School, contributing editor for *Contemporary Pediatrics*, and practicing pediatrician in New Hampshire who reviewed the device prior to FDA clearance, the Pronto-7 has the "potential for significantly improving pediatric practice."

Covidien announces new board chairman

The board of directors at Covidien has elected the company's president and CEO, José E. Almeida, to serve as chairman of the board. Almeida succeeds Richard J. Meelia, who served as chairman since October 2008. "Joe has done an outstanding job leading the organization since becoming president and CEO last July," Timothy M. Donahue, lead board director, was quoted as saying. "His drive to create long-term shareholder value and his vast knowledge of the global health care marketplace significantly enhance the company's already strong prospects for sustained growth and progress."

GE Healthcare teams up with Microsoft in new venture

General Electric Company, through its health care IT business, has joined Microsoft Corp. to create a joint venture aimed at helping health care organizations and professionals use real-time, system-wide intelligence to improve health care quality and the patient experience. Upon formation, the new company will develop and market an open, interoperable technology platform and innovative clinical applications focused on enabling better population health management to improve outcomes and the overall economics of health and wellness. The new venture will combine Microsoft's expertise in building platforms and ecosystems with GE Healthcare's experience in clinical and administrative workflow solutions.

Ikaria receives orphan drug designation for PAH drug

Ikaria Inc. has announced that the FDA has granted orphan drug designation for the use of inhaled nitric oxide with the INOpulse® DS drug-delivery system as a combination product for pulmonary arterial hypertension (PAH). "Our receipt of orphan drug designation for the use of iNO via the INOpulse in PAH, combined with the IND we submitted last year, speaks to the solid progress of our late-stage pipeline," Daniel Tassé, chairman and CEO of Ikaria, was quoted as saying. "We're delighted to have PAH and bronchopulmonary dysplasia as additional indications under investigation for iNO, and also are planning its investigation with the INOpulse DS in chronic obstructive pulmonary disease."

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

Marketplace

Featuring information on products and equipment from manufacturers

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

Turbine-driven Ventilation System

Dräger's new Savina 300 ventilator for adult and pediatric patients provides reliable ventilation therapy and is suitable for use nearly anywhere in the hospital. The turbine-driven ICU ventilation system provides not only invasive but also noninvasive ventilation capability, which helps to reduce intubation and infection rates. The open breathing concept lets patients breathe freely at any time during the cycle and at any pressure level, increasing overall patient comfort levels and potentially helping to reduce weaning times. The large color touch screen and intuitive operating system make configuration and operation very simple, requiring minimal training. www.draeger.com

Small Canister Dispenser

A newly designed small canister dispenser is now available for the Kimberly-Clark KimTech WetTask* Refillable Wet Wiping System. The system, which consists of a roll of dry KimTech Prep* Wipers, allows users to add their preferred disinfecting solution (such as quaternary amine or bleach) and reduces surface cross contamination and exposure to chemical splashes and vapors. The new small canister dispenser is ergonomically designed to be easy to pick up, hold, and use. Additional features include an easy-grip lid, a lid that locks with a quarter-turn twist, and one-at-a-time dispensing. www.kchealthcare.com

Portable Oxygen Concentrator

Inova Labs Inc.'s LifeChoice® portable oxygen concentrator with Auto Mode technology is the first POC to automatically detect and adjust patient therapy based on oxygen requirements for periods of activity and sleep. The device weighs in at only 4.9 pounds, and the internal battery provides approximately two hours of use, which is increased to over five hours with the included supplemental battery pack (part of the Mobility Package with every LifeChoice POC purchase). Now patients treated with supplemental oxygen therapy can stay active and sleep well — anytime, anywhere. www.lifechoiceoxygen.com

Ventilation System

The CareFusion Ventilation System combines the company's industry leading ventilators with new interoperability and analytics software to better address clinical and operational challenges in patient care. The system includes the company's AVEA®, VELA®, and EnVe™ ventilators and adds two new applications. The Respiratory Documentation Application is a handheld, positive patient ID application that automates the collection of ventilator documentation data at the point of care and then wirelessly transmits it to the hospital's electronic medical records system. The Knowledge Portal for ventilator therapy is an analytics and reporting tool that measures clinical and process variability in ventilator therapy and provides hospitals with actionable information to help clinicians improve patient care. www.carefusion.com

Valved Holding Chamber

The OptiChamber Diamond valved holding chamber (VHC) from Philips Respironics is smaller than most conventional VHCs and incorporates a stepped mouthpiece; a clear, anti-static chamber; and a low resistance expiratory valve that helps measure breath count and breath hold. For use with inhaled steroids as well as long-acting and rescue pMDI medications, OptiChamber Diamond's intuitive design enhances medication delivery and compliance for patients of all ages, at home or in the hospital. OptiChamber Diamond is paired with the detachable LiteTouch VHC mask, which is designed to provide comfort and an optimal facial seal. www.philips.com

Airway Pressure Monitor

The Vortran®-APM (Airway Pressure Monitor) can change the way the Vortran Automatic Resuscitator (VAR®) is used and valued. For a small investment you can use the VAR for inter- or intra-hospital transport, MRI/CT ventilation, as a backup ventilator for overflow of patients, and for disaster preparedness. Four different connection kits are available to meet a wide range of needs, and the APM also comes equipped with three visual and audible alarms to increase the safety for your patients, including high rate, high PIP, and a non-cycling alarm. www.vortran.com

New Members

Welcome to the AARC

U.S. Members

A

Bui, Duyen, Mobile, Al*
Flannagan, Calvin, Leighton, AL*
Spencer, Jacqueline, Birmingham, Al*

Allen, Chelsea, Corning, Ar
Boone, Charlotte, Paragould, Ar
Cloinger, Kaila, Jonesboro, Ar
Clow, Leigh, Russellville, Ar*
Crosson, Samantha, Pocahontas, Ar
Ervin, Nikki, Bella Vista, Ar*
Gregory, Wendy, Pocahontas, Ar
Harvey, James, Pocahontas, Ar
Hedge, Tonya, Trumann, Ar
Heruska, Kim, Bella Vista, Ar*
Hogan, Joe, Newport, Ar*
Hudson, Melissa, Lynn, Ar
Jackson, Shalonda, State University, Ar*
Leblanc, Margaret, Hoxie, Ar
Linam, Jason, Paragould, Ar
Mitchell, Joshual, Paragould, Ar
Pender, Micah, Harrisburg, Ar
Penn, Jennifer, Cave City, Ar
Spence, Valerie, Jonesboro, Ar
Teaster, Tara, Pocahontas, Ar
Ward, Joseph, Hoxie, Ar
Williams, Dara, Jonesboro, Ar

Baxley, Kyle, Tucson, Az
Blowers, Raymond, Vail, Az*
Caldwell, Misty, Tucson, Az
Campbell, Charles, Tucson, Az
Canez, Teisa, Tucson, Az
Delph, Art, Chandler, Az*
Distefano, John, Glendale, Az*
Feighery, Ashley, Tucson, Az
Flannigan, Leslie, Tucson, Az
Florness, Kari, Tucson, Az
Grimes, Jessica, Tucson, Az
Jacinto, Martin, Marana, Az
Johnson, Stephanie, Phoenix, Az*
Kimmel, Sandra, Mesa, Az*
Linarte, Logan, Gilbert, Az*
Luna, Marcella, Tucson, Az
Macfarlane, Rayna, Tucson, Az
Matei, Aurelian, Surprise, Az*
Murray, Lori Ann, Red Rock, Az
Ojeda, Ulyses, Tucson, Az
Pierce, Kathleen, Buckeye, Az*
Plauche, Julie, Oro Valley, Az
Redhouse, Jonathan, Tucson, Az
Saige, Karen, Phoenix, Az*
Watts, Andrea, Tucson, Az*
White, Kathy, Phoenix, Az*

C

Abapo, Geoff, Rowland Heights, Ca
Apeah, Charles, Corona, Ca
Aquino, J Michael, Wildomar, Ca
Arellano, Johanna, Bloomington, Ca
Arias, Claribel, San Dimas, Ca
Asis, Isabelo, Sypress, Ca
Atem, Nyiuring, Riverside, Ca
Avila, Joseluis, San Bernardino, Ca
Baker, Kathleen, Murrieta, Ca
Banando, Philip, San Pedro, Ca*
Banks, John, Chino, Ca
Barajas, Jonathan, Victorville, Ca
Barajas, Kevin, Monrovia, Ca
Barrios, Elvis, El Monte, Ca
Beckstrand, Cory, Apple Valley, Ca
Bradley, Marla, Bakersfield, Ca*
Bryant, David, Tujunga, Ca*
Buth, Tiffany, Lake Elsinore, Ca
Cerda, Gilbert, Baldwin Park, Ca
Chang, Lois, Sunnyvale, Ca*
Collett, Stacy, Petaluma, Ca*
Colunga, Oscar, Solvang, Ca*
Cooper, Laura, Fresno, Ca*
Covert, Joshua, Vacaville, Ca
Dabu, Daniel, Hacienda Heights, Ca
Damir, Theresa, San Francisco, Ca*
De Leon, Isaac, Apple Valley, Ca
Dimaano, Joseph, Los Angeles, Ca
Dupuis, Corryn, Murrieta, Ca
Enochs, Alisha, El Dorado Hills, Ca*
Fabela, Yvonne, Chino Hills, Ca
Foust, Carolyn, Clovis, Ca*
Fuller, Viktor, Corona, Ca
Garcia, Andy, Covina, Ca
Garcia, Eduardo, San Gabriel, Ca
Garcia, Ruben, Moreno Valley, Ca
Gardea, Alexandrea, Fontana, Ca
Gathecha, David, Anaheim, Ca
Gonzalez, Patricia, Riverside, Ca*
Gregson, Annette, Los Alamitos, Ca*
Guerrero, Edward, Lakewood, Ca*
Hansen, Christopher, Rialto, Ca
Hatfield, Meredith, Folsom, Ca
Henning, Paula, San Diego, Ca*
Hernandez, Arturo, Diamond Bar, Ca
Herndon, Melissa, Ontario, Ca
Hubbell, Ashley, Palmdale, Ca*
Huizar, Alice, Ontario, Ca
Ibarra, Jacob, San Jose, Ca*
Inman, Judy, Sanger, Ca*
Isak, Miranda, Riverside, Ca
Jacinto, Arvin, Valley Village, Ca*
Jackson, Crystal, Menifee, Ca
Jaurigue, Arlene, Stockton, Ca*
Jones, Ranae, Rancho Cucamonga, Ca*
Knabenshue, Tara, Pasadena, Ca
Kurian, Ranjith, Santa Maria, Ca*
Lam, John, Los Angeles, Ca
Lawrence, Rushelle, Sacramento, Ca*
Lawrence, Tyler, Elk Grove, Ca
Lee, Julie, El Monte, Ca*
Lewis, Nathan, Corona, Ca*
Lombardi, Richard, Corona, Ca*
Lopez, Camille, Temple City, Ca
Magno, Aaron, El Monte, Ca
Malone, Roland, National City, Ca*
Mao, Meakara, San Diego, Ca
Marsalisi, Kari, Norco, Ca
Mason, Carol, Auburn, Ca*
Matthews, Takeshi, Covina, Ca
Matzek, Filomena, Landers, Ca
McCoy, Michael, Huntington Beach, Ca
McGrath, Jennifer, Clovis, Ca*
Mendoza, Daniel, Fontana, Ca
Meraz, Lorena, Victorville, Ca
Murillo-Jackson, Nancy, Pomona, Ca
Mutuc, Monic, El Monte, Ca
Nguyen, Anhthu, Garden Grove, Ca
Nguyen, Vivian, San Dimas, Ca
Nordin, Tamara, Porterville, Ca*
Nuno, Irene, Fontana, Ca
Ong, Maria, Rancho Cordova, Ca*
Orton, Suzanne, Yucaipa, Ca*
Pedraza, Phillip, El Monte, Ca
Perez Ruiz, Jose, Fontana, Ca
Petersen, Kelly, Beaumont, Ca
Pham, Sandy, Riverside, Ca
Pittman, Laura, Roseville, Ca
Poblete, Jeffrey, Stockton, Ca
Ponce, Andy, West Covina, Ca
Ponce, Michael, West Covina, Ca
Ramler, Marshelle, Temecula, Ca*
Ramos, Manuel, Norwalk, Ca
Recomanta, Jocelyn, Fontana, Ca
Reyes, Don, Walnut, Ca
Rivera, Justin, Greenbrae, Ca
Robinson, Pat, Pine Grove, Ca*
Rothwell, Deborah, Long Beach, Ca*
Salazar, Jasmin, Hesperia, Ca
Sedoris, Desiree, Riverside, Ca
Shelden, Roy, Copperopolis, Ca*
Siller, Mihaela, San Diego, Ca*
Skaggs Jr, David, Riverside, Ca
Smit, Karen, San Jose, Ca*
Stingley, Elizabeth, Pomona, Ca
Syeda, Rabeya, Santa Clara, Ca*
Taing, Jinny, Union City, Ca*
Terrazas, David, Covina, Ca
Tocong, Leilani, Los Angeles, Ca*
Tomelden, Camille, Rowland Heights, Ca
Tomelden, Kevin, Rowland Heights, Ca
Ton That, Tuan Anh, Baldwin Park, Ca
Tupaz, Leslie, La Jolla, Ca*
Vargas, Uriel, San Diego, Ca*
Vasquez, Juan, Anaheim, Ca
Velasquez, Vanessa, Fontana, Ca
Vierra, Christina, Roseville, Ca
Villa, Carolina, National City, Ca
Ware, Dennis, Lake View Terrace, Ca*
Winters, Krystle, Chino Hills, Ca
Yust, Timothy, Lake Balboa, Ca*
Yutanco, Jennifer, Riverside, Ca*

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

Zabolotny, Marina, Antelope, Ca

Brittain, Karen, Pine, Co*
Burt, Nicole, Denver, Co*
Crawford, William, Evergreen, Co
Looney, Sean, Denver, Co*
Meyer, Greg, Golden, Co*
Solorzano, Damian, Arvada, Co*

Barrera, Amanda, Manchester, Ct*
Brown, Jennifer, Chaplin, Ct*
Chuma, Rita, Fairfield, Ct*
Dube, Allison, Ellington, Ct
Kaye, Melanie, Guilford, Ct*
Robinson, Mary, Greenwich, Ct*

D

Ison, Emily, Washington, DC

Adili-Khams, Dawn, Lewes, De
Allen, Jonathan, Lincoln, De
Anokye-Yesuo, Adjoa, Smyrna, De
Clements, Trent, Laurel, De
Cruz, Luis, Middletown, De*
Dabrowski, Cynthia, Milton, De
Fiknnegan, Jacqueline, Milfrod, De
Foraker, Jennifer, Dover, De
Holt, Elizabeth, Milford, De
Kimble, Jenee', Milford, De
Matthews, Kenzie, Laurel, De
McCarthy, Meghan, Milton, De
Ramirez, Maria, Georgetown, De
Rosebrock, Brittney, Laurel, De
Sefil, Candy, Dover, De
Szymanski, Lisa, Wilmington, De*
Taylor, John, New Castle, De*
Wasserloos, Sonja, Greenwood, De

F

Arango, Diana, Miami, Fl*
Broadbent, Maren, Naples, Fl*
Coppage, Terri, Groveland, Fl*
Hamann, Chris, Greenacres, Fl*
Heward, Dawn, Ocala, Fl*
Janik, Anthony, Jacksonville, Fl*
Keeton, Beverly, Port St Lucie, Fl*
Miller, Mark, Ocala, Fl*
Moore, Vicki, Gainesville, Fl*
Napier, Maurice, Riviera Beach, Fl
Ortiz, Carlos, Pembroke Pines, Fl*
Parsons, Wesley, Interlachen, Fl*
Paschal, Jennifer, Miramar, Fl*
Quinn, Margie, St Petersburg, Fl
Ray, Tomoko, Longwood, Fl
Rengifo, Victor, Miami, Fl*
Roach, Cherise, Apopka, Fl*
Robbins, Yvonne, Port Orange, Fl*
Smith, Michael, Orlando, Fl*
Walker, Kathleen, Ocala, Fl*

G

Alemu, Ermias, Atlanta, Ga*
Atkins, Faith, Atlanta, Ga*
Bell, Adam, Douglas, Ga*
Bonner, Lorraine, Columbus, Ga*
Casey, Ralph, Cataula, Ga*
Collier, Michelle, Augusta, Ga*
Collins, Shauna, Perry, Ga*
Copeland, Hanisha, McDonough, Ga*
Cornett, Charlie, Alpharetta, Ga
Drayton, Patricia, Dublin, Ga*
Eben, Lizette, Lawrenceville, Ga
Gerald, Connie, Lithonia, Ga*
Grogan, Lori, Barnesville, Ga*
Harris, Amanda, Tifton, Ga*
Honig, Eric, Marietta, Ga
Jackson, Bonnie, Sandersville, Ga*
Mesfn, Harnet, Lawrenceville, Ga*
Pinkney, Dee, Brunswick, Ga*
Rolf, Charlene, Covington, Ga
Sheets, Bryan, Albany, Ga
Thomas, Marqueal, Moultrie, Ga*
Washburn, Timothy, Buford, Ga
Wilbanks, Thomas, McDonough, Ga*
Wilson, Aquila, Columbus, Ga*

Naval, John, Agana Heights, Gu*

H

Nelson, Tequila, Kaneohe, Hi*
Uyeda, Dennis, Pearl City, Hi*

I

Conrad, Jane, Coralville, Ia*
Courtier, Donna, Ankeny, Ia*
Detweiler, Thomas, Parnell, Ia*
Hudson, Kasey, Maxwell, Ia
Jacobus, Eric, Palo, Ia*
Miller, Miranda, West Burlington, Ia*
Schlabaugh, Jennifer, Riverside, Ia*
Schnell, Mark, Pella, Ia
Streinz, Bonnie, North Liberty, Ia*
Young, Jennifer, Cedar Rapids, Ia*

Andersen, Kristin, Paul, Id*
Anderson, Brooke, Nampa, Id
Conley, Melissa, Boise, Id
Curry, Charla, Boise, Id
Ducharme, Christy, Boise, Id
Eaton, Megan, Boise, Id
Golda, Sarah, Boise, Id
Hammer, Jaala, Boise, Id
Hatfield, Kristi, Jerome, Id*
Hinrichs, Kimberly, Boise, Id
Kindl, Nicole, Boise, Id
Lempesis, Troy, Boise, Id
Montoya, Tiffany, Twin Falls, Id*
Northington, Ursula, Boise, Id
Powell, Erin, Boise, Id
Schaller, Andrew, Nampa, Id
Skryl, Guylnara, Boise, Id
Stubbs,, Douglas, Boise, Id
Tremewan, Merisa, Boise, Id
Uttke, Paul, Boise, Id
Weinkauff, Rebecca, Boise, Id
Williams, Courtney, Idaho Falls, Id

Bolden, Tia, Belleville, Il*
Boomershine, Dana, Rock Island, Il*
Brown, Kristopher, Rockton, Il*
Dorfman, Stephanie, Hainesville, Il*
Fonner, Denise, Champaign, Il
Galer, Mark, Lindenhurst, Il*
Goslin, Elizabeth, Champaign, Il*
Ingram, Daniel, Urbana, Il
Lopez, Vanessa, Chicago, Il*
McIntyre, Cyndy, Cordova, Il*
Mitchell Wise, Keena, O Fallon, Il
Patel, Asha, Bartlett, Il*
Prentice, John, Paw Paw, Il*
Rodriguez, Carlos, Chicago, Il*
Spalding, Judith, Glen Carbon, Il*
Wallace, Genevieve, Granite City, Il
Ward, Nikesha, Glen Carbon, Il

Bertram, Ashley, Liberty, In
Bower, Deborah, La Fontaine, In
Brownell, Hannah, Anderson, In
Clark, Kendall, Fort Wayne, In*
Collier, Julie, Fort Wayne, In*
Dickey, Amy, Richmond, In
Gabbert, Ashley, Greenfield, In
Gase, Jason, Fort Wayne, In*
Gause, Stacy, Leo, In*
Gillespie, Tain, Batesville, In*
Gilsinger, Marisa, Logansport, In*
Green, Sara, Lynn, In
Hennessy, Brandy, Mooresville, In*
Holland, Cheryl, Paoli, In*
Jaggers, Robert, Muncie, In
James, Harter, Fort Wayne, In*
Julie, Sullenbarger, Connersville, In
Kimberly, Bloom, Richmond, In
Lang, Katrina, Connersville, In
Miller, Douglas, Crawfordsville, In*
Moses, Elaine, Fort Wayne, In*
Niemeier, Michael, Indianapolis, In
Shonkwiler, Stacey, Attica, In*
Shultz, Sheena, Fort Wayne, In*
Snyder, Julie, Shirley, In
Spahr, Lauren, Portland, In
Von Wiegandt, Kristin, Fishers, In
Walsh, Dymphna, Highland, In*
White, Amy, Richmond, In
Wise, Leslie, Cambridge City, In
Zehring, Michelle, Fort Wayne, In*

K

Arbogast, Kendra, Overland Park, Ks*
Bell, Amy, Kingman, Ks
Conlin, Paige, Topeka, Ks
Dold, Michelle, Garden Plain, Ks
Eckert, Kristen, Hutchinson, Ks
Espinoza, Jamie, Hutchinson, Ks
Evans, Brandon, Wichita, Ks
Grimmett, Judi, Topeka, Ks
Hall, Scott, Rose Hill, Ks
Heinemann, Desiree, Olathe, Ks
Howe, Ashley, Topeka, Ks
Howell, Myles, Topeka, Ks
Hunter, Megan, Wichita, Ks
Inskeep, Rachel, Wichita, Ks*
Lamb, Bobbie, Hutchinson, Ks
Lee, Darius, Carbondale, Ks
Mattison, Paula, Wichita, Ks
Mortinger, Karen, Rose Hill, Ks*
Neff, Jeffrey, Wichita, Ks*
Reece, David, Olathe, Ks*
Russell, Jennifer, Gardner, Ks*
Smart, Angela, Emporia, Ks
Sobba, Sheena, Mount Hope, Ks
Sobba, Tawny, Mount Hope, Ks
Vanderslice, Jenna, Topeka, Ks
Williams, Mary, Valley Center, Ks*
Yoder, Donni, Topeka, Ks

Anderson, Toni, Florence, Ky*
Compton, Christina, Allen, Ky
Fahey, Meagan, Bloomfield, Ky*
Fauth, Ramona, Louisville, Ky*
Hinkle, Mark, Russell Springs, Ky*
Johnson, Hope, Totz, Ky*
Lawson, Sabrina, Pineville, Ky*
Miller, Ethan, Independence, Ky
Settle, Aulton, Paducah, Ky*
Skotak, Dortha, Lewisburg, Ky*
Wright, Pamela, Winchester, Ky*

L

Adams, Amy, Deville, La
Babineaux, Corie, Duson, La
Bourg, Matthew, Breaux Bridge, La
Derouen, Cassaundra, Lake Charles, La
Duplechin, Anjelique, Ville Platte, La
Fletcher, Kaitlyn, Pollock, La
Hebert, Camille, Gueydan, La
Kelley, Joni, Delhi, La*
King, Bradley, Baton Rouge, La
Lewis, Kquoella, Eunice, La
Louque, Heather, Paulina, La
Mathews, Travis, Abbeville, La
Mayeux, Jeff, Independence, La*
Miller, Brittany, Marksville, La
Moore, Alison, Shreveport, La*
Morgan, Emily, Rayne, La
Trahan, Heather, Lafayette, La
Villar, Christi, Gonzales, La
Walker, Kaitlyn, Tickfaw, La

M

Camara, Amanda, Fall River, Ma
Camara, Leslie, Fall River, Ma
Fitlin, Lori, Seekonk, Ma
Meyer, Kimberly, Norfolk, Ma
Wright, Amy, Seekonk, Ma

Archer, Candice, Waldorf, Md*
Chhabria, Ravi, Germantown, Md*
Chrysanthus, Brandon, Abingdon, Md*
Cohen, Norma, Gaithersburg, Md*
Duckett, Barry, Windsor Mill, Md*
Ganong, Brittany, Bishopvill, Md
Gary, Nishia, Baltimore, Md*
Hardy, Audra, Essex, Md*
Jones, Stephen, Laurel, Md*
King, Misty, Lavale, Md*
Kuczak, Kimberly, Sparks Glencoe, Md*
McCullough, Barbara, Baltimore, Md*
Meredith, Cheryl, Abingdon, Md*
Turner, Eddie, Rosedale, Md*
Williams, Kendall, Easton, Md
Young, Stacey, Essex, Md*

Ames, David, Livermore Falls, Me*
Cady, Donna, Sanford, Me
Joyce, Marty, Hallowell, Me
Slaughter, Shelby, South China, Me
Waraskevich, Nancy, Waterville, Me*

Abdilla, Laura, Chesterfield, Mi*
Arndt, Paul, Iron Mountain, Mi*
Baker, Ashley, Jackson, Mi
Batchelor, Joshua, Kalamazoo, Mi*
Brighton, Nora, Clinton, Mi*
Colasanti, Carol, New Baltimore, Mi*
Crabtree, Nicole, Jackson, Mi
Crites, Donald, Rochester Hills, Mi*
Gosselin, Nichole, Jackson, Mi
Graff, Nancy, Rockford, Mi*
Haack, Jennifer, Allen, Mi
Hackney, Seika, Jackson, Mi
Hagger, Julie, Fennville, Mi*
Hakeos, Julie, Livonia, Mi
Harris, Ebony, Jackson, Mi
Kopka, Erica, Jackson, Mi
Lapointe, Kyle, Southgate, Mi
Lapointe, Renee, Jackson, Mi
Lisjak, Gerald, Rochester Hills, Mi
McDonald, Maryjo, Jackson, Mi
Mraz, Andrew, Jackson, Mi
Murray, April, Northville, Mi
Pitts, Ashleigh, Jackson, Mi
Probst, Stephen, Jackson, Mi
Ross, Elizabeth, Elmira, Mi*
Ruger, Tricia, Jackson, Mi
Sajdak, Samantha, Jackson, Mi
Schoppert, Gayle, Jackson, Mi
Sellon, Paula, Gobles, Mi*
Shaffer, Kimberley, Jackson, Mi
Smith, Robert, Sparta, Mi
Sweat, Charla, Grand Rapids, Mi*
Vansickle, Charlotte, Jackson, Mi
Wallace, Jillane, Portage, Mi*
Ward, Taylor, Dearborn Heights, Mi
Wirts, Megan, Grant, Mi*

Atoma, Derebi, Columbia Heights, Mn*
Bond, John, Thief River Falls, Mn*
Gfroerer, Clinton, Brainerd, Mn*
Green, Sara, Savage, Mn*
Gust, Kathy, Eyota, Mn*
Murphy, Larry, Anoka, Mn*

Bennett, Timothy, Saint Louis, Mo
Boeding, Shelley, O Fallon, Mo*
Bunimovich, Anna, Saint Louis, Mo*
Bursley, Katrina, Cedar Hill, Mo
Cross, Candice, Kansas City, Mo*
Dockins, Kelly, Kansas City, Mo*
Doll, Lynette, Kearney, Mo*
Etherton, Angela, Naylor, Mo
Fowler, Tiffany, Villa Ridge, Mo
Fricke, Tiffany, Festus, Mo*
Hale, Christa, Saint Louis, Mo
Hargraves, Clifford, O Fallon, Mo
Helton, Stacey, Cedar Hill, Mo
Kuker, Cesilee, Saint Charles, Mo
Lichte, Tonya, Pleasant Hill, Mo*
Lile, Robert, Independence, Mo*
McPike, Tia, Columbia, Mo*
Nammavaly, Melissa, Independence, Mo*
Newsham, Nicole, Kirkwood, Mo
Norris, Amy, Cape Girardeau, Mo*
Owens, Natasha, Saint Louis, Mo
Scott, Lisa, Nixa, Mo*
Wagner, Melinda, O Fallon, Mo
Weissenburger, Claire, Maryville, Mo*
Williams, Anthony, Kansas City, Mo*

Bolanes, Victoria, Amory, Ms
Garner, Trey, Biloxi, Ms*
Gupton, Vann, Poplarville, Ms*
Holocher III, Daniel, Caledonia, Ms
Mitchell, Yolonda, Ocean Springs, Ms*
Worsham, Matthew, Ocean Springs, Ms*

N

Burke, Tammy, Margarettsville, NC*
Davis, Kristen, Henrietta, NC
Downey, Kimberly, Cary, NC*
Dunlap, Angela, Stoneville, NC*
Franklin, Sandra, Supply, NC*
Kirby, Gregory, Stanley, NC*
Matthews, Wendy, Hamptonville, NC
Orange, Billy, Elkin, NC
Ronk, James, Cary, NC*
Waller, Patricia, Charlotte, NC*
Wilson, Robert, Cameron, NC*

Whitaker, Mary, Williston, ND*

Armintrout-Kohl, Amy, Lincoln, Ne
Bundfuss, Melanie, Lincoln, Ne
Clough, Jared, Lincoln, Ne
Eaton, Jessica, Falls City, Ne
Emanuel, Whitney, Lincoln, Ne
Fleming, Leslie, Omaha, Ne*
Folkers, Racheal, Hartington, Ne
Friel, Charles, Omaha, Ne*
Gnirk, Jennifer, Lexington, Ne
Goering, Zachary, Lincoln, Ne
Golter, Gus, Lincoln, Ne
Hagaman, Kyle, Bennett, Ne
Hoefer, Weston, Lincoln, Ne
Hunnicutt, Brandis, Beatrice, Ne
Jensen, Tracey, Pickrell, Ne
Kiene, Megan, Columbus, Ne
Krutak, Kirsten, Lincoln, Ne
Latelle, Emily, Lincoln, Ne
Lesac, Andrea, Fort Calhoun, Ne*
Liston, Angie, Wayne, Ne
Luettel, Ryan, Petersburg, Ne
Magana, Omar, Lincoln, Ne
Peschong, Sarah, Lincoln, Ne
Pooschke, Keri, Lincoln, Ne
Sass, Brad, Firth, Ne
Schwab, Brandon, Lincoln, Ne*
Siegel, Stefanie, Columbus, Ne
Spanel-Curtis, Alisha, Lincoln, Ne
Villegas, Christine, Lincoln, Ne
Wallace, Nathan, Lincoln, Ne
Williams, David, Grand Island, Ne
Yant, Jessie, Seward, Ne

Ash, Patrick, Bath, NH

Arthur, Dale, Elmer, NJ*
Delgado, Janette, Laurence Harbor, NJ*
Fischer, Ida, Sewell, NJ*
Heilman, Peter, Denville, NJ*
Jean, Stanley, Hackensack, NJ*
Laguna, Robert, Sparta, NJ*
Massey, Fatimah, Glen Ridge, NJ*
Pilon, James, Keansburg, NJ*
Ramirez, Sonia, Toms River, NJ*
Servello, Michael, Cinnaminson, NJ*
Stonehouse, Denise, Sewell, NJ*
Tanis, Danielle, Lanoka Harbor, NJ*
Tehlikian, Monica, Newark, NJ*
Thomas, Susan, Dumont, NJ*
Tompkins, James, Burlington, NJ*
Wallack, Ann Marie, Marlton, NJ*

McBurney, Leah, Los Lunas, NM*
Togami, Laura, Albuquerque, NM

Lowe, Faith, Reno, Nv*
Rawlings, Rachel, Las Vegas, Nv*

Abrahams, Gifty, Bronx, NY
Antoine, Jean-Robert, Brooklyn, NY*
Balestra, Lisa, Syracuse, NY
Bauder, Christine, Chittenango, NY
Bosovyk, Alla, Syracuse, NY
Brown, Alex, Syracuse, NY
Callaghan, William, Staten Island, NY*
Carroll, Michael, Lake Grove, NY*
Castro, Jomarys, Syracuse, NY
Chen, Maranda, Brooklyn, NY
Chol, Deng, Liverpool, NY
Colon, Serafina, Bronx, NY
Comeau, David, Spencerport, NY
Davison, Marie, Baldwinsville, NY
Flynn, Melissa, Syracuse, NY
Grey, Judith, New Berlin, NY*
Grow, Victoria, Baldwinsville, NY
Hamilton, Robbie, Penn Yan, NY
Hill, William, North Babylon, NY*
Hypta, Alicja, Staten Island, NY*
John, Ann, Greenfield Center, NY*
Kad, Elizabeth, Fayetteville, NY
Kohut, Maksym, Camillus, NY
Langdon, Margaret, Penfield, NY

Langis-Campagnola, Maryann, Farmingdale, NY*
Lau, Ray, Brooklyn, NY*
Magari, Frank, Jamesville, NY
Marji, Mary, Cicero, NY
Mayersc, Catherine, Brooklyn, NY
Morgan, Kaleelah, Jamaica, NY*
Ntansah-Boateng, Isaac, Syracuse, NY
Olesh, Marina, Syracuse, NY
Pendino, Martha, Naples, NY*
Pierce, Anne, Albany, NY*
Rinaldo, Mary, Lockport, NY*
Rozensky, Russell, Miller Place, NY*
Schiano, Kristina, Liverpool, NY
Schlacter, Robert, Solvay, NY
Shoemaker, Chad, La Fayette, NY
Sibble, Doug, Mattydale, NY
Stankowski, Renee, Lancaster, NY*
Tallini, Ben, Baldwinsville, NY
Trompeter, Laura, Rochester, NY
Yevseyeva, Irina, Syracuse, NY

O

Baginski, Matthew, Toledo, Oh*
Baumgartner, Darlene, Kettering, Oh*
Beckett, Lindsey, Millersburg, Oh
Brigham, Rebecca, Mount Vernon, Oh
Castelli, Alicia, Avon Lake, Oh*
Cleland, Eric, Ashland, Oh
Clevenger, Brianna, Galion, Oh
Clever Vermillion, Michelle, Mansfield, Oh
Daly, Christopher, Mansfield, Oh
Davidson, Shelia, Spring Valley, Oh*
Dickerson, David, Wooster, Oh
Dover Tyler, Carolyn, Springfield, Oh*
Finnegon, Carol, Crestline, Oh
Flowers, Jennifer, Yellow Springs, Oh*
Foreman, Brooke, Shelby, Oh
Gutai, Whitney, Mansfield, Oh
Haenszel, Leah, Columbus, Oh*
Hermandorfer, Lee, Little Hocking, Oh
Horne, Jamie, Toledo, Oh*
Hulce, Nelson, Dayton, Oh*
Kato, Janet, Austinburg, Oh*
King, Michael, Huber Heights, Oh*
Kroeger, Jessica, Cincinnati, Oh*
Leonhardt, Jaqualynn, Shelby, Oh
Lovinsky, Erin, South Euclid, Oh*
Lusher, Micah, Lancaster, Oh*
McCann, Debra, Columbus, Oh*
McCarthy, Kevin, Mentor, Oh*
Mottayau, Jacob, Mansfield, Oh
Newton, Kimberly, New Paris, Oh
Quillen, Jeremy, Franklin, Oh*
Reed, Sue, Kirtland, Oh
Richards, Margaret, Newark, Oh*
Romigh, Stacy, Massillon, Oh*
Shepherd, Leeanna, Columbus, Oh*
Smallwood, Meissa, Painesville, Oh
Stewart, Brian, Mansfield, Oh
Tyrrell, Danielle, Solon, Oh*
Williston, Teresa, Norwalk, Oh

Bundy Salcido, Andreana, Edmond, Ok*
Helterbran, Maggie, Waurika, Ok*

Andrews, Blake, Bend, Or*
Chappell, Courtney, Bend, Or*
Craig, Laura, Eugene, Or
Dersham, Sanderson, Vida, Or
Francois, Darin, Junction City, Or
Gray, Rhonda, Lebanon, Or
Grove, Catherine, Portland, Or*
Helling, Corey, Eugene, Or
Hescock, Rochelle, Drain, Or
Holman, Kira, Eugene, Or
Jellison, Marci, Junction City, Or
Johnson, Mary, Sherwood, Or*
Johnson, Steven, Prineville, Or*
Knopp, Brad, Eugene, Or
Kropf, Brett, Corvallis, Or
Moore, Deidre, Bend, Or*
Olsen, Mark, Stayton, Or*
Pressly, Danica, Eugene, Or
Thiel, John, Coburg, Or
Tiller, Macenzie, Springfield, Or
Tipton, Leah, Springfield, Or
Urciuoli, Sabato, Veneta, Or
Wilson, Dwight, Albany, Or*

P

Achankunju, Anoj, Philadelphia, Pa*
Beers, Cheri, Coalport, Pa*
Burns, John, Little Meadows, Pa*
Campbell, John, Perkasie, Pa*
Cicci, Robert, Smock, Pa*
Ellis, Saranna, Harrisburg, Pa*
Fallon, Kathleen, Wallingford, Pa*
Fisher, Kelli, Fairfield, Pa*
Ford, Marla, Houtzdale, Pa*
Gelsdorf, Shannon, Derry, Pa*
Glenn, James, Wallingford, Pa*
Gray, Sandra, Morrisville, Pa*
Harris, Ronald, Kingston, Pa*
Hofmann, Karen, Enola, Pa*
James, Elizabeth, Upper Darby, Pa*
Jenkins, James, Fayette City, Pa*
John, Mathew, Media, Pa*
Keith, Stacey, Reading, Pa*
Kessler, Rebecca, York, Pa*
Kotoski, Nathan, Smethport, Pa*
Madison, Gregory, Summerhill, Pa*
Mani, Margaret, Philadelphia, Pa*
Mathew, Elizabeth, Philadelphia, Pa*
Mongelluzzo, Laura, Morton, Pa*
Mullin, Jaime, Swarthmore, Pa
Myers, Jennifer, North Versailles, Pa*
Oommen, Richi, Philadelphia, Pa*
Padilla, Nancy, Hanover, Pa*
Rothenberger, Trisha, Hamburg, Pa*
Scicchitano, Maria, Mount Carmel, Pa*
Shah, Parul, Mechanicsburg, Pa*
Smith, David, Fairless Hills, Pa*
Spellman, Alison, Macungie, Pa*
Timmins, Debra, Pottstown, Pa
Urban, Nathan, Delmont, Pa*
Washington, Sheila, Philadelphia, Pa*
Wilms, Cheryl, Perkasie, Pa*
Wyniawskyj, Jared, Ephrata, Pa

Muniz, Miguel, Mayaguez, PR*

R

Barnum, Rebecca, Wyoming, RI
Cayard, Nicole, Cranston, RI
Collins-Gorman, Corrine, Smithfield, RI
Cotugno, Kerrilynn, Providence, RI
Davide, Brad, Pawtucket, RI
Goldman, Jonathan, Cranston, RI
Guzman, Kristie, Riverside, RI
Mendence, Tabitha, Riverside, RI
Poole, Laura, Cranston, RI
Prenda, Susan, West Greenwich, RI*
Stevenson, Jamie, Cranston, RI
Wyatt, Courtney, Pawtucket, RI

S

Bowen, Hanna, Chapin, SC
Britt, Jeremy, North Charleston, SC
Brown, Shiwuan, North Charleston, SC
Clark, Chevi, Seneca, SC*
Coltharp, Larry, Charleston, SC
Conlin, Jill, Ladson, SC
Doan, Kathleen, Swansea, SC*
Fields, Tracy, Florence, SC*
Garrett, Jacqueline, Greenville, SC*
Gillum, Robert, Lexington, SC*
Hensley, Carolyn, Irmo, SC
Hunt, Casey, Summerville, SC
Jeffcoat, Linda, Lexington, SC
Jennings, Keri, Goose Creek, SC
Kulas, Karin, Summerville, SC*
Mariano, Nina Theresa, Goose Creek, SC
Markham, Christopher, Charleston, SC
Maute, Lisette, Goose Creek, SC
Mole, Christin, Lexington, SC
Mullins, Courtney, Beaufort, SC*
Potter, Melissa, Columbia, SC
Rucker, Rebecca, Swansea, SC
Westmoreland, Kaylie, Charleston, SC
Williams, Christy, Leesville, SC
Windham, James, North Augusta, SC*

Hansen, Abby, Rapid City, SD*

T

Bradley, Sarah, Greeneville, Tn
Brown, Tiffany, Morristown, Tn
Corlew, Brandy, Antioch, Tn*
Dunlap, Tina, Lenoir City, Tn*
Dyer, Crystal, New Market, Tn
Feezell, Lance, Greeneville, Tn
Grooms, Sheila, Cosby, Tn
Harper, Keisha, Gainesboro, Tn*
Jones, Kalysta, Mosheim, Tn
Lowe, Jamie, Talbott, Tn
Mason, Danielle, Spring Hill, Tn*
McAllister, Melissa, Bulls Gap, Tn
Miller, Amy, Greeneville, Tn*
Mooneyham, Whitney, Rutledge, Tn
Peagler, Lewis, New Market, Tn
Piatt, Ashley, Mohawk, Tn
Rominger, Brooke, Greeneville, Tn
Russell, Calvin, Harrison, Tn*
Snelling, Justin, Savannah, Tn*
Winburn, Jennifer, Memphis, Tn

Anthony, Kellie, Coppell, Tx*
Baker, Denika, San Antonio, Tx*
Barrera, Mauro, San Benito, Tx*
Bilan, Iris, Houston, Tx*
Bryant, Joshua, Hurst, Tx*
Burch, Victoria, Fort Worth, Tx*
Cook, Brandy, Crosby, Tx*
Cooper, Julie, Kingwood, Tx
Coote, Stuart, Humble, Tx
Delossantos, Rhonda, Keller, Tx*
Ewah, Michael, Houston, Tx*
Galvan, Blanca, Edinburg, Tx*
Garcia, Kimberly, Brownsville, Tx
Gomez, Jaime, Brownsville, Tx
Guerra, Francisca, Conroe, Tx
Guerrero, Stacy, Brownsville, Tx
Hernandez, Omar, Olmito, Tx
Huizar, Robert, Austin, Tx*
Imes, Taylor, Victoria, Tx
Jackson, Jo-Ann, Rockwall, Tx*
Kines, Linde, Athens, Tx*
Koenig, Lindsey, China Spring, Tx

Kuha, Janet, Temple, Tx
Lane, Jessica, Katy, Tx*
Larson, Tammy, El Paso, Tx*
Malaney, Saloma, Cedar Park, Tx*
Moore, David, Midland, Tx*
Mooring, Bradley, Dallas, Tx*
Muniz, Adriana, Brownsville, Tx
Nicholas, John, Live Oak, Tx*
Perez, Julian, Brownsville, Tx
Persall, Maria, El Paso, Tx*
Price, Dawn, Waco, Tx*
Rhie, Ryan, Converse, Tx*
Roberts, Renae, Lubbock, Tx*
Robertson, April, Lumberton, Tx*
Sachdev, Shashi, Laredo, Tx*
Salley, Edward, Dallas, Tx*
Sirmon, Cynthia, Midland, Tx*
Townsend, Lauralee, Lubbock, Tx*
Vaello, Elizabeth, Georgetown, Tx*
Varela, Arturo, Edinburg, Tx*
Varner, Rae, Lubbock, Tx*
Vasquez, Juan, San Antonio, Tx*
Velasquez, Sarah, Georgetown, Tx
Ware, Dwight, Selma, Tx*
White, Tessa, Fort Worth, Tx
Wilder, Gerard, Houston, Tx

U

Andersen, Jacob, Sandy, Ut
Brown, Cassidy, Sandy, Ut
Clark, Sean, South Jordan, Ut
Daniel, Scott, Saint George, Ut*
Davis, Nichole, Pleasant Grove, Ut
Geertsen, Tyree, Saratoga Springs, Ut
Jablonski, David, Salt Lake City, Ut
Maes, Patrick, West Valley City, Ut
Romero, Kezia, West Jordan, Ut
Scherf, Stephanie, Salt Lake City, Ut
Stemplevich, Kristina, Sandy, Ut
Urcino, Nancy, Salt Lake City, Ut
Webb, Jason, Salt Lake City, Ut

V

Benouahi, Khadija, Clifton, Va*
Crowe, Dana, Springfield, Va*
Hobbs, Crystal, Forest, Va*
Moore, Shabaka, Petersburg, Va*
Murphy, John, Charlottesville, Va*
Richard, Marie, Chesapeake, Va*
Stewart, Ron, Richmond, Va*
Virak, Kenneth, Chesterfield, Va*
Wilson, Cherise, Gainesville, Va*
Wilson, Tondamia, Richmond, Va*

Aiken, Rebecca, Albany, Vt
Beck, Jennifer, Bristol, Vt
Boissy, Lindsay, Winooski, Vt
Cady, Natasha, Barton, Vt
Cutting, Karen, Orleans, Vt
Dillon, Kayla, Waterbury, Vt
Gabert, Michael, Essex Jct, Vt
Giffin, Connie, Essex Town, Vt
Kelley, Kimberly, Cambridge, Vt
King, Ryan, South Burlington, Vt
Lafreniere, Darcey, Saint Albans, Vt
Mortimer, Wendy, Essex Junction, Vt
Powell, Trevor, Jeffersonville, Vt
Roberts, Regina, Jericho, Vt
Shappy, Cassie, Colchester, Vt
Young, Anitra, Essex Junction, Vt

W

Corley, Rebecca, Spokane Valley, Wa*
Fuller, Elizabeth, Shoreline, Wa*
Graham, Tara, Seattle, Wa*
Jaro, Alemayehu Kolby, Spokane, Wa*
Korn, Ann, Auburn, Wa*
Lykins, Elizabeth, Seattle, Wa*
McDonald, Bradley, Ellensburg, Wa*
Ulrich, Jennifer, Vancouver, Wa*
Wilson, Michael, Seattle, Wa*

Allee, Melanie, Mosinee, Wi*
Arnold, Lukas, Chippewa Falls, Wi*
Christensen, Peter, Milwaukee, Wi*
Griffiths, Jennifer, Ashland, Wi*
Gunderson, Chris, Aniwa, Wi*
Lusz, Gregory, Milwaukee, Wi*
Mael, Spencer, Madison, Wi*
Nelson, Eric, Hobart, Wi*
Nordman, Miranda, Warrens, Wi
Olski, Jessica, Wisconsin Rapids, Wi
Rewoinski, Scott, Saint Francis, Wi*
Vargas, Sabrina, Mayville, Wi*
Wenstad, Denise, Eau Claire, Wi

Ruckman, Jacqueline, Bunker Hill, WV*
Watson, Randi, Glen Easton, WV*

Longwell, Heather, Worland, Wy*

Military Members

Cronk, Amanda, Ellsworth AFB, SD

International Members

Alsaadoun, Hadil, Riyadh, Saudi Arabia
Ayles, S Patricia, St Albert, Ab, Canada
Plesowicz, Magdalena, Edmonton, Ab, Canada
Rowe, Jeffery, Windsor, On, Canada

A Salute to our 2012 Corporate Partners

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

The link between the respiratory profession and manufacturers is clear. If respiratory practice expands, so too does the economy for our industry partners.

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.

AMERICAN ASSOCIATION FOR RESPIRATORY CARE
AARC
CORPORATE PARTNER

CareFusion
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Dräger
GE imagination at work
Maquet Getinge Group
Kimberly-Clark
Tri-anim
Teleflex

RC Currents

IN THE NEWS

How Do They Do That in Namibia?

AARC is searching for City Hosts and International Fellows for our 2012 International Fellowship Program. Since 1990, health professionals from 50+ countries have shared experiences, knowledge, and lasting friendships through this exceptional program. The three-week program takes each participant to two host U.S. cities and concludes with attendance and acknowledgment at the AARC Congress.

If you would like to use your hospitality skills, provide the visiting fellows with a quality educational experience, and give them an opportunity to observe RC in a wide variety of settings, see www.aarc.org/resources/international_fellows/ for information. Deadline for applications is June 1, 2012. ■

National Health Observances

- **National Public Health Week**; April 2–8; American Public Health Association; (202) 777-2425; www.nphw.org
- **National Asthma and Allergy Awareness Month**; May; Asthma and Allergy Foundation of America; (800) 727-8462; info@aafa.org
- **World Asthma Day**; May 1; Global Initiative for Asthma; www.ginasthma.com; materials available

AARC Working To Fix Pulmonary Rehab Snag

The AARC, working with other pulmonary organizations and societies (American College of Chest Physicians, American Association of Cardiovascular and Pulmonary Rehabilitation, American Thoracic Society, and National Association for Medical Direction of Respiratory Care) is developing a Pulmonary Rehabilitation Toolkit that will serve as a resource and educational document for hospitals to use to accurately report their charges to Medicare for services furnished as part of a hospital outpatient pulmonary rehabilitation (PR) program (G0424). The toolkit is expected to be available in the spring after its contents are tested with a diverse group of PR programs to ensure it is understandable and usable.

AARC members who have served as chair and chair-elect of the Continuing Care/Rehabilitation Section have helped steer this important project as have other experienced pulmonary rehab clinicians from our sister organizations, as PR programs faced a significant reduction in payment beginning Jan. 1, 2012. While AARC and others tried to get the Centers for Medicare and Medicaid Services (CMS) to postpone any reduction for another year until better data could be evaluated, CMS felt it had more than sufficient claims information to move forward and that the payment rate of $37 per session was adequate. Among other things, the CMS analysis was based on information hospitals submitted to report charges for G0424 (i.e., UB-04 claim form) in order to get paid for their services.

AARC and others hope to increase future payments for hospital outpatient PR programs by getting hospitals to use the toolkit as a resource in developing the proper charge for its PR program. It also offers guidance on communicating with key hospital financial personnel who report claims data to CMS. This effort will take time, and there is no short-term solution to the current payment rate. But if all goes according to plan, changes to the payment rate would most likely be reflected at the earliest in the calendar year 2014 update to the Hospital Outpatient Prospective Payment System.

An AARC members' webinar is being planned to coincide with the formal launch of this PR Toolkit; stay tuned for an announcement on the AARC website once a firm date has been set. ■

Enter the 2012 AARC Photo Contest

AARC Times is looking for creative members to enter our AARC Photo Contest. Winners will receive a free one-year membership renewal and have their photo entered into our Photo-of-the-Year Contest with the chance of it being chosen to appear on the February 2013 cover. For instructions and guidelines, select the *AARC Times* icon on www.AARC.org and click on the "Photo-of-the-Year Contest" link. Deadline is Oct. 1, 2012. ■

Respiratory Care Education Annual Manuscript Deadline Extended

The AARC will publish Volume 21 of the Respiratory Care Education Annual in 2012. This refereed journal is committed to providing a forum for research and theory in respiratory care education and is listed in the "Cumulative Index to Nursing and Allied Health Literature."

The AARC Education Section invites educators to submit papers for consideration. Preference will be given to papers that emphasize original research, applied research, or evaluation of an educational method. Other topics that may be considered include interpretive reviews of literature, educational case studies, and point-of-view essays. Submissions will be reviewed based on originality, significance and contribution, soundness of scholarship (design, instrumentation, data analysis), generalizability to the education community, and overall quality of the paper.

Papers should be approximately 6–10 pages in length and **must** follow the guidelines in the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals," 5th edition (1997). These may be found at www.rcjournal.com/guidelines_for_authors/preparing_the_manuscript.cfm. Abstracts should not exceed 250 words. For more information, contact Dennis Wissing, PhD, RRT, FAARC, editor, at dwissi@lsuhsc.edu or (318) 573-9788. Electronic copies of completed manuscripts should be sent to Bill Dubbs at dubbs@aarc.org. **The deadline has been extended to March 28, 2012.** ■

Request for Open Forum Abstracts at AARC Congress 2012

The AARC invites you to submit abstracts for the Open Forum at AARC Congress 2012. Considered by many to be the premier event at the AARC Congress, the Open Forum is your opportunity to gain national and international recognition for your research in cardiorespiratory care by submitting an original abstract for presentation at the Congress and having it published in Respiratory Care. The deadline to submit abstracts for the Open Forum is June 1 at http://aarc2012.abstractcentral.com/. ■

Northern California's Answer to Asthma

by Michael Monasky, RRT-NPS, RCP

Michael Monasky (far left) joins camp founder Al Brown (second from left) and other staff members as campers from the Cottonwood Cabin display the camp sign.

As a young man in Montgomery, AL, Orie Alfred Brown, Sr., JD, taught elementary school. After law school, he educated college students in criminal justice, emphasizing legal procedure and civil rights. He helped establish cultural diversity policies and programs on the California State and University of California campuses.

With contacts at the Boys & Girls Club of Sacramento, he wondered what he would do after retirement. Then he encountered Sam Louie, MD, a University of California, Davis pulmonologist who informed him of the high and persistent asthma rates in children of the Central Valley. Why not establish a camp to enable kids to manage their disease? After all, asthma education was a natural extension of his vocation to teach.

Campers test their skills on the camp's zip line.

Soon a friend introduced Professor Brown to The Taylor Family Foundation. The Taylor family built a resort in the hills near Livermore on property owned by the East Bay Regional Park District to accommodate children and at-risk youth with life-threatening conditions, chronic illnesses, and disabilities. All year long the camp functions for kids with a variety of disorders from HIV-AIDS to autism, from hemophilia to burn survivors, and now, moderate-to-severe asthma.

When I volunteered at the camp last August, the kids climbed rock walls and swam in a great pool overlooking Livermore and Mount Diablo. The sunsets and night sky were spectacular, while wild turkeys and deer paced the grounds. The Taylor staff prepared first-rate fare for all our meals. The cabins were built to award-winning, green, architectural code. Everyone ate and slept very well, as the activities were constant and accommodations were comfortable.

At awakening and just after dinner, kids gathered in the infirmary for asthma education. Kids were taught age-appropriate asthma lessons: How do I use my inhaler? What is my disease likely to do to me? They also performed skits based on topics of their own interest. Camp counselors, including student nurses, discussed asthma plans with the kids. Astonishingly, despite all the strenuous physical activities and demands of the camp, there were no adverse health events. Nobody got sick, and everyone had fun. I

Monasky's grandson, Aiden, had a great time at the camp and is already looking forward to the 2012 session.

ought to know; my grandson wants to return to camp this year.

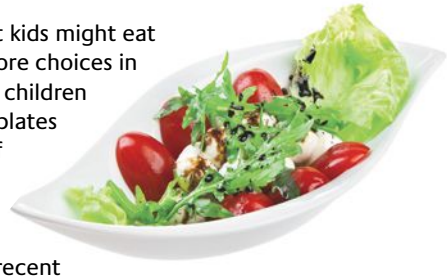
Al Brown has his own reasons for returning to camp and continuing it beyond its 10th anniversary. He addressed the camp, saying that his memories include a personal conversation with Dr. Martin Luther King, Jr., who counseled him to be Christian in his ways with all persons. It's a commitment that springs from the very center of the civil rights movement and serves as a moral compass for this asthma camp in northern California. If you're a fellow respiratory therapist, nurse, pediatrician, allergist, or pulmonologist in the Sacramento area, please contact the camp with referrals.

Children 6–12 with moderate-to-severe asthma are enrolled as space permits. An asthma plan from a primary care doctor is required, along with the necessary medications to accompany the child. Some additional paperwork is required from parents and guardians. Otherwise, the camp is free. Al would have it no other way. Learn more about California FairPlay at www.cafairplay.org/. ■

After a long career in social work, Michael Monasky enrolled in the RC program at American River College in Sacramento, CA, graduating in 2010. He currently sits on the Public Health Advisory Board for the County of Sacramento.

▶ Strange But True…

Benjamin Button? In the movie "The Strange Case of Benjamin Button," a man lives his life in reverse. Now researchers from the University of Pittsburgh have given mice that same opportunity. When they injected stem cells from healthy young mice into mice who were getting up in years, the oldsters showed renewed signs of vigor.



Tasty: Cornell investigators suggest kids might eat better if their plates were full of more choices in more colors. When they presented children and adults with pictures of dinner plates with various numbers and colors of foods, the kids went for the plates with lots of color and diversity.

All in a day's work: According to a recent article in the *Los Angeles Times*, two biotechnology companies are getting ready to offer machines capable of sequencing an entire human genome in about a day, opening the door to more personalized medicine. The cost: less than $1,000.

Ancient "home": New York researchers have found evidence of tobacco in a piece of Mayan pottery dating back to 700 A.D. Chemical analysis of the interior revealed traces of nicotine, and the Mayan hieroglyphics on the outside sealed the deal. The words read, "the home of his/her tobacco."

Heart Brake: Learning that someone doesn't like you could affect your heart, find Dutch researchers who studied students told by a computer that people who saw their photos did or didn't find them appealing. When the computer delivered bad news, the students' heart rates dropped by about 10%. (University of Amsterdam)

Baby talk: Babies learn language by hearing language. New research from Florida Atlantic University shows they develop their skills by reading lips, as well. The Florida scientists found babies begin to shift their gaze on the human face from the eyes to the lips at about six months, a prime time for language development. By the time they reach their first birthdays, they're once again looking people in the eye. ■

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

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

Free Clinic Tackles Prescription Drug Needs

Bette Grey's free clinic meets the needs of uninsured people in her community.

Back in 2004 Bette Grey, BA, RRT, CPFT, and her family went through a rough few months when her husband lost his job and, as a result, the family's health insurance. Thankfully, times quickly turned around for the Grey family, but her brief experience as one of the 45 million uninsured Americans was an eye opener for the AARC member. She decided her new mission in life would be to open a free clinic in her community to help ensure more of these folks receive the care they need.

As we reported in the November 2007 issue of *AARC Times*, the Columbia County Volunteers in Medicine Clinic, Inc., opened in March of 2007. In December of 2010, the Mifflinville, PA, facility marked a major milestone as it treated its 1,000th patient. The full-service clinic welcomes clients with a wide range of conditions, from pregnancy to diabetes. "We have diagnosed 46 cancers, including lung, breast, skin, esophageal, liver, pancreas, and brain," says Grey. "Respiratory diseases, whether chronic or acute, have been treated as well; and we have a lot of asthmatic and COPD patients. Many of our patients are smokers."

Today, Grey functions as the clinic director, respiratory therapist, case manager, materials manager, organizer, fundraiser, and, at times, plumber and the "mom who nags patients to make sure they do what they should do." A staff of volunteer physicians, nurses, and other health professionals from the community, along with other volunteers (the oldest of whom is 87), keep the clinic going. Funding comes from private donations, grants, and fundraising efforts.

The RT says practicing respiratory care at the clinic has been a rewarding experience for her, and she feels like her patients get as good — or sometimes even better — care than they would in the private sector. "As an RT, I am able to provide a lot of education and instruction, along with case management." Grey is also able to provide spirometry, which in many cases wouldn't be available to patients if they did have insurance; and she never feels as if she's on someone else's clock.

"I can spend as much time as I want providing respiratory therapy. There are no RVUs or someone saying please hurry up." Having extra time to spend with each patient is paramount to the success of the clinic, because most of them present with significant challenges — and not only of a medical nature. "The population we treat needs a lot more attention than their insured counterparts," explains Grey. "Many of our patients don't have food, heat, or homes. So a lot of my time over the last couple of years has been spent deciphering their social needs and where to help them fill those gaps," one of which is paying for their respiratory prescriptions. "All of our respiratory patients have a difficult time affording their medications," she says, noting that the days of $10 albuterol inhalers at Walmart are over. "Since they stopped carrying these MDIs, the cheapest albuterol MDI I have found is approximately $45. The combo meds are much less affordable."

Thankfully, the clinic has benefited from more than $1 million in brand name medications that have been obtained through prescription assistance programs offered by the pharmaceutical companies. Respiratory patients who come to the clinic with an acute exacerbation are provided with medication samples and a holding chamber. Grey then works with the assistance programs to ensure patients' medication needs continue to be met.

"In our clinic, each exam room has a computer with the Internet, as well as our electronic medical record," she explains. "As part of our electronic

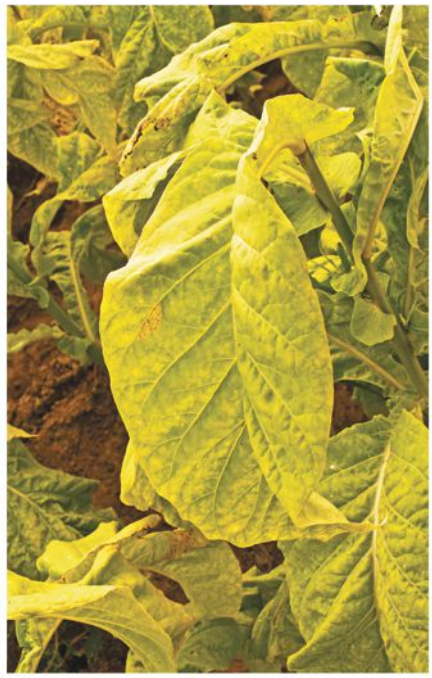
medical record, we have the ability to type in a medication and it will bring up any applications for the medications that might be available." This allows the clinic to print one out and have the patient and the provider complete it. The clinic then sends it in to the company for the patient so the clinic knows it arrives.

For many patients, this assistance has led to dramatic improvements in their conditions. Grey recalls a 49-year-old man who presented to the clinic with a COPD exacerbation. He received a nebulizer and medications, along with prednisone and antibiotics, and was started on a controller medication using samples the clinic had on hand. The medication worked well for him, so Grey enrolled him in the drug company's prescription drug-assistance program and also found a free source of albuterol for him. She provided him with smoking-cessation counseling as well, and he was able to quit and stay quit. The gentleman had previously lost his job due to his breathing problems but, at last report, had been able to find employment elsewhere.

Bette Grey calls on her fellow therapists to help minimize those potentially avoidable ED visits by connecting their uninsured patients with the prescription drug-assistance programs that are out there to help. "Patients really want to be well," she says, "and there is really no better reward as a professional than to see a patient who is breathing better or who can provide for their family because they don't have to miss work due to their respiratory illnesses."

A list of prescription drug-assistance programs can be found on YourLungHealth.org. ■

Tobacco Cessation: A Good Return on Investment



Medicaid programs could realize substantial savings by including comprehensive tobacco-cessation benefits in Medicaid insurance coverage, report George Washington University researchers publishing in *PLoS ONE*. They found that for every dollar spent on these programs, Medicaid programs could save an average of $3.12, resulting in a $2.12 return on investment.

The researchers used data from the 2002–2008 Medical Expenditure Survey and the Behavioral Risk Factor Surveillance Surveys to estimate the cost of hospital inpatient admissions for smokers covered by Medicaid. "In 2004, smoking-related Medicaid expenditures for all states combined was $22 billion, which represented 11% of all Medicaid spending," notes study author Leighton Ku, PhD.

From there, the researchers looked at costs for a smoking-cessation program for Medicaid patients in Massachusetts that offered a wide range of smoking-cessation medications, as well as individual and group counseling, comparing them to expected hospitalization rates for these patients. Results showed the program saved an average of $388 per user per year. ■

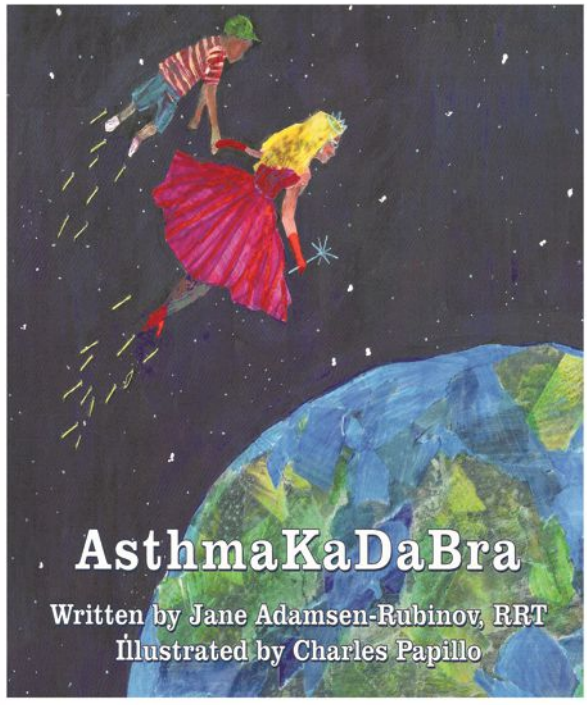
RT Student Members: Send Us Your Stories and Editorials

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

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

"AsthmaKaDaBra": New Book Educates Kids and Parents About Asthma



Jane Adamsen-Rubinov, RRT, was dreaming of an acting career when she suffered an asthma attack while preparing to attend a summer drama workshop when she was 15. She ended up in the hospital, battling both asthma and bilateral pneumonia, and the experience turned out to be a life-changing event. "I received respiratory therapy at that time, and it totally intrigued me," says the AARC member. "I was destined to become a respiratory therapist with asthma."

After a career that's spanned 35 years and several continents — she's practiced RC in hospitals in Saudi Arabia and Russia as well as here in the United States — she now serves a Medicaid population in Fort Lauderdale, FL, delivering care to children in their homes and at a Prescribed Pediatric Extended Care center. But a lot of her passion these days is devoted to promoting greater awareness of asthma among kids and families through her new children's book, "AsthmaKaDaBra."

"AsthmaKaDaBra" tells the story of a young boy who learns all about asthma from a superhero named Asthmarelda.

Adamsen-Rubinov says the idea for the book came to her one night when she was working in a hospital emergency department. "It was a tough night in the ER," she recalls. "And there she was. A baby girl two years of age, ashen gray and gasping for breath, was thrust into my arms by her frantic parents as they ran into the hospital emergency registration area."

The RT recognized the child from previous ED visits. "When our eyes met, there were no words that could be spoken that could express the agony of this gasping child," she says. "We all ran into the treatment room for urgent resuscitation." Physicians and staff spared no effort trying to revive the child, but to no avail. The little girl died in the ED.

"Her parents were beyond grief stricken. A part of me died, too," says Adamsen-Rubinov. But she remained focused enough to assess the situation. "Both parents of this baby girl were heavily sprayed with perfume and men's cologne. Cigarette smoke reeked from their clothing and breath." The scents were so strong that her own asthma flared up to the point where she required a breathing treatment.

Jane Adamsen-Rubinov is on a mission to make sure more kids and parents know how to manage asthma.

"This was my 'aha moment.' I knew then that I must do something to educate families about the care and handling of an asthmatic child." The idea for "AsthmaKaDaBra" was born.

The book features a young boy named Michael who suffers an asthma attack while visiting a friend of his mom's who smokes. A trip to the hospital ensues, and the asthma attack is brought under control. Michael's mom takes him home and tucks him into bed, and that's where the fun starts. In his dreams, the boy is visited by a superhero named Asthmarelda, who takes him on a magical flight across the night sky to learn all about asthma.

The author says she chose a superhero theme for the book because "superheroes seem to speak to the imaginations of all of us at one time or another." She says the book educates kids and their parents as they read it to their children. So far it appears to be working. Physicians are using the book in the urgent care setting, and parents are often heard to comment that they "didn't know that" when reading portions of the text. She hopes to find a partner who will provide funding that will enable her to give the book away for free to more parents at the "magical moment of learning — when their child is having trouble breathing."

Right now, "AsthmaKaDaBra" is available through several online booksellers. For more information, contact Jane Adamsen-Rubinov at asthmarelda@bellsouth.net. ■

How Smoking May Lead to Emphysema

Researchers from Baylor College of Medicine believe they have uncovered the path that leads from smoking to emphysema, at least in mice. Working with mice who were exposed to cigarette smoke, they found smoking activates genetic factors that then cause the inflammation that spurs the development of emphysema.

Mice in the study developed the condition after three or four months of cigarette smoke exposure. The investigators will now explore whether the inflammation caused by smoking could also be playing a role in lung cancer. The study appeared in the Jan. 18 online edition of *Science Translational Medicine*. ■

Contribute to Writer's Corner

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

Explaining Why ICS Sometimes Fails

New research in the Jan. 6 issue of the *American Journal of Respiratory and Critical Care Medicine* may help explain why some mild-to-moderate asthmatics don't respond well to treatment with inhaled corticosteroids (ICS): They do not have the eosinophils targeted by those medications.

In a study involving 995 asthmatics enrolled in nine clinical trials conducted by the NHLBI's Asthma Clinical Research Network, investigators found sputum eosinophilia in only 36% of asthmatics not using an ICS and 17% of those using an ICS. Among patients who achieved good asthma control, 26% had sputum eosinophilia, compared with 15% among patients who had not achieved good control.

Among asthmatic subjects not taking an ICS who had repeated induced sputum samples, 22% had sputum eosinophilia on every occasion (persistent eosinophilia), 31% had eosinophilia on at least one occasion (intermittent eosinophilia), and 47% had no eosinophilia on every occasion (persistently non-eosinophilic). Two weeks of treatment with a combination of anti-inflammatory drugs resulted in significant improvements in airflow obstruction in subjects with eosinophilic asthma but not in those with persistently non-eosinophilic asthma. Bronchodilator responses to albuterol, however, were similar in eosinophilic and non-eosinophilic asthma.

"Prevalence estimates for non-eosinophilic asthma in earlier studies were based on single sputum samples," study author John Fahy, MD, professor of medicine and director of the Cardiovascular Research Institute/University of California San Francisco Airway Clinical Research Center, was quoted as saying. "Here we show for the first time that sputum eosinophilia is persistently absent in a large percentage of patients with mild/moderate asthma when sputum is analyzed repeatedly over time."

Dr. Fahy believes future research should take the eosinophil phenotype into consideration and calls for the development of medications that can help patients with non-eosinophilic airway disease. ■

Here's More Evidence Smoking Bans Save Lives

A new study out of the Mayo Clinic confirms what other studies have already found: Smoking bans reduce the risk of heart attacks. In the 18 months after Olmsted County, MN, instituted a smoke-free ordinance in 2007, the incidence of heart attacks and sudden cardiac death was cut in half. Adult smoking dropped by 23% during the same time frame, while hypertension, high cholesterol, diabetes, and obesity rates remained stable or increased.

"Our findings provide support to the life-saving effect that smoke-free legislation can have among community members affected by these laws," study author Jon Ebbert, MD, was quoted as saying. He and his colleagues presented their findings at the American Heart Association's Scientific Sessions in Orlando, FL. ■

Acute Lung Injury Increases Risk for Long-term Depression

People who develop acute lung injury (ALI) are at significant risk not only for impaired physical functioning but for ongoing depression, report Johns Hopkins investigators who assessed 186 mechanically ventilated ALI patients three, six, 12, and 24 months following injury. Outcome measures included the Hospital Anxiety and Depression Scale, with a score of 8 or higher indicating depressive symptoms. Two or more impairments in instrumental activities of daily living defined impaired physical function.

The cumulative two-year incidence of depressive symptoms among the 147 patients without baseline depression was 40%. The cumulative incidence of impaired physical function among the 112 patients without baseline-impaired physical function was 66%. Incidence rates were highest at the three-month follow up and declined thereafter; but in most patients, depression and impaired physical function lasted for more than 21 months. In multivariable analyses, education of less than 12 years was significantly associated with depressive symptoms; and depressive symptoms at the last follow up were significantly associated with impaired physical function.

"Early identification and treatment of depressive states should be evaluated as a potential intervention to improve long-term outcomes in ALI survivors," says study author O. Joseph Bienvenu, MD, PhD. "Depressive symptoms are a potentially modifiable risk factor for later-onset physical impairment in these patients." The study was published in the *American Journal of Respiratory and Critical Care Medicine* in December. ■

Read the Rest of the Story at AARC.org

- Emerging roles for the RT in alpha-1 antitrypsin deficiency — www.aarc.org/education/alpha1_course/
- IOM releases report on allied health care workforce — www.aarc.org/headlines/11/12/iom.cfm

Members, Send Us Your Human Interest Stories

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

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

AERD Linked to Secondhand Smoke Exposure

Researchers publishing in the January issue of the *Annals of Allergy, Asthma & Immunology* have for the first time linked aspirin exacerbated respiratory disease (AERD) to secondhand smoke exposure in childhood. The study was conducted among 260 patients with asthma and AERD and their asthma- and AERD-free spouses. Compared to the spouses, those with AERD were more than three times as likely to have been exposed to secondhand tobacco smoke as children and five times as likely to have been exposed during childhood and adulthood. Smokers were more than one and a half times more likely to have AERD than those who never smoked.

"There is no safe level of exposure to secondhand smoke," co-author Donald Stevenson, MD, was quoted as saying. "Smokers need to realize that they are putting their children and spouses at risk of serious health problems, including asthma associated with AERD." ■

Pioneering Physician Credited with Saving the Lives of Preemies

The pioneering physician who discovered the role played by surfactant in the lungs of newborns recently passed away at the age 84. Dr. Mary Ellen Avery, also known for being the first woman to head a clinical department at Harvard Medical School and the first to be chosen as president of the Society for Pediatric Research, is credited with saving the lives of hundreds of thousands of premature infants through her discovery.

She and her colleagues conducted research from 1959 to 1965 to investigate the leading cause of death among premature infants. Known then as hyaline membrane disease, the condition was thought to result from glassy membranes found in autopsies of affected infants but, thanks to Dr. Avery's work, was later renamed respiratory distress syndrome. The mix of fat and proteins in the lungs identified by the physician came to be called surfactant, and a replacement for the substance was subsequently developed by Japanese pediatrician Dr. Tetsuro Fujiwara.

Dr. Avery graduated from Wheaton College in Massachusetts and was one of only four women in her medical school class at Johns Hopkins. She graduated in 1952, only to spend two years recovering from tuberculosis, an experience she said led to her interest in knowing more about the physiology of the lung. Her textbook, "The Lung and Its Disorders in the Newborn Infant" is considered a classic in the field. ■

▶Transitions


1

Garry Kauffman, MPA, RRT, FAARC, has joined Wake Forrest Baptist Medical Center in Winston-Salem, NC, as director of respiratory care. Kauffman comes to the position from York, PA, where he served as CEO of Select Specialty Hospital. He previously served as director of strategic implementation at Lancaster General Hospital in Lancaster, PA. (Photo 1)

Josh J. Escudero, MBA, RRT, has been named the director of respiratory care at Genesee Community College in Rochester, NY. Escudero previously served on the staff at Inspired Medical Solutions and Tri-Anim Health Services, and was a supervisor of respiratory care at the University of Rochester Medical Center.


2

Edward Mehaffey, BS, RRT, CPFT, is the new director of respiratory services at Advantage Therapy Centers in Mount Laurel, VA. Mehaffey brings more than 20 years of experience in the rehabilitation, home care, and acute care settings to the position. (Photo 2)

Kevin Fly Hill, BS, RRT, has received the Robert Arado Outstanding Advocate Award, sponsored by the Accredited Medical Equipment Providers of America. Hill founded CPS Medical in Tyler, TX, in 1980 and has since expanded to three locations. He became president of the Texas Alliance of Home Care Services in 2011.


3

James Love, RRT, was named Advocate of the Year by the Arizona School Boards Association. An RT at Casa Grande Regional Medical Center in Casa Grande, AZ, Love has served on his local school board for more than 11 years. He is also a long-time member of the AARC Political Action Contact Team. (Photo 3)

Marie R. Wood of Edgefield, SC, passed away in January. She was director of respiratory care at Edgewood County Hospital at the time of her death.

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

Honoring Military RTs

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

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

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

Classifieds

ADVERTISING SECTION

AARC Times Classified Advertising Information & Requirements:

Classified Word Advertisements

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

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

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

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

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Bachelor's degree required. Minimum five years as Respiratory Care Practitioner + two years experience as supervisor of multiple employees required. Experience in computer applications. Working knowledge/understanding of current regulations. CRT or RRT required. Valid CA RCP license or ability to obtain. Excellent communication skills, interpersonal skills, and conflict resolution management.

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Department of Respiratory Care
School of Health Professions

The Department of Respiratory Care at the University of Texas Health Science Center San Antonio invites applications for the Director of Clinical Education at the rank of Assistant Professor, Associate Professor or Professor in the Department of Respiratory Care. This position will be available as of September 1, 2012.

The successful candidate will teach in the Bachelor of Science Degree respiratory care program. This faculty member will be responsible for teaching and evaluating students in the classroom, laboratory and online for courses assigned. The Director of Clinical Education is responsible for managing all aspects of the program's clinical education. This includes orientation to clinics, establishing clinical schedules, assigning students to clinical sites, ensuring clinical evaluations are performed, clinical instructor/preceptor training and direct communication with the clinical affiliates. Productive scholarship and service to the university and the profession are expectations of this position. Clinical Practice opportunities are available through the practice plan. This is a 12 month position and reports to the Chair of the Department of Respiratory Care. Academic rank\appointment\tenure or non-tenure track status\salary are dependent on the educational experience and degree of the successful candidate.

Qualifications:
The qualified individual must have a master's degree, though a doctoral degree is preferred, be a Registered Respiratory Therapist, hold or be eligible for licensure in Texas. In addition they must have a minimum of four years of clinical experience as a respiratory therapist, with experience in respiratory care education. The applicant must be an active member of the AARC.

Applications are being accepted and review will begin immediately and continue until the position is filled. Applications received by April 15 will be guaranteed consideration. The start date is September 1, 2012.

Please send a letter of interest, CV, and complete contact information for three references to:

Donna (De De) Gardner, MSHP, RRT, FAARC
Chair- Respiratory Care Department
Chair – Respiratory Care Search Committee
Department of Respiratory Care
School of Health Professions
UT Health Science Center – San Antonio
7703 Floyd Curl Dr. MC6248
San Antonio, Texas 78229-3900
210-567-7960

Application materials can be submitted electronically to gardnerd@uthscsa.edu

The University of Texas Health Science Center at San Antonio is an Equal Employment Opportunity/Affirmative Action Employer.
All faculty appointments are designated as security sensitive positions.

Topics For Professor's Rounds 2012

■ **The Mandate to Reduce Hospital Readmissions - How Respiratory Therapists Can Help**
John R. Walton, MBA RRT FAARC
Sam Giordano, MBA RRT FAARC

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■ **Medical-Legal Implications of the Changing Healthcare System for Respiratory Therapists**
Anthony L DeWitt, JD RRT FAARC
Doug Laher, MBA RRT

■ **Reducing Cost While Adding Value - Critical Roles for Respiratory Therapists**
Rick Ford, BS RRT FAARC
Doug Laher, MBA RRT

Dräger

■ **Managing the Chronically Ill Pediatric Respiratory Patient**
Bruce K Rubin, MD MEngr MBA FAARC
Timothy R. Myers, BS RRT-NPS

■ **Educating Patients with Chronic Respiratory Disease – RTs Make the Difference**
Timothy R. Myers, BS RRT-NPS
Tom Kallstrom, MBA RRT FAARC

■ **Palliative and End-of-Life Care: What Respiratory Therapists Need to Know**
J.Randall Curtis, MD MPH
Dean Hess, PhD RRT FAARC

■ **Get 'Em Movin' - Early Mobility for Ventilator-Dependent Patients**
Eddy Fan, MD FRCPC
Dean Hess, PhD RRT FAARC

CareFusion

■ **Improving Patient Safety - How Respiratory Therapists Can Contribute**
Karen Frush, MD
Ira Cheifetz, MD

BONUS

Effectively Treating Tobacco Dependence: We Can Move the Mountain
Michael Fiore, MD MPH MBA
Sam Giordano, MBA RRT FAARC

As shown above, some topics are sponsored in part by unrestricted educational grants.

We would like to thank our Sponsors for supporting Professor's Rounds through unrestricted educational grants. The AARC has the sole responsibility of assuring appropriate educational content of Professor's Rounds.

PLEASE NOTE: One topic is released each month beginning in April 2012 and will be shipped automatically to series purchasers. Topics and presenters are subject to change.

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Individual topics will be available for purchase as released.

Visit www.aarc.org/education for more information.

Calendar of Events

AARC & State Society Programs

April 17–19
Great Falls, MT
Montana State Respiratory Conference
Contact Bill Carmichael at williamcarmichael@benefis.org or (406) 455-5239

May 21–23
Virginia Beach, VA
Virginia Society for Respiratory Care's 35th Conference and Exposition
Contact Pamela Niblett at (757) 312-3054 or Ann Beverly at (757) 312-5256

May 23–25
Austin, TX
Texas Society for Respiratory Care's 41st Annual Convention and Exhibition
Contact TSRC at (972) 495-9200 or www.tsrc.org

May 30 – June 1
Oak Brook Terrace, IL
Illinois Society for Respiratory Care's 44th Conference and Exposition
Contact www.isrc.org or Kelli DeBerry at deberryk@Alexian.net or (847) 981-3581

July 13–15
Santa Fe, NM
AARC Summer Meetings
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

October 21–27
Respiratory Care Week
Contact AARC, (972) 243-2272, www.aarc.org

October 24
Lung Health Day
Contact AARC, (972) 243-2272, www.aarc.org

November 10–13
New Orleans, LA
AARC Congress 2012
Contact AARC, (972) 243-2272, www.aarc.org/education/meetings

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Submissions for the next available issue are due April 17.

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

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References: 1. Han J, Liu Y. Effect of ventilator circuit changes on ventilator-associated pneumonia: a systematic review and meta-analysis. *Respiratory Care*. 2010;55:467-474. **2.** Coffin S MD, MPH, Klompas M MD, Classen D MD, et al. Strategies to Prevent Ventilator-Associated Pneumonia in Acute Care Hospitals. *Infect Control Hosp Epidemiol*. 2008;29:S31-S40.

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