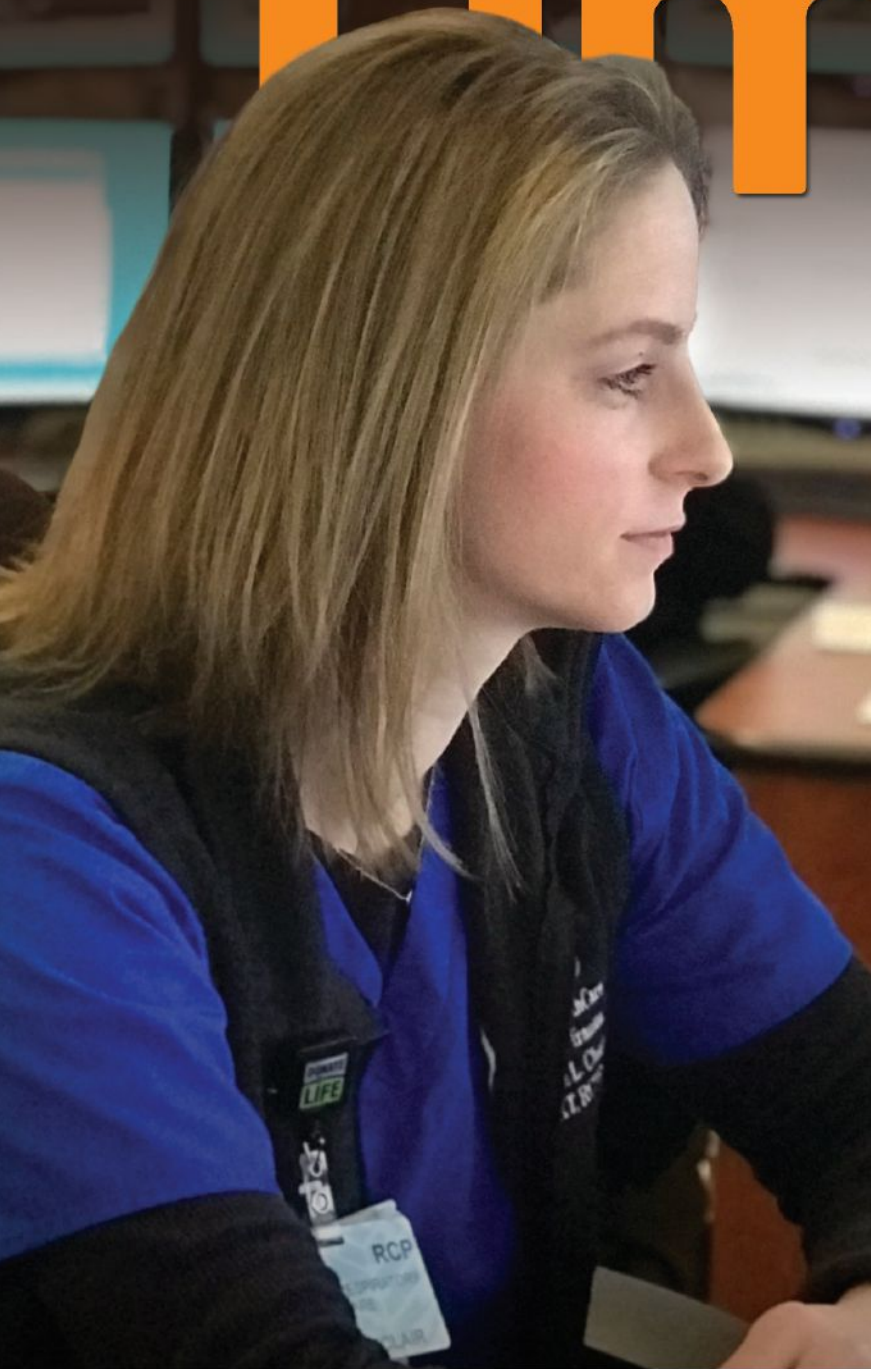




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Times



Respiratory Therapists Chart New Paths in the Profession

Keeping Up with Federal Policies

Jessica Sinclair, BSRT, RRT, works as a virtual respiratory therapist in the Virtual Critical Care Unit at Atrium Health in Charlotte, NC.

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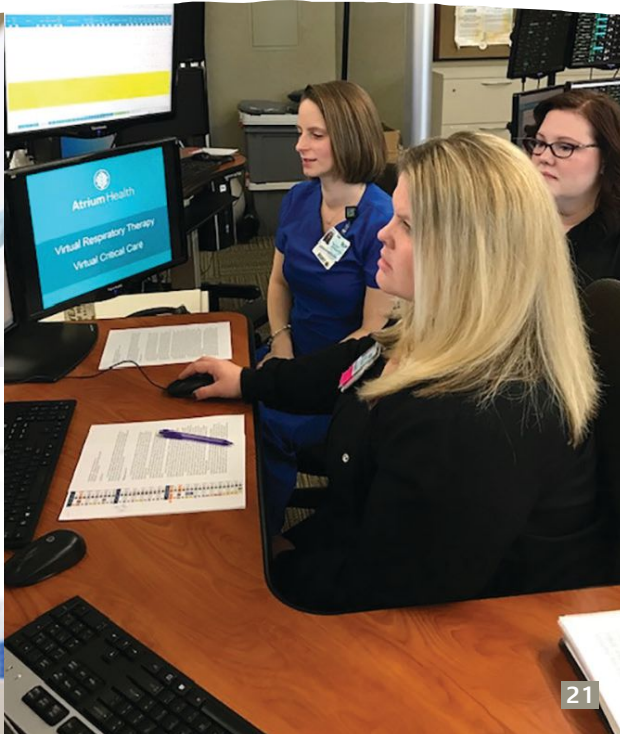




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AARC Strategic Plan

The American Association for Respiratory Care has a Strategic Plan that includes its Mission and Vision Statements for 2015–2020.

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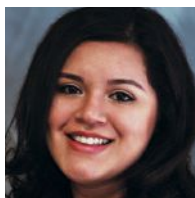
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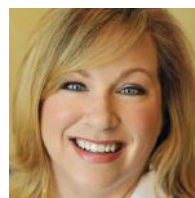
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Trust but Verify

by Anthony L. DeWitt, JD, RRT, FAARC

As therapists we have all seen what happens when a 16-year-old kid, with little driving experience, is gifted a muscle car for his birthday. Sometimes the result is a car wrapped around a tree, and sometimes it's a serious or fatal brain injury. And, sometimes it is not the child who is fatally injured.

Car insurance is required in every state, but most states have very low limits of liability. A \$25,000 liability policy wouldn't pay for two days of intensive care in most any hospital. It wouldn't pay for rehabilitation, nor would it pay for custodial care of a brain-injured survivor. And most importantly, it would not keep the person who provided that car to their teenager from being sued under a doctrine known as "negligent entrustment."

The law recognizes "dangerous instrumentalities" — a fancy way of saying "things that can hurt other people" — and it requires that people take care with them. How a person stores dynamite, firearms, or propane gas, and how a person hands out the keys to their car can all be issues with these dangerous instrumentalities. Given that an automobile policy may not provide coverage deep enough for a truly catastrophic situation, smart lawyers go after people who negligently entrust these dangerous instrumentalities to others.

Why should this be important to you? In a large hospital, with many staff members, multiple ICUs, and three shifts, there are multiple avenues for negligent entrustment to become an issue. Early in my managerial career, I was a big fan of a certain ventilator. It was years ahead of its time, and it required a different way of thinking. Allowing someone to use this ventilator without training — and without validating that training — was a recipe for patient injury. Sadly, I did not understand that my preference was less important than having a staff fully

up to speed on the ventilator, and the first year of use was tumultuous, to say the least. No one was hurt, but I learned a valuable lesson. Training and experience always beat panic and inaction.

I would venture that there are hospitals where there are at least a dozen therapists who could not explain the operation and troubleshooting of every ventilator being used, of every aerosol delivery system, and of the backup oxygen mechanisms in place. That is why frequent education is necessary.

As I have argued here, there is a difference between product liability (ie, liability that attaches when a product, used in the normal course of business, for the purpose intended, causes injury) and negligence (ie, an event in which a person fails to use due care). The product liability case will be filed against the manufacturer. The negligence case will be filed against the hospital as the employer of the negligent individual. Every training program should ensure that, if there is a problem with equipment that causes an injury, training has been directed at finding and fixing critical issues quickly. And this training should be validated by testing clinical competence in those fault-identification procedures.

Suppose a hospital buys the LungBuster-1000 and fails to train staff on it.

"It works like the LungBuster-500," the product rep says. "No training needed." Except, of course, there are subtle differences. No one takes the time to train or validate.

Uncle Rex has COPD and requires ventilation after an exacerbation. In week two of the ventilator's use, the electronic exhalation valve closes, and the software fails to detect the error. Therapists assume the ventilator is working because it doesn't alarm. Ventilation stops, hypoxia ensues, and the patient suffers a fatal injury.

about the author...



Anthony L. DeWitt, JD, RRT, FAARC, is an attorney and a partner in the firm Bartimus, Frickleton, and Robertson, PC, and resides in Opelika, AL. He has also published two books and numerous legal journal articles. This article is not a substitute for legal advice.

Even if the failure of the equipment is the result of a manufacturing defect, the failure to train will be asserted (either by the plaintiff as a cause of action or by the manufacturer looking to limit its liability) as another cause of the injury. Why? Because the patient could have been disconnected and hand-ventilated. The harm from this equipment failure could have been mitigated.

If you can document that staff were trained on the new equipment, that they understood the risks, that they had experience in trouble-shooting the ventilator, that a therapist took action as soon as she was notified, and that her actions were reasonable, the “negligent entrustment” talking point goes away. The hospital may still be sued, but the plaintiff would have a very difficult time proving that the therapist, as opposed to the equipment failure, caused the patient injury.

In the same vein, hospitals should be careful about using approaches to patient care that cobble together various pieces of equipment into systems that are used in critical care, or use drugs off-label, for the very same reason. Unless those charged with patient care have exceptional knowledge and skill, they’re being entrusted with a system that may not have received FDA approval and, at the same time, might not have been clinically validated. The International Standards Organization (ISO) has issued a standard pertaining to medical devices (ISO 13485) that

defines a medical device as an “instrument, apparatus, implement, machine, appliance, implant, reagent for in vitro use, software, material or other similar or related article, intended by the manufacturer to be used, alone or in combination, for human beings, for one or more... specific medical purpose(s)....”

In other words, a nebulizer combined with a ventilator is a medical device because it is used in combination. If that medical device does not meet regulatory requirements or ISO standards, you can bet an attorney will be more than happy to point that out to a jury and explain that the hospital put profits over patients (even where that likely is not the case).

Generally speaking, if you would not give a 12-year-old boy unrestricted access to a firearm because he might kill himself or someone else, then you should never give a staff therapist the use of life support equipment, whether that is a ventilator, long-term aerosol delivery system, or some other life support adjunct, without documented training and validation of clinical competence. Neither should you adopt equipment or techniques that have not met regulatory standards.

Therapists must always be cognizant of the fact that everything they do can be evaluated at a later date by 12 people who don’t know medicine and may not be able to spell atelectasis. ■



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1. Barto T, et al., Registry outcomes for HFCWO vest therapy in adult patients with bronchiectasis, Am Thor Soc Ann Meet, San Francisco, CA, May 2016, Poster P1496.





AARC Times Rewind

Keeping Up with Government Affairs

For the first 20-some years of its existence, the AARC spent most of its time engaged in ensuring that respiratory therapists had the educational and credentialing systems they needed to take their rightful place alongside other health care professionals. Outreach activities were mainly limited to medical groups and organizations with the potential to help move the profession forward. The idea of representing the field to government officials really wasn't even on the radar screen.

The Association and the profession alike received a wake-up call about the need to provide government representation in 1977, when then Department of Health, Education, and Welfare Secretary Joseph Califano challenged the need for respiratory care services during congressional hearings on health care costs. The AARC marshalled its communities of interest to respond to the challenge, and the upshot was a statement issued by the Department stating that "respiratory therapy is an essential life-saving method of treatment" and "respiratory therapists are dedicated responsible professionals."

However, it was clear to the AARC that waiting to react to governmental concerns wasn't the best way to handle things. From there on out, the Association knew it would need to be proactive, and one of the chief mandates for the newly created *AARC Times* was to report on those proactive measures.

Legal credentialing

The magazine has done just that throughout its 41-year history, keeping members up to date on everything from legislative and regulatory issues with the potential to affect the profession to the initiatives launched by the AARC to bring about needed change. Over the years we've covered all the steps the AARC has taken to build a solid base for respiratory care in Washington, DC, from the hiring of its first director of government affairs to the creation of our annual Capitol Hill Lobby Day. We've kept members informed about key issues, and we've encouraged them to step up and play a larger role in government affairs themselves, particularly when the issue at hand was near and dear to the RT cause.

Chief on the list back in the early days of *AARC Times* was legal credentialing for respiratory therapists and the debates that surrounded it within the profession. Should the profession have it? Did the profession need it? How would it affect the availability of RTs to serve the needs of patients? The magazine became a place for communicating everything related to legal credentialing to and among members of the profession.

Jeri Eiserman, MBA, RRT, FAARC, who went on to have a long and distinguished career on both the clinical and manufacturing sides of the profession, laid out the case in our September 1981 issue. "Official professional recognition leads to increased credibility with other health care professionals," she wrote. "Licensure provides the mechanism by which to prove that RT practitioners have met certain legally recognized standards, just as the physician, nurse, and physical therapist have."

Groundwork laid

Eiserman went on to talk about the measures being taken at that time by the AARC to move the profession in that direction, including the establishment of a Subcommittee on State Credentialing to provide state societies with the information, resources, and support they would need to pursue legal credentialing in their states; a speakers' bureau consisting of people with expertise in licensure who had agreed to travel around the country making presentations on the topic, without honorarium; workshops convened at the AARC annual meeting to bring RTs up to speed on the steps they would have to take to achieve legal credentialing; and financial assistance for state licensure activities via a special projects fund.

A legislative activity survey had also been sent to every state society president to find out where they were in the pursuit of licensure at that time and where they planned to go. According to the Eiserman article, 90% of the respondents reported having a licensure/legislative committee, and 87% said they were actively pursuing or planning for licensure.

Clearly, the groundwork had been laid and the interest was there. As it turned out, success was just around the corner, too. In 1982, California became the first state to pass a modern licensure law for respiratory therapists. We reported the news in our December 1982 issue, in an article written by California member Brad Lopez, RRT. He emphasized the herculean effort put forth by the California Society to bring the law into being.

“The biggest problems we faced in getting the bill passed were the unanticipated expenses and in obtaining majority votes at each legislative step,” he wrote. “Conservatively speaking, the California Society spent well over \$45,000 in direct costs alone. This does not include the countless voluntary man hours in developing and implementing the bill or the political action fund.”

Giving voice

Other states quickly followed California’s lead, and in the years since, AARC Times has reported on every state that has achieved state licensure or legal credentialing, right up to the article in our July 2016 issue noting that Hawaii’s long-fought-for licensure, first achieved on a temporary basis in 2010, had finally become permanent, making it the 49th state in the union to cross the licensure

hurdle. The Hawaiian RTs gave credit where credit was due in the story: “AARC Director of Government Affairs Cheryl West receives special praise,” said Carol Agard, BS, RRT, RPFT, FAARC, one of the key therapists involved in the Hawaii legislation. “We are so very thankful for the support from the AARC and specifically the support, encouragement, expertise, and timely responses from Cheryl West,” she said. “We would not have been successful without Cheryl’s assistance.” The article went on to note that the state society awarded West their President’s Award in 2015 to recognize her efforts.

Assisting the state societies in their efforts to achieve legal credentialing, which is now in place in all but one U.S. state — Alaska is the lone holdout — is arguably one of the AARC’s most significant achievements on the legislative front. AARC Times was proud to serve as the voice of the Association as it communicated with the membership about the challenges and opportunities that lay before it as it worked toward that goal. ■

Editor’s Note: AARC Times will be featuring this “Rewind” column throughout 2019 to reminisce about the 41+ years of printed AARC Times and to herald the all-digital AARC Times beginning with the January 2020 edition.

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Executive Office Update

Let's Make the "Unfriendly Skies" Friendly Again

by Thomas J. Kallstrom, MBA, RRT, FAARC

In my role as AARC executive director, I fly a fair amount, but it was not until a recent flight over the holidays with my wife from Tampa to Dallas that I realized how inimical the skies actually are. And it is especially unfriendly to travelers who have allergies or chronic pulmonary conditions.

As we boarded our flight, I counted eight dogs walking onto the plane with their owners, including one pit bull (not in a kennel). Talk about potential triggers for a respiratory episode at 35,000 feet! It was almost a perfect storm that thankfully never happened on my flight. And don't get me started on the peanuts, which still are offered on some airlines.

You might think that if a passenger experiences an allergic reaction, the flight attendant could simply pull an epinephrine auto-injector out of their first aid kit, but unfortunately there is no federal law mandating that such a life-saving device be available on commercial airlines. There is an ongoing effort with our colleagues at the Allergy and Asthma Network that continues to be fought to make epinephrine auto injectors mandatory on all flights.

Oxygen inflight is another issue. The FAA does not manage nor mandate oxygen rules on commercial aircraft. Each airline is different in terms of what paperwork the traveler with portable oxygen must provide before traveling and how far in advance of travel it should be submitted. Some airlines are more stringent than others, and there appears to be no consistency between the carriers.

It is time we do something about this. Flying conditions for healthy people, let alone for individuals with chronic respiratory conditions, are risky at best, and if they need to fly, they should have the ability to do so, safely and without undue hardship.

The AARC Board of Directors has decided that we need to take action, and thus an ad hoc committee has been convened that will address the oxygen issues that our patients

face with regard to domestic air travel. Dovetailing with this will be another multi-organizational approach to bring other issues to the attention of the airlines and to their customers. We are in the early stages of this process and will continue to keep members aware of our progress.

about the author...



Thomas J. Kallstrom, MBA, RRT, FAARC, is executive vice president of the ARCF and executive director of the AARC.

This is not the first time that the AARC has had concerns with the airline industry. Several decades ago, the AARC played a lead role in a collaborative effort that successfully prohibited smoking on all domestic airline flights. I don't know about you, but I can still remember what flying was like before this change. The metallic click of lighters could be heard almost the moment the tires of the aircraft left the runway. It is an incredulous task to consider that scenario today, but we were successful in achieving our goal.

As a health care professional, perhaps you have been in a situation where you were called upon to assist in the medical emergency while in flight. A few years ago I came to the aid of an elderly lady who was having some kind of a COPD exacerbation. Sadly, there were no bronchodilators in the airplane's first aid kit. Bronchodilators are a required component in

the kit, as is a metered-dose inhaler, but spacers are not required. We were able to borrow another passenger's inhaler, and she ultimately recovered. Airlines need to be better prepared to prevent and to manage in-air respiratory emergencies, and spacers should be part of the kit.

Nearly 4 billion passengers fly worldwide each year on commercial airlines. It is estimated that approximately 44,000 in-flight medical emergencies occur annually worldwide. Travel issues with individuals who have chronic pulmonary disease are going to happen no matter what we do to prevent them. But we must do something so that our patients do not unnecessarily find themselves faced with a medical emergency. Prevention is worth a pound of cure. ■



NBRC Insight

NBRC Credential Maintenance Program (CMP) FAQs

by Melanie Thomas

After almost 15 years, the NBRC Continuing Competency Program (CCP) has been updated to better represent the purpose of the program. The two original principles of enhancing and maintaining competence as time passes and requiring participants to provide evidence of meeting current competency expectations remain our guiding statements for the new Credential Maintenance Program (CMP). The CMP will be piloted to individuals earning a specialty credential in 2019 and will be available to all newly credentialed practitioners beginning in 2020. The following FAQs provide more detailed information about the program.

Q: Why is the Continuing Competency Program (CCP) changing?

A: As a credentialed practitioner, you already know that maintaining and enhancing the knowledge established on initial credentialing is a key component to professional development and career advancement, as well as patient care. Changes in accreditation standards encouraged the NBRC to evaluate how the Continuing Competency Program could become more valuable and meaningful to those who document their continued competencies and to the public served by these individuals. As a result, key elements for a modified program were recommended to the NBRC by a Recertification Commission (composed of stakeholder representatives, including two people required to participate in the CCP). The CCP has been renamed the Credential Maintenance Program to better represent the purpose of the program.

Q: Do I have to participate in the CMP?

A: If you earned your credential on or after July 1, 2002, then yes. Anyone currently holding a credential that expires will be required to meet the requirements of the current CCP through their current certification cycle and begin using the new CMP for their next certification

cycle. The new CMP still has three options to maintain your credentials: 1) earn another NBRC credential, 2) take quarterly assessments and/or document up to 30 continuing education (CE) credits, or 3) pass the same credentialing examination again. Your performance on the assessments will determine whether you have to also document CE with the NBRC.

Q: Why does the Credential Maintenance Program (CMP) have an assessment component?

A: The goal in using assessments is to strengthen the relationship between the competencies of credential

holders and the expectations linked to those credentials. Quarterly assessments are a component of the CE option to maintain credentials through the promotion of learning. Practitioners will not be required to take the assessments, but they are encouraged to do so to demonstrate their competency and knowledge.

Q: What will the assessments cover?

A: Each assessment is designed to focus on content that changes most rapidly and puts the public at highest risk. Practitioners who participate in the credential maintenance process were surveyed to identify changing content and public risk issues. New assessment items will be created each

year, so content will continue to cover hot topics as they emerge. Assessments designed this way will be more meaningful and valuable in comparison to the current system, which relies on an accumulation of general CE credits.

Q: What is the format of the questions on the assessment?

A: Each assessment question is in multiple-choice format with four potential answers from which to choose. Each question must be answered within five minutes of being displayed. Content of the assessments is focused on tasks that put the public at high risk and



Melanie Thomas is the NBRC's vice president of credentialing operations.

have a high pace of change. Assessments are taken in an open-book format, which means you can access resources during the five minutes before selecting a response. However, no other person should help you.

Q: How much will it cost?

A: The NBRC's fee will remain the same at \$125.00, collected annually in \$25 increments over the 5-year credential period.

Q: Do I still have to document CE with NBRC?

A: CE may be required depending on your assessment performance. Your assessment score and number of CE required will be updated each quarter on your credential maintenance dashboard within the Practitioner Portal. If your assessment score is high enough, no documentation of CE will be required to renew your credential(s). Other results will place you into one of two groups: those in the yellow zone will be required to document 15 CE credits, and those in the red zone will be required to document 30 CE credits.

Maintaining a credential is separate from maintaining a license. Even if high assessment performance exempts you from documenting CE for the NBRC, the state in which you live is likely to require CE documentation for your license.

Q: When will the assessment option be available?

A: Individuals who earn a specialty credential in the fourth quarter of 2018 or in the first nine months of 2019 will be eligible to participate in a pilot program of the new credential maintenance program. All new specialty credentials earned beginning Oct. 1, 2019, will fall under the new program. CRT and RRT credentials earned after Jan. 1, 2020, will participate in the new CMP.

Assessment Group	Year of Implementation
RT	2020
PFT	2019
NPS	2019
SDS	2019
ACCS	2019

Q: Where do I take my assessment?

A: The assessment is accessible online at nbrc.org and may be completed on a mobile device, tablet, or personal computer. Some questions contain images and graphics with details that may be easier to see while using a device with a larger screen. Make the decision about the device you use before starting an assessment because the timer cannot be paused once a question is opened. The timer will continue despite closing a browser or powering off the device.

Q: When do I take my assessment and how much time do I have to complete it?

A: An email notifying you that an assessment is available will be sent each quarter. The assessment should be completed within 60 days of availability.

Q: How many questions will be on my assessment?

A:

Assessment Group	Credentials	Number of Items Each...	
		Quarter	Year
RT	CRT, RRT	10	40
PFT	CPFT, RPFT	5	20
NPS	CRT-NPS, RRT-NPS	5	20
SDS	CRT-SDS, RRT-SDS	5	20
ACCS	RRT-ACCS	5	20

Q. What is the best way to prepare for the assessments?

A: Reviewing the specific detailed content outline (DCO) to identify your personal areas of strengths and weaknesses before you begin an assessment is suggested. An explanation for all possible responses and a reference citation is provided for each question for use in further researching the topic. This feedback provides an excellent opportunity for professional development, as well as improving performance on future assessments.

Q. What information does the CMP Detailed Content Outline (DCO) provide?

A. The DCO provides the number of questions you can expect for a one-year period and describes the content areas and complexity levels (recall, application, analysis) covered on each assessment. Tasks are identical to those found on the credentialing examination. However, because CMP assessments are intentionally limited to content that puts patients at increased risk and tasks that change rapidly, some tasks will not be included on the CMP assessments; and the DCO is shaded to indicate this.

Q: How do I track my assessment progress?

A: After each assessment, you will be directed to your credential maintenance dashboard within the Practitioner Portal to view your progress. Progress is displayed in red, yellow, and green zones reflecting success while responding to assessment questions. The color-coded progress indicator will include responses from CRT or RRT assessments plus specialty

assessments. For example, a therapist who has achieved RRT and RRT-NPS credentials will observe progress after one quarter that is based on 10 RRT questions plus 5 RRT-NPS questions, for a total of 15 questions.

You will find learning content in your progress dashboard explaining more about the best response to each question. Continuing education should be sought that builds one's knowledge about content covered by the assessments. Each assessment question has been linked to tasks considered to be high risk for patient outcomes.

Q. What does my progress dashboard show at the beginning of a five-year cycle?

A. Each person starts at the top of the green zone so, quarterly assessment performances will determine whether green-zone status is retained as the cycle continues.

Q. What if I have one credential that expires and one that does not expire?

A. When an individual has a credential that expires plus a lifetime credential, there will only be one opportunity to opt in at the beginning of the five-year

cycle for the credential that expires. Opting in signals an individual's intent to access assessments linked to both the lifetime credential and the credential that expires. However, an individual may opt out of participating for the lifetime credential at any time thereafter.

Q. Why is the CMP voluntary for practitioners credentialed before July 2002?

A. Credentialing standards were different at the time those credentials were earned. Imposing a new requirement for maintaining a credential after someone has started a professional career is different than creating a new requirement for someone who subsequently enters the profession. The NBRC believes that more of these practitioners may participate in the CMP if they know they cannot lose their credential by doing so. The patients served by these practitioners will be better protected as a result of participation and the learning that is expected to follow.

This document is available for your reference in the document library at nbrtc.org. If you have any other questions about the CMP, please email NBRC at nbrtc-info@nbrtc.org or call at 913-895-4900. ■

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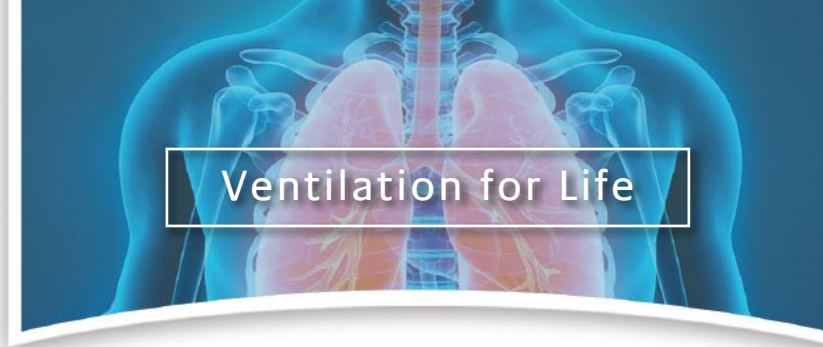
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ECLS in Adult Respiratory Failure and the Role of the Respiratory Therapist

by Madison Fratzke, BSRT, RRT, RRT-ACCS and Keith Lamb, RRT, RRT-ACCS, FAARC, FCCM

Profound respiratory failure necessitates the use of invasive mechanical ventilation. This in turn may have deleterious effects due to the high likelihood of iatrogenic injury to already sick lungs, progression to multi-system organ failure, and finally a precipitous increase in mortality. Extracorporeal life support (ECLS) may enable the multidisciplinary care team to mitigate some of these effects and improve outcomes. Respiratory therapists should play a leading role in all aspects of this high-level critical care.

Overview of respiratory failure

The term “respiratory failure” generally refers to conditions where gas exchange is impaired and usually presents as the inability to provide systemic oxygenation or effective elimination of carbon dioxide (CO₂). Hypoxemic (Type 1) respiratory failure is caused by impedance of gas exchange across the alveolus resulting in inadequate supply of freshly oxygenated blood that can be delivered to the distal organs and tissues. Hypercapnic (Type 2) ventilatory failure is caused by the inability to provide effective minute ventilation and can be the result of obstructive or restrictive lung disease, neuromuscular disease, sleep apnea, drug overdose or the presence of other toxins.¹ Each type has many potential etiologies, and the severity of impairment is highly variable within each disease state. This article will focus on acute hypoxemic respiratory failure, more specifically, ARDS.

ARDS is characterized by severe pulmonary shunting that results in hypoxemia that

is refractory to general administration of supportive supplemental oxygen. Further characteristics are a

decrease in pulmonary compliance, diffuse but non-homogenous involvement of the lungs, and significant inflammatory components.

Supportive therapy has traditionally been intubation and invasive mechanical ventilation via positive pressure. It has been suggested in the historic literature that positive-end expiratory pressure (PEEP) is helpful in restoring functional residual capacity by reversing or preventing atelectasis. PEEP also mitigates the effect of dysfunctional alveoli caused by inflammatory processes, fluid- and debris-filled alveoli, and alveolar collapse caused by the destruction of endogenous surfactant.²⁻⁴

Complications of positive-pressure ventilation

Although positive-pressure ventilation has been shown to improve oxygenation, it was demonstrated in 2000 by the ARDSnet trial⁵ that the control group, despite having better gas exchange, experienced worse outcomes in terms of higher mortality. This same group was managed using higher tidal volumes (12 mL/kg/predicted body weight). Since these data were published, the paradigm shift relating to mechanical ventilation management in ARDS patients has resulted in using smaller tidal volumes (4-8 mL/kg/predicted body weight) while keeping plateau pressures below 30 cm H₂O. This hypothesis-generating landmark trial has been responsible for the development of many other

about the authors...



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Keith Lamb is a respiratory therapist at the University of Virginia Medical Center and chairs the Section of Respiratory Care in the Society of Critical Care Medicine.



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Since 1947, the AARC has been leading the effort to advance the science and practices of the respiratory care profession while promoting the highest quality of care for our patients. Collaborating with the respiratory communities at-large, we have successfully advocated at the federal, state and local level for patients, their families, the community, the profession and the respiratory therapist.

The collaborative efforts between the respiratory care profession and manufacturers in pursuing unique

and innovative ways to improve both the quality and outcomes of our patients makes us natural partners in today's ever changing health care continuum.

As health care finances become more strained and patient care becomes increasingly more complex, the mutual challenges become greater for the profession and its industry partners. The inherent synergies of the corporate partner concept are to provide an effective and efficient way to address those needs utilizing our combined skills and resources.



investigations looking to corroborate these findings. Many investigations now focus on other types of airway-pressure monitoring in the belief that distending pressure, driving pressure, transpulmonary pressure, and mechanical power may be more closely related to outcomes as opposed to specific tidal volume. It is believed that higher levels of stress and strain applied to injured lungs are directly related to an acute inflammatory process that in turn affects other organ systems and may lead to precipitous increases in mortality. Respectively, these outcomes have been termed ventilator-induced lung injury and biotrauma. Moreover, it is thought that biotrauma can also be the result of atelectrauma caused by the repetitive opening and closing of alveoli and by oxygen toxicity caused by excessive levels of inspired oxygen.⁶⁻⁹

It has been proposed that the use of ECLS, more specifically extracorporeal membrane oxygenation (ECMO), can be used to attenuate ventilator-induced lung injury and biotrauma by reducing the emphasis on potentially injurious mechanical ventilation and depending more heavily on ECMO for appropriate gas exchange. This may allow the use of ultra-protective ventilator management, which may permit the lungs to “rest” while avoiding further injury.¹⁰⁻¹⁵

Overview of ECLS

Invented by cardiothoracic surgeon Robert Bartlett and put into practice in the 1970s, ECMO is a form of cardiopulmonary bypass that assists in treating various cardiopulmonary diseases. Types of ECMO or ECLS include venovenous ECMO, venoarterial ECMO, and extracorporeal carbon dioxide removal (ECCO₂R). In venovenous and venoarterial ECMO, the first part of the term, veno-, pertains to the vessel from which blood is being removed, and the second part of the term, venous or arterial, refers to the vessel to which the blood is being returned. The form that is primarily utilized to treat hypoxemia and hypercapnia is venovenous ECMO. Oxygenation and CO₂ removal occurs in the ECMO system situated between the two large-bore cannulas that are inserted into the respective vessels. ECCO₂R is another form of ECLS, and this method focuses on the removal of CO₂ and uses much lower flow rates, which are less likely to cause cellular trauma and hemolysis. This type of ECLS is currently being investigated in clinical trials.¹⁰⁻¹³

The first randomized, controlled trial for ECMO demonstrated a 90% mortality rate in adults, but advances in ECMO technology, deeper clinical knowledge, and improved care have significantly improved outcomes. The Conventional Ventilatory Support Versus ECMO for Severe Adult Respiratory Failure (CESAR) study,¹⁴ a multicenter, randomized, controlled trial published in 2009, demonstrated a 63% survival rate in the ECMO group. The more recent ECMO for Severe Acute Respiratory Distress Syndrome (EOLIA)¹⁵ trial reported in 2018 a mortality rate

of 35% in the ECMO group, which appears to be consistent with the Extracorporeal Life Support Organization database, which currently reports a mortality rate of 34% for adult pulmonary patients.

The evidence supporting ECMO versus traditional treatment adjuncts is debatable and conflicting. Nevertheless, ECMO is emerging more as a frontline therapy as opposed to its historical use as a last-option rescue therapy. Regardless of the stage of ARDS, optimizing these outcomes requires the use of evidence-based, lung-protective strategies while patients are on mechanical ventilation during ECMO.⁶ Being directly involved in patient care at the bedside, the respiratory therapist is an integral part of the management of these patients.

Role of the respiratory therapist

ARDS is responsible for 74,500 deaths each year in the United States alone,⁴ so it is imperative for respiratory therapists to be diligent participants in the multidisciplinary care plan for these patients. As the clinician responsible for managing the mechanical ventilator, the respiratory therapist must be an advocate for lung-protective strategies and have a deep understanding of how to effectively decrease ventilatory support. Furthermore, when a tracheostomy or endotracheal extubation may be considered in certain patients to help discontinue mechanical ventilation,¹² the respiratory therapist should remain proactive in the management of the ECMO patient.

Management of the ECMO system has historically been performed by a perfusionist. Recently, these duties have been performed by ECMO specialists, specially trained clinicians such as critical care nurses and respiratory therapists. Responsibilities of managing ECLS are both technical and clinical and include management of all aspects of the patient undergoing ECMO. This includes many responsibilities further detailed below, including making adjustments to oxygenation and ventilation for maintenance of gas exchange. Choosing qualified clinicians for this role supports the multi-disciplinary critical-care approach to ECMO management; due to their understanding of cardiopulmonary science and critical care, the American Association for Respiratory Care and the Extracorporeal Life Support Organization enthusiastically support this role for Registered Respiratory Therapists.

RTs have more than one option to receive training as ECMO specialists. Many ECMO centers have internal training processes that are provided by tenured and experienced staff. These training regimens typically include many classroom hours. Classes cover all aspects of cardiopulmonary physiology, relevant anatomy of the heart, lungs, and vasculature, and many other topics regarding coagulation and hemodynamics. These courses are followed by hands-on training with

specialized equipment, such as ECMO pumps, monitoring equipment, transfusion equipment, and IV pumps. This equipment training may also include mandatory training provided by device manufacturers. Once all classroom and hands-on training is completed, there is usually a comprehensive bedside training process that includes mentorship by other members of the ICU team, including other RT ECMO specialists. Other options include group training at major centers around the country that provide comprehensive training and certification. Finally, there are commercial groups that may provide on-site training and preceptorship, especially in scenarios where an ECMO team is being developed as a new service.

No matter how an RT becomes qualified to provide ECMO care, they are intimately involved in the bedside care of the patient. Many programs require frequent assessment of the patient, circuit, and pump. Sometimes this may include hourly evaluations. These evaluations include checking the circuit for clots, cannulation sites for bleeding, and oxygenator performance. A high-level understanding of blood gas analysis and how gas exchange occurs within the oxygenator and in parallel with the patient's native respiratory system is imperative. RTs inherently possess these attributes.

Additionally, RTs are involved in the emergent care of the ECMO patient. This includes administration of advanced cardiac life support medications and blood products delivered through the ECMO circuit.^{16,17}

Conclusion

While evidence supports the use of protective ventilation in respiratory failure, ARDS can become severe enough that adequate gas exchange cannot be supported without the use of injurious ventilator settings and further injury cannot be avoided. This is when ECMO may be indicated. When ECMO is initiated, respiratory therapists are essential to the management of these patients and are uniquely prepared to practice at an advanced level as ECMO specialists. ■

References

- Roussos C, Koutsoukou A. Respiratory failure. *Eur Respir J Suppl* 2003;22(47):3s-14s.
- Slutsky AS. History of mechanical ventilation: from Vesalius to ventilator-induced lung injury. *Am J Respir Crit Care Med* 2015;191(10):1106-1115.
- Koh Y. Update in acute respiratory distress syndrome. *J Intensive Care* 2014;2(1):2.
- Howell MD, Davis AM. Management of ARDS in adults. *JAMA* 2018;319(7):711-712.
- Acute Respiratory Distress Syndrome Network. Ventilation with lower tidal volumes as compared with traditional tidal volumes for acute lung injury and the acute respiratory distress syndrome. *New Engl J Med* 2000;342(18):1301-1308.
- Fielding-Singh V, Matthay MA, Calfee, CS. Beyond low tidal volume ventilation: treatment adjuncts for severe respiratory failure in acute respiratory distress syndrome. *Crit Care Med* 2018;46(11):1820-1831.
- Lamb KD. Year in review 2014: mechanical ventilation. *Respir Care* 2015;60(4):606-608.
- Kallet RH, Matthay MA. Hyperoxic acute lung injury. *Respir Care* 2013;58(1):123-141.
- Amato MBP, Meade MO, Slutsky AS, et al. Driving pressure and survival in the acute respiratory distress syndrome. *New Engl J Med* 2015;372(8):747-755.
- Bartlett RH. Extracorporeal membrane oxygenation for acute respiratory distress syndrome: EOLIA and beyond. *Crit Care Med* 2019;47(1):114-117.
- Combes A, Bacchetta M, Brodie D, Müller T, Pellegrino V. Extracorporeal membrane oxygenation for respiratory failure in adults. *Curr Opin Crit Care* 2012;18(1):99-104.
- Turner DA, Cheifetz IM. Extracorporeal membrane oxygenation for adult respiratory failure. *Respir Care* 2013;58(6):1038-1052.
- Pisani L, Polastri M, Pacilli AMG, Nava S. Extracorporeal lung support for hypercapnic ventilatory failure. *Respir Care* 2018;63(9):1174-1179.
- Peek GJ, Mugford M, Tiruvoipati R, et al. Efficacy and economic assessment of conventional ventilatory support versus extracorporeal membrane oxygenation for severe adult respiratory failure (CESAR): a multicentre randomised controlled trial. *Lancet*. 2009;374(9698):1351-1363.
- Combes A, Hajage D, Capellier G, et al. Extracorporeal membrane oxygenation for severe acute respiratory distress syndrome. *New Engl J Med* 2018;378(21):1965-1975.
- Extracorporeal Life Support Organization. (2010) ELSO Guidelines for Training and Continuing Education of ECMO Specialists. Version 1.5. Available at: <https://www.else.org/Resources/Guidelines.aspx>. Accessed January 17, 2019.
- American Association for Respiratory Care: Respiratory Therapists as Extracorporeal Membrane Oxygenation (ECMO) Specialists. Revised July 2018. Available at: <http://www.aarc.org/wp-content/uploads/2017/03/statement-of-ecmo.pdf>. Accessed January 17, 2019.



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The View From Here

What Now?

by D. Robert Handy, MBA, BSRT, RRT

Anxiety. Fear. Excitement. A whole flood of emotion rushes over you as the cute little old lady at the testing center patiently waits for your NBRC test results from the world's slowest printer. This is it. You've spent months — no, years! — waiting for this moment. You've spent countless hours studying, listening to the test prep tracks on your iPod, worrying, and then losing sleep as you study even more. And now, you can barely stand still as she takes your results, folds them neatly in half and strolls slowly toward you. You're nervous, piqued, and terrified all at the same time. She smiles and says, "Here you go, dear," as she hands you the results. You stammer what you can only hope was a "thank you" as you try with trembling hands to unfold the sheet of paper that holds your fate. You can't quite see clearly as your eyes frantically search for a single word . . . "Passed."

Holy cow! Yes! You've made it, you passed! Somehow, without knowing how, you're sitting in your car, still quivering as you can finally focus and read the entire paper. You're elated, jubilant, and at peace as you enjoy a silent triumphant moment in this arduous journey to being a Registered Respiratory Therapist.

Awesome. Congratulations. What now?

Perhaps you were told by a clinical site that there might be a job waiting for you after you graduated and passed your boards. Maybe you plan on applying for anything and everything that you can. Maybe you have no idea.

You could go into acute care, working in a hospital. But do you choose a large facility or a smaller community one? At the large facility, you'll get a lot of expe-

rience and see lots of things. But likely, at some point, you'll get pigeonholed into a single role. Maybe on Med/Surg, maybe in an ICU. You'll become an expert in your area, but you may not get to use all of the skills you've learned. In a smaller acute-care hospital, you'll get to do a little bit of everything, no two shifts will be the same, and you will get good experience in a lot of different areas. However, you might end up being a jack of all trades and master of none.

Working in long-term care, either at a long-term acute care hospital or skilled nursing facility, might be for you. Shifts will likely be routine, with some variation, but you will know what to expect almost every day. You'll have the opportunity to really get to know your patients and to care for them.

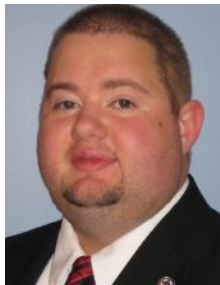
You could try your hand at being a respiratory therapist working in home health. This is a growing area for respiratory care, with its own unique challenges. There is some amount of autonomy as you drive around to see a variety of patients. You'll help them better understand their disease process, their treatment, and medications.

How about a job in the budding telehealth movement? You would provide education and advice for patients

who are a great distance from a health care provider who truly understands their disease and how to help them.

Being a traveling respiratory therapist might be an option, but probably not for a year or two. You've heard that they want someone with a few years' experience, who can adapt to a variety of systems and function independently. You'll likely have enough experience for that kind of role in a few years. You would get to travel to lots

about the author...



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(Continued on page 31)

Keeping Up with Federal Policies

by Anne Marie Hummel

The year 2018 saw new opportunities for respiratory therapists as well as concerning news for patients. Let's get to the good news first!

Skilled nursing facilities get a payment makeover

I wrote about the new skilled nursing facility (SNF) Patient-Driven Payment Model (PDPM) in the December issue of *AARC Times*, so please check it out for details if you haven't already done so.

To recap, effective Oct. 1, 2019, PDPM replaces the current Resource Utilization Group (RUG)-IV methodology. Under the RUG system, respiratory therapy services, which are non-therapy ancillary (NTA) services in the SNF setting, were included in the nursing component, and payment was based on nursing staff times that did not adequately account for the increased utilization of the RT's time; this was especially true when it came to the complex needs of ventilator patients and other respiratory patients who need extensive services. As part of the new PDPM model, the Centers for Medicare and Medicaid Services (CMS) has created a separate NTA component that will pay the facility more accurately for respiratory therapy. This is good news and hopefully will encourage more SNFs to hire RTs as they seek to provide the best care for their patients.

Home visits – new opportunities for RTs

Accountable care organizations (ACOs) include groups of doctors, hospitals, and other health care providers who serve fee-for-service Medicare beneficiaries, offering improvements in quality care, health outcomes, and patient experience. Next-Generation (NextGen) ACOs can offer benefit enhancements not enjoyed by other innovative payment models if they provide an implementation plan to the CMS. Two such benefits are

post-discharge and care-management home visits. This is good news because it offers new opportunities for RTs to care for patients in their homes.

No more than one post-discharge visit can be made in the first 10 days after discharge from a hospital inpatient stay, and no more than two visits in the first 30 days. The goal is to prevent hospital readmissions. The care-management home visit is a new tool to provide

home visits proactively and in advance of a potential hospitalization. This service became effective Jan. 1, 2019, and it is contingent upon the initiation of a treatment plan. Beneficiaries are eligible to receive up to two visits within 90 days of seeing a NextGen participant or preferred provider. The visits are not intended to be performed on an ongoing basis and are meant to supplement rather than substitute visits to a primary care provider or specialist.

To qualify for either post-discharge or care-management home visits, a beneficiary cannot be eligible for Medicare's separate home health benefit. This is an ideal opportunity for RTs because services can be furnished under "general supervision." That means the service is furnished under the physician's overall direction and control,

but the physician's presence is not required during the performance of the service. RTs can contract with these organizations on a part-time basis. To date, there are 51 NextGen ACOs. Check out the information on the CMS website to locate one in your area at <https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model>.

New remote patient monitoring services include clinical staff time

In the final physician payment update for 2019, the CMS announced separate payment for three new remote patient-monitoring (RPM) codes to collect

about the author...



Anne Marie Hummel is an executive associate director of the AARC and specializes in advocacy and government affairs.

physiologic parameters such as weight, blood pressure, pulse oximetry, and respiratory flow rate. The new RPM codes include setup and education on the use of equipment (CPT 99453), a 30-day supply of daily recordings or programmed alert transmissions (CPT 99454), and treatment-management services involving interactive communication with the patient or caregiver of 20 minutes or more of clinical staff/physician/other qualified health care professional time in a calendar month (CPT 99457).

This is good news for respiratory therapists because it offers an opportunity for you to market yourselves to physician offices, even on a part-time basis, to showcase your expertise in monitoring patients with chronic respiratory disease. Because of the number of mobile apps on the market today, the CMS will issue further guidance on the products to be covered as part of this new separate payment category.

Now we'll report the not so good news!!

Patient access to liquid oxygen compromised

In the 2019 update to competitive bidding, the CMS admitted that the program is flawed and that the current payment methodology is a disincentive for suppliers to furnish liquid oxygen to patients who need these vital systems. The AARC, as part of a small oxygen coalition composed of the American Lung Association, American Thoracic Society, National Association for Medical Direction of Respiratory Care (NAMDR), COPD Foundation, Pulmonary Fibrosis Foundation, and Alpha 1 Foundation, does not support the CMS plan to fix the problem. In the final rule, the CMS created new oxygen classes they believe will address the current low reimbursement rates for liquid oxygen, including a new category to recognize the need for high-flow oxygen rates of greater than 4 L/min. Although the payment rates are better, neither the physician and patient community nor the home medical equipment industry believe the rates are an incentive to encourage suppliers to get back into the liquid oxygen market.

Unlike other types of durable medical equipment, such as walkers, hospital beds, wheelchairs, etc., liquid oxygen is associated with significant costs due to the need for special Department of Transportation trucks and frequent deliveries. The oxygen coalition recommended that the CMS use its authority to carve out liquid oxygen because it does not represent significant savings under the competitive bidding program. According to Medicare claims data, only 8,141 patients received liquid portable oxygen in 2015 (the latest available data) compared to more than 45,000 patients in 2009 when competitive bidding began.

As part of the oxygen coalition, AARC is working diligently to protect patients during the two-year gap period and to ensure they are not severely impacted by lack of access to liquid oxygen. We are currently developing a comprehensive strategy that includes patient engagement and grassroots efforts.

Ventilators under competitive bidding are a safety risk

Toward the end of 2018, the CMS announced plans to include invasive (E0454) and noninvasive (E0466) ventilators as new product categories in the next round of competitive bidding in addition to a newly approved multi-function ventilator (E0467). This is a dangerous decision on many levels, especially for patients whose lives depend on these life-sustaining devices and for respiratory therapists whose expertise is needed to ensure proper care and safety. Had the CMS acted on a national coverage determination request from AARC, CHEST, and NAMDR in 2016 to update their two-decade old policies on home mechanical ventilation, which do not reflect advances in technologies, we most likely would not be in this situation today.

We believe the current decision to add ventilators to competitive bidding is the result of recent reports from the Office of the Inspector General (OIG) and the Medicare Advisory Payment Commission (MedPAC). The OIG reported 85 times more claims for noninvasive ventilators in 2015 than in 2009 due to the CMS's lack of recognition of changes in technologies. In a June 2018 Report to Congress, MedPAC reported excessive payments for invasive/noninvasive ventilators when compared to private payers. Adding a multi-function ventilator to the mix, which had not been approved at the time of these reports, raises important variables such that competitive bidding is likely to result in even more problematic unintended consequences.

The AARC submitted comments to the CMS voicing strong opposition to its plans, in addition to signing joint comments from a group of physician- and patient-advocacy organizations. However, comments to the CMS alone will not be enough. It will take key leaders of Congress to bear down on the CMS to withdraw this decision. Because there is no competitive bidding for 18–24 months while the CMS moves to a new “lead item pricing” bid structure, it gives us time to mount a strong defense. This will be an important topic on the AARC's government affairs agenda, in addition to liquid oxygen access issues and our telehealth legislation, when our Political Action Contact Team representatives take to TheCapitol Hill on April 9, 2019, for our Lobby Day. ■

Oh, the Places We'll Go!

Respiratory therapists chart new paths by Debbie Bunch



The most important role a respiratory therapist can ever play is caring for a patient at the bedside who is struggling to breathe. But that doesn't mean RTs can't branch out into new and intriguing areas of health care. The therapists we talked to for this article are great examples. From telehealth to the athletic field, they are proving there is no limit to where an education and background in respiratory care can take you.

► Welcome to virtual critical care

At Atrium Health, RTs have been tapped to play an integral role on the multi-hospital health system's new Virtual Critical Care (VCC) Team. Since February 2018, AARC members Jessica Sinclair, BSRT, RRT, and Ashley Owens, BSRT, RRT, have been working alongside physicians and nurses in the system's VCC Unit in Charlotte, NC, to ensure effective implementation of the ABCDEF bundle across primary enterprise facilities. A third AARC member, Melissa Kroll, RRT, joined them in May 2018.

The ABCDEF bundle, which stands for "Assess, Prevent and Manage Pain; Both Spontaneous Awakening Trials and Spontaneous Breathing Trials; Choice of Analgesia and Sedation; Delirium: Assess, Prevent and Manage; Early Mobility and Exercise; and Family Engagement and

Empowerment," has been validated in numerous studies for its ability to help avoid ICU delirium, cognitive dysfunction, and physical weakness in patients requiring prolonged stays in the ICU.

Known as virtual respiratory therapists or VRTs, the therapists provide telehealth services seven days a week, 12 hours a day, carrying out roles on the team that were designed by respiratory leadership working in concert with VCC medical directors and operational leaders. They were trained on the workflow, provider and bedside communication, and computer programs used in the VCC by nurses already on the team. Site visits to the outlying hospitals participating in the program were completed as well so they could learn about the individual culture in each unit and familiarize themselves with the practices and protocols being used there.

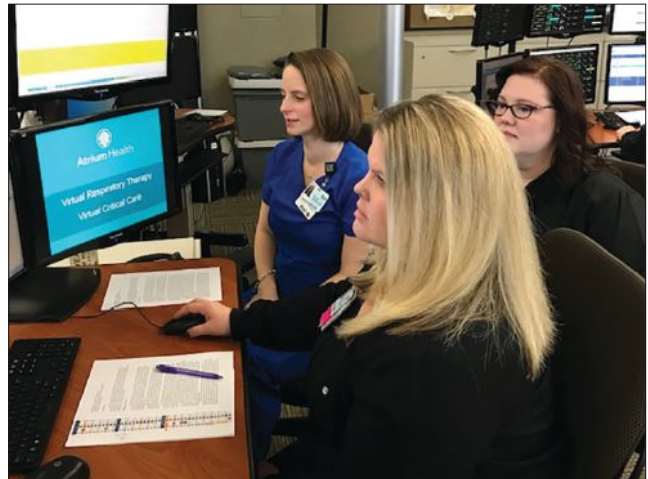
Jessica Sinclair explains how it works on a daily basis. "ICU patients are identified by the VCC RNs based on criteria outlined by VRTs and MDs," she says. "These patients are then placed on an electronic communication board for the VRT to review and suggest interventions when deemed appropriate." Through their reviews of the electronic health records, she and her colleagues are able to evaluate the needs of these patients and suggest changes to their care

plans. The program began with seven facilities, but by April 2018, this number was up to 12. Another facility will be added this month. Due to the expansion, the VRTs now hold licenses in both North and South Carolina.

While the VRTs started out providing a range of services, optimizing ventilator management to help patients have successful spontaneous breathing trials (SBTs) and working through any barriers that could keep that from happening has developed into the key goal. The VRTs evaluate all ventilated patients for SBT criteria to encourage active weaning, participate in SBT re-trials, provide education on documentation, and identify process improvement and standardization opportunities. “At one facility alone, we monitored 305 patients between September and November for these items,” says Owens. They have gotten more involved with standardization opportunities for ideal body weight, too, by monitoring adherence with best practices for measuring the patient’s height to ensure accurate ideal body weight calculation and then confirming that initial tidal volumes are set at 6–8 mL/kg.

Mentoring new RTs in the remote locations is also on their to-do list, and the VCC serves as a clinical rotation site for a local respiratory therapy program as well. “This is very important to our team,” emphasizes Sinclair. “It is a great way to augment traditional educational opportunities offered within specific facilities throughout Atrium Health.”

The past year has taught all the RTs involved with the team several lessons, including the importance of



Jessica Sinclair, left, Ashley Owens, center, and Melissa Kroll, right, are delivering telehealth services in the ICU setting.

collaboration between the VRTs, VRT leadership, RT service line leadership, the VCC leadership, and the facilities served by the program. They’ve also learned that it is okay to narrow their focus, and they’ve recognized the value in sharing their experiences with others through presentations at state and national conferences, including the AARC Congress. They look forward to identifying additional areas where the VRTs can have an impact and can build relationships at the bedside, with the overall goal of growing along with the rest of the VCC team.

► Legal matters

We’ve all seen courtroom dramas where the attorney faces the jury and says, “And now I’d like to call an expert witness.” But what does that really mean? According to USLegal.com, an expert witness is one who “has knowledge beyond that of the ordinary lay person enabling him/her to give testimony regarding an issue that requires expertise to understand.”

Back in 2016, Steve Sittig, RRT, RRT-NPS, FAARC, received a phone call from an attorney with a case involving respiratory care transport, asking if he could serve as an expert witness on the case. “When I asked how she came up with my name, she said she ‘googled’ ‘pediatric transport respiratory therapist’ and she says my name appeared everywhere,” says the AARC member and current chair of the Neonatal-Pediatric Section who has also served several terms as chair of the Surface & Air Transport Section.

He was intrigued by the prospect and decided to give it a try. Since then, Sittig has served as an expert witness on two additional cases and was working on a third when we



Steve Sittig reads court documents in a case.

spoke with him in late 2018. It's a labor-intensive effort, but he says he is enjoying it. "The work entails review of medical records, depositions." He notes the depositions can be quite extensive and involve multiple persons, and the medical records and policies and procedures are often numerous as well.

Sittig hasn't been called to give testimony in open court as yet, but he recently completed a video deposition on a case involving a respiratory therapist that lasted about three and a half hours. "In preparation I reviewed again pertinent depositions and medical records . . . it was important to have facts ready for any questions from the plaintiff's attorney," he says.

Sittig has gotten positive feedback from the attorneys regarding cases in which he's been involved. "They appreciate my experience with transport and care of neonatal/pediatric patients," he says. "They feel I was a big help." Indeed, the fact that he continues to be asked to serve

in this capacity demonstrates the level of expertise he has been able to provide.

While the role is challenging — he does, after all, add this work into his already full schedule as a flight RT at Sanford Medical Center in Sioux Falls, SD — Sittig says it is worth the effort. "The rewarding component is using my years of experience representing an RT and/or transport team when they may be involved in a legal case. It is challenging to determine if care provided was 'standard of care,'" he says.

Knowing he may be helping his colleagues in the transport arena adds another layer of satisfaction. Says Sittig, "This new role makes me feel good to help in the defense of a transport team or an RT." He believes other therapists could serve in this capacity as well, although he emphasizes they should acquire permission from their employer first, as some will not allow their employees to serve as an expert witness.



Shelley Mishoe has found a new passion for public health.

► Stepping into public health

Shelley Mishoe, PhD, RRT, FAARC, FASHAHP, has been an RT since graduating from SUNY Upstate Medical University with her AS degree in 1975, and throughout her long career — which has taken her from the bedside to upper level positions in the educational setting — she has been a tireless volunteer for the AARC and its affiliated organizations. This past year in Las Vegas she received the Association's Life Member Award for her vast contributions to the profession.

Her new role as a professor of public health came about in 2017 when she was dean of the School of Community and Environmental Health (SCEH) at Old Dominion University in Norfolk, VA. During her tenure there, she had established a

Center for Global Health, building on her experience helping create the first respiratory therapy programs in Costa Rica and Taiwan, her medical missions to China, and educational exchanges in South Africa and other countries. There she also furthered initiatives to advance interprofessional education and made progress on the development of a bachelor's degree in respiratory care.

Then her younger brother died unexpectedly, and her husband retired. Her family needed more of her, and she decided it was time to step down from her demanding role as dean. But she wasn't quite ready to hang it all up just yet. "I could not imagine going from full speed ahead to retirement," says Mishoe. "I convinced my husband to support my goal of working again as a professor, but this time I would have a ten-month contract and the summers off for the most part. This was a great compromise!"

Today she is doing just that — teaching in the SCEH as a tenured professor, concentrating on online courses for the school's global health certificate program, master's program in public health program, and a proposed bachelor's program in public health. "I utilize my leadership and administrative experiences to teach the introduction to global health, health management, global environmental health, and leadership in public health courses," says the AARC member. "These courses require service-learning experiences, online presentations, and community engagement."

She says it's been somewhat of a challenge getting up to speed on all the technology necessary for online learning, but she's just looking at that as another journey in lifelong learning. Her students benefit significantly from her background in respiratory care, since many are actively involved in the health promotion/disease prevention of chronic cardiopulmonary conditions such as asthma, sleep

disordered breathing, and COPD, in addition to diabetes, heart attack, and stroke.

Mishoe continues to work in interprofessional education as well, conducting research on successful strategies, and she still mentors faculty, works on program-proposal development and school committees, and serves on the boards for several national organizations, including CoARC. She is also heavily involved in advocating for an accredited school of public health in Virginia, something currently lacking in her state. And as if all that wasn't

enough, she's also updating and editing chapters as a co-editor for the fourth edition of *Respiratory Care Principles and Practice*, a textbook published by Jones and Bartlett Learning.

She says transitioning to public health at this point in her career has been right for her. "My own perspectives of prevention have expanded beyond individuals to populations and the environment," she explains. "Prevention of disease and quality of life depend on clean air, water, food, and housing, as well as access to basic health care, which many people lack in the United States and around the world."

► Testing athletes

When Jason Blonshine, BS, RRT, RPFT, was given the opportunity to go to work for a firm specializing in pulmonary function testing, he jumped at the chance to learn something new. Over the past couple of years, the AARC member has traveled to countries ranging from the United Kingdom to Serbia to provide training and education in pulmonary function quality-control procedures and testing methodology.

Moving from the hospital setting to education and research, however, meant he wasn't as physically active as he used to be. "Since I wasn't walking the floors anymore, I was spending a lot more time in a chair or on a plane, consequently gaining a bit of weight in the process," says Blonshine. He joined a gym, lost about 60 pounds, and in the process developed a new interest in the role that exercise testing could play in helping people get the most out of their workouts. The upshot: a new business line offering resting-energy expenditure (REE) and VO_2 max testing to people who are serious about increasing their athletic performance.

"The idea that we can improve how efficiently our body utilizes oxygen to perform at higher levels, regardless of your preferred method of exercise or sport, is truly exciting," he says. "I started reading, listening to podcasts, talking to athletes, and going to seminars, and felt there was an important place for this kind of testing." He was especially interested in offering quality testing, something he says was missing. Testing services that did exist were often using old equipment, old protocols, and had no idea what "quality control" even meant.

"I don't think people are trying to test poorly, but I felt that my background as an RT, specializing in quality [pulmonary function] testing, gave me a unique perspective on how testing should happen," says Blonshine. "I believe very strongly that if you are going to do this test, then everyone should be able to trust 100% their results are accurate and precise, so my goal was to build a program that could deliver the same results to a consumer that one should expect to see from a high-level research site."



Jason Blonshine fits a mask on an athlete getting ready to undergo exercise testing.

The REE test shows individuals how many calories they burn at rest and is fairly simple. The individual wears a mask while sitting in a zero-gravity chair for about 20 minutes. The goal is to help people understand how to tailor their daily nutrition. The VO_2 max test requires the participant to wear a mask and analyzer as well, but it is completed while exercising on either a bike or treadmill.

"One of the main things I point out is that VO_2 max is important to know but that their anaerobic threshold (AT), or the point where lactate accumulation begins to occur, holds a lot of information on how they should train," he says. "Our VO_2 max values have some potential for improvement but even less potential for anyone who is well conditioned; the AT, on the other hand, can be manipulated depending on your goals." Basically, by training in certain heart-rate zones, which are derived during the test, the individual can move this threshold up or down, thus delaying the accumulation of lactate and enabling the body to more efficiently use oxygen as its primary energy source.

Blonshine says he's performed these exercise tests in about 100 people so far and is getting ready to upgrade to a more portable system so he can take the testing to people in their own gyms. He also sees a potential to grow the business into a testing service for fire and police departments to help them optimize physical training for

their personnel, corporations looking to enhance their wellness programs, and high school athletic programs. “Too often we see student athletes at the high school level lost to a sudden cardiac event,” he says. “This exercise testing can be used to help screen and hopefully one day prevent some of this from ever occurring.”

Branching out into exercise testing for people seeking to improve their exercise performance has been a rewarding experience for Blonshine, and he especially loves hearing

success stories from the athletes who have taken advantage of it. “I had one runner this year cut a full minute off their pace and they commented that since using the data and zones to train, in they also felt the reduction in intensity helped prevent injury as well,” he says. “I hope to be able to grow and bring in more RTs to this unique opportunity; as a profession, we must continue to grow in creative ways and find new spaces where we can make a positive impact.”



Cara Kraft is helping direct research efforts for the Allergy & Asthma Network.

► All in for research

As a 35-year veteran of the respiratory care profession, member Cara Kraft, RRT, AE-C, has seen it all. She started her career at a big county hospital in Fort Worth, TX, working in the NICU, ICU, emergency department, and transport, and from there segued into pulmonary rehabilitation and asthma education at Baylor Scott & White in Dallas. Then she took a job with a medical device company before moving on to serve on a medical affairs team.

But her new job as director of research for the Allergy & Asthma Network (AAN) is a dream come true. “It all began at Baylor,” she says, noting it was her mentors there, Gretchen Lawrence, RRT, FAARC, and Mark Millard, MD, who taught

her the importance of clinical investigation. She honed her skills at the medical device company, which was involved in seeking FDA approval for a new device to measure fractional exhaled nitric oxide, and when she learned that the director of research position was open at the AAN, she knew she had to go for it.

“I had been a volunteer at the Allergy & Asthma Network and found out about it,” she says. “I can’t even begin to describe how excited I was when the CEO and president of AAN, Tonya Winders, called me to tell me I got the job.” Her RRT and AE-C credentials helped her land the position, and her previous work on research projects at Baylor and the medical device company certainly made a difference, too.

The position calls for her to oversee the implementation of the AAN’s research agenda, and she says the most important role she plays is listening to patients, understanding their needs, and hearing their voices. “I have the honor of working closely with patients of all ages and am committed to the Network’s mission of ending the needless death and suffering due to asthma, allergies, and related conditions,” says Kraft.

She believes research into new treatments and modalities has played a major role in the continued improvement seen over the years of care for people with respiratory conditions, but the end is nowhere in sight. “We still have such a long way to go on this journey,” she says. “We need to work toward ending health disparities and improving access to medication and health care and continue funding for lung diseases.” With her background in respiratory therapy as her guide, she’s dedicated to helping provide direction for future studies. “I am taking every little thing that I have learned from when I started in respiratory care until now and hopefully putting it to good use,” says Kraft.

► New opportunities for all

Diversifying into new and exciting roles has definitely reenergized these members. In the process, they’re

spreading the word about the value that Registered Respiratory Therapists can add to the health care system as a whole. ■

10 Questions for New AARC President Karen Schell



The next two years promise strong forward movement for the Association

1. During your inaugural address at the AARC Congress in Las Vegas, you introduced six “Horizon Goals” you’ll be pursuing during your time in office. How did the idea to develop these goals come about?

The Horizon Goals were ratified by the Board of Directors (BOD) at their Summer 2018 meeting, after extensive work. An outside consultant helped us refocus and determine priorities to meet the challenges ahead for our profession in terms of our members, patients,

Karen S. Schell, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS, succeeded Brian Walsh, PhD, RRT, RRT-NPS, RRT-ACCS, AE-C, RPFT, FAARC, as president of the AARC at AARC Congress 2018 in Las Vegas this past December, and she brings with her an enthusiasm for building on his success. In this interview, Dr. Schell outlines the goals and objectives she will be working toward during her tenure.

and collaborating partners. The BOD wanted to strategically plan the future work ahead to get the most from the resources we have available.

2. We understand these goals will be more “ever-green” than presidential goals in the past. Why is that important for the Association and the profession?

The challenges ahead for the profession require that the BOD be more forward-thinking and develop goals that focus on keeping the organization moving toward the future, and that benefit the stakeholders over time — beyond my presidency. It makes sense not to change goals between presidents and refocus the Board every two years; thus we developed Horizon Goals. The strategic plan over time addresses these Horizon Goals, along with strategies and tactics that keep the BOD and AARC committees working together to achieve measurable outcomes.

3. The first goal addresses the need to advocate for patients with respiratory therapists who are recognized and supported in all health care settings. What was the thinking behind that goal?

Respiratory therapists need to be more visible, active, and involved in demonstrating our value among our health care peers. Our patients and members need the support of all health care providers in all health care settings to continue to grow the profession through education, legislation, and engagement. Working with other groups, both locally and nationally, demonstrates our ability and willingness to support the needs of our patients, members, and organizations that are on the same path for optimal patient care. Advocating with other groups demonstrates our role and value in achieving the best interests of our patients and recognizes the need for everyone to work together

to bring the best collaborative care to patients across the continuum of care.

4. The list also includes a goal to communicate the RT message to all stakeholders providing research-based outcomes and to market the value of respiratory therapists. Who are the stakeholders you’ll be targeting, and how do they have the ability to impact the profession?

In a sense, *everybody!* Some stakeholders have been identified — such as patients, patient advocacy groups, members, patient families, specific organizations, etc. — and some have not. That is why we need everyone involved. There are many different opportunities within various communities, and it may be beneficial for us to reach out to them to seek ways to collaborate as we pursue our goals. We need to think outside the box and engage potential stakeholders with additional resources to help us move forward to meet the challenges ahead with health care and our patients. We need everyone on board to be effective and use our combined resources in unison down the road to meet the needs of our patients. *Watch Out World!* Here come the respiratory therapists.

5. Growing our educational opportunities also made the list. How will you work toward that goal during your time in office?

Education is the key to success. We have many talented individuals among our membership to grow the profession, but we also need to fulfill future demands. We know we need more therapists to meet the needs for hospitals and departments. We know that respiratory therapists will need to grow skills as we move beyond the traditional inpatient practice settings. We know that by advancing therapist education levels and growing our therapists to higher standards we can provide our

patients the care they deserve and compete with other health care professions, and this is needed. We know we need more educators with advanced degrees to provide advanced-level education.

How we as an organization are going to accomplish these needs is of concern. We are working on plans to ensure the profession keeps up with the educational levels we need to attain to remain a vital part of the health care team. This includes expanding bachelor's and graduate degree education. We need to advance our education to be leaders in our own evolution.

6. You will be working to ensure the AARC is recognized as the number one provider of respiratory therapy educational opportunities to all inter-professionals as well. Which disciplines will we be targeting and why?

All of them, of course! RTs need to be more visible among our health care peers and the public. They need to know and understand our level of education and skills so that we can work together more efficiently and productively. We do not do a very good job of tooting our own horns. Many professions are quite surprised at our skills when we get a chance to interact inter-professionally. It is time we stood proud and let everyone know who we are and what we are capable of doing.

I challenge all RTs to be a part of this movement and show your worth in your own backyard. Become engaged, involved, and part of the team. Show your talents and expertise every day to your health care peers and the public. Be a strong advocate for your profession. Have a voice and shout it to the mountain tops: *"I am an RT and I have the skills, the education, and the passion to share and can make a difference for my patients and yours as well."*

7. Increasing the AARC membership also figures into your goals, as does encouraging everyone to get more involved in promoting the profession for best patient outcomes. How will you attempt to achieve that combined goal?

That is easy to answer — by reaching out to individuals who are already members and asking them to help by inviting those who are not members to join in and be part of a growing profession. Also, we will engage students to grow along with the profession as it evolves. I believe that there are many individuals who want to be engaged, but just do not know how to start. Inviting those who are currently involved to simply ask someone

to be part of the change and to mentor them along will help us grow membership.

If everyone does this in their own community, I believe we can grow AARC membership. We can cultivate the potential member to be engaged, and to keep in touch as they reach out and grow others. Really, one person at a time can produce many as they turn around and ask others. We recently grew the Education Section by this method, and I think it will work with general members as well. I call it the "Sunflower Movement" — you can read about that on page 5 of the December 2018 edition of *AARC Times*.

8. Lastly, you will work to explore opportunities for the AARC to seek revenues to fund our mission and education, as well as meet the needs of our patients and membership. Explain what will be happening in that area and how these initiatives will benefit the membership as a whole.

Of course, our educational opportunities have been very successful in raising funds needed for our members. We also have opportunities for sponsorship and grants from various venues. The BOD works closely with the AARC Executive Office to budget appropriately, and we have a good record with our investments for the future. We work together to reach out for opportunities as we explore options available to grow funds. We will have our eyes and ears open as we move forward to look for additional funding, and of course we will be diligent in our return on investment as we move projects forward.

9. You mentioned your Sunflower Movement to recognize RTs who go above and beyond the call of duty. How will you keep the momentum going for this campaign during your term in office?

I am glad to report that, since rolling out the campaign, I have heard many stories of success. I have continued to supply sunflower lapel pins to individuals throughout the country. The feedback I have received has been overwhelming! I developed a Sunflower Movement page on AARConnect where anyone can join and share their stories. They are inspirational and motivating.

By the end of last year, I had sent out more than 500 sunflowers to 30 different individuals across the states. It is fun and exciting to see the engagement among

(Continued on page 40)



Industry Watch

Efforts made to curb OCS reliance

Noting that chronic use of oral corticosteroids (OCS) comes with the potential for serious health risks, the American College of Allergy, Asthma and Immunology (ACAAI) has partnered with allergy and asthma patient advocacy groups, other medical professional societies, and industry stakeholders to raise awareness of OCS stewardship and to develop strategies to curb reliance on OCS. The initiative will work to curb OCS overexposure through a range of means, including educating patients and caregivers about the importance of adhering to their other asthma medications, ensuring patients have access to qualified asthma specialists, and working with government agencies, providers, and payers on the problem.

Rush UMC opens center for airway diseases

Rush University Medical Center has opened a center for airway diseases to treat people with interrelated chronic conditions such as sinusitis, allergies, asthma, and sleep apnea. It is the first program of its kind in Illinois and includes spe-

cialists in allergy/immunology, laryngology, pulmonology, rhinology, sleep medicine, and sleep surgery. "My vision was to bring together care for conditions that often coexist under the same umbrella and have physicians from different divisions coordinate the care of all these conditions in a multidisciplinary way," said Dr. Pete Batra, professor and chairperson of the department of otorhinolaryngology, head and neck surgery at Rush UMC. "I hope this can be a model for how we manage these patients with upper airway diseases across the country."

Breakthrough Device Designation for new Bayer device

According to Bayer, the FDA has granted Breakthrough Device Designation to the Chronic Thromboembolic Pulmonary Hypertension (CTEPH) Pattern Recognition Artificial Intelligence (AI) Software, which Bayer is currently developing jointly with Merck. A rare form of pulmonary hypertension, CTEPH affects an estimated five people per million per year globally and can be difficult to diagnose because its symptoms are similar to those of other conditions, such as asth-

ma or COPD. Computed tomography pulmonary angiography (CTPA) as well as a ventilation/perfusion scan are used to determine if thromboembolic occlusion is causing the pulmonary hypertension. Radiologists may have the first opportunity to identify CTEPH in a patient; therefore it's important that they accurately detect CTEPH indicators on CTPA scans and images. Development of the CTEPH Pattern Recognition AI Software will use deep-learning methodology to support radiologists by identifying signs of CTEPH in CTPA scans.

New lung cancer study partnership

The Biocartis Group, headquartered in Belgium, has entered into a partnership with AstraZeneca on a new study that will look at the usefulness of the company's Idylla EGFR Mutation Test in lung cancer diagnosis. The goal is to obtain faster lung cancer molecular diagnostic biomarker results. The study will be carried out in Belgium, France, Germany, and Italy.

Supporting cancer patients' efforts to quit tobacco

The Mayo Clinic Cancer

Center has received a supplemental grant from the National Cancer Institute (NCI) to ensure that all cancer patients who use tobacco have access to treatment for their tobacco use. The two-year, \$500,000 grant, part of the NCI's Cancer Moonshot initiative, will fund programs at the Mayo Clinic Cancer Center and the Mayo Clinic Nicotine Dependence Center. "This grant will help us increase assistance to cancer patients who use tobacco by providing evidence-based tobacco cessation support," said Thulasee Jose, MD, a research fellow working on the project.

FDA approval for severe emphysema treatment

Olympus has announced FDA approval of its Spiration Valve System (SVS) for the treatment of severe emphysema. In addition to being designated a breakthrough medical device, the SVS was granted priority-review status by the FDA because it is intended to treat a life-threatening or irreversibly debilitating disease or condition and offers significant, clinically meaningful advantages over existing legally marketed alternatives. FDA approval of the SVS is based on results of the

EMPROVE clinical trial, which demonstrated that patients treated with the SVS benefited from statistically significant and clinically meaningful improvements in lung function and quality of life compared to standard-of-care medical management.

Propeller Health reports study results

Propeller Health, the University of Wisconsin-Madison, and the University of California, Berkeley, have conducted the first nationwide study to show an association between daily air pollution and rescue inhaler use. The study collected nationwide data from Propeller's digital medicine database to analyze the level of fine particulate matter at the exact time and location of a person's rescue inhaler use. Propeller's leading digital medicines consist of small sensors that easily attach to consumers' existing inhalers. The sensors are paired with a mobile app to automatically track medication use, capture environmental data, and provide personal feedback and insights that help individuals manage and cope with symptoms. The study appeared in *Proceedings of the National Academy of Sciences*.

New ALS trial to launch soon

Mitsubishi Tanabe Pharma America, Inc., will conduct a study to identify and measure specific biomarkers in people with amy-

otrophic lateral sclerosis (ALS). The findings may assist researchers and clinicians in starting the process of validation and the use of biomarkers as quantifiable, biological, non-clinical measures for disease progression and treatment effect of edaravone in people with ALS. Interim data are expected in 2019. "Biomarker research and discovery may be important in the care for people with ALS," said MTPA President Atsushi Fujimoto. He explained that their goal is to evaluate biomarkers to gain insights into how the disease progresses and to optimize research and treatment of the disease.

The dangers of flu and chronic conditions

The National Foundation for Infectious Diseases (NFID) has issued an urgent Call to Action about the dangers of influenza infection among adults with chronic health conditions, including heart disease, lung disease, and diabetes. NFID is communicating the need for improved flu-vaccination rates for adults. A new national survey conducted by NFID found that most U.S. adults are not aware that individuals with chronic health conditions face a higher risk of flu-related complications, including an increased risk of heart attack or stroke. The NFID Call to Action was developed from a Roundtable meeting of medical experts and representatives from nearly 20 national health care

organizations held in Washington last year and provides recommended strategies to improve outcomes for vulnerable populations.

Windtree Therapeutics reports results on AEROSURF®

According to Windtree Therapeutics, Inc., recent data from the AEROSURF® phase 2 clinical program in premature infants with respiratory distress syndrome have found that AEROSURF appeared to reduce the incidence and severity of bronchopulmonary dysplasia (BPD). The finding held true regardless of whether BPD was defined as the need for supplemental oxygen at 36 weeks post-menstrual age or defined per the National Institutes of Health definition. The research was conducted among 261 premature infants, 166 in the active treatment group and 95 who served as controls.

SoClean expands to Europe

SoClean, the creator of the world's first automated CPAP cleaner and sanitizer, is bringing its product directly to consumers in key international markets. In 2018, the company expanded to Canada and the United Kingdom, and it will soon offer its product in France, Germany, Italy, Spain, Japan, and Australia. "As SoClean has grown in the U.S. market, we're in the perfect position to expand globally. By doing so, we want to change lives around the world

and help educate CPAP patients on the benefits of our industry-leading sanitizing solution," said Robert Wilkins, CEO of SoClean.

CFF gives additional support for new CF drug


Aridis Pharmaceuticals, Inc., has announced that the Cystic Fibrosis Foundation has more than doubled its research agreement for the clinical development of AR-501, an inhaled form of gallium, for the treatment of CF infections. Thus funding has increased from \$2.9 million to up to \$7.5 million, contingent on Aridis achieving certain milestones. The FDA has granted both Fast-Track Designation and Qualified Infectious Disease Product Designation for the drug, and it has also cleared the Investigational New Drug Application for AR-501. "Cystic fibrosis patients could benefit from a new and differentiated anti-infective treatment for their chronic lung infections," said Vu Truong, PhD, CEO of Aridis Pharmaceuticals. "We are excited about the potential of AR-501, an inhaled form of gallium, as a more effective delivery route than intravenous administered gallium." ■

Brief submissions and photos for this column may be sent to AARC Times Editor Marsha Cathcart at cathcart@aacrc.org.

Industry Update

Featuring information on products and equipment from manufacturers

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1. Barlo T, et al., Registry outcomes for HFCWO vest therapy in adult patients with bronchiectasis, Am Thor Soc Ann Meet, San Francisco, CA, May 2016, Poster P1496.

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Dunne R et al. Aerosol dose matters in the Emergency Department: A comparison of impact of bronchodilator administration with two nebulizer systems. Poster at the American Association for Respiratory Care, 2016.

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(Continued from page 18)

of places, learning from a host of different people with varying backgrounds and experience. That could be fun. Opportunities abound to do very specific jobs, like performing pulmonary function tests full time, working as part of a pulmonary rehabilitation program, or even doing sleep medicine or hyperbaric therapy.

What now? Who knows what is right for you? It may take a couple of years, and a couple of jobs, to figure that out.

The plans that are in your head may not work out the way you had hoped. This is a new career that can carry you to many places, give you a vast amount of satisfying experiences, and provide for you and your family for many years to come. Any choice you make may not be (and usually is not) the final place for you. Get started — you will find your place. We welcome you to our amazing profession. ■



RC Currents

IN THE NEWS

Patient Experience Figures into Readmission Risk

The government's Readmissions Reduction Program has spurred many studies to determine what causes — and how to avoid — unplanned readmissions to the hospital. Canadian researchers have added to the evidence with a new study that gauged the effect of the patient experience.

The investigators looked at 207 patients who were admitted to an internal medicine ward for more than 48 hours. Nearly all of them reported a disturbance in at least one patient experience category, and 30% reported disturbances in three or four. Categories ranged from sleep and mobility to nutrition and mood. Those who reported three or four disturbances were 16% more likely to be readmitted.

"The results suggest that enhancing our patient-centered healing environment through initiatives that



address these issues may go a long way in improving care," said Dr. Shail Rawal, a physician at Toronto Western Hospital and lead author of the study. "And there are gains that can be made without much pain." The study was published in *JAMA Internal Medicine*. ■

Patients Aren't Always Forthcoming about Their Symptoms



Patient education relies on a give-and-take between patient and clinician, and clinicians go into the process believing that patients will be honest with them about their symptoms and other factors. Researchers from the University of Utah say that might be wishful thinking. Their study found that 60–80% of people are not

forthcoming with their physicians when asked about health-related topics.

The study was based on two surveys conducted among two different age groups. One survey captured responses from 2,011 participants with an average age of 36 years. The other survey was administered to 2,499 participants with an average age of 61 years. They were all presented with seven common scenarios where a patient might feel inclined to conceal health behaviors from their clinician, and they were asked to select those that had happened to them and why they made that choice. Females, those who were younger, and those who reported being in poor health were more likely to say they had failed to disclose medically relevant information.

The researchers believe further study to uncover the reasons why patients hold back information could help inform the development of strategies that clinicians could use to draw out correct information. The study appeared in a recent edition of *JAMA Network Open*. ■

Transitions

In the lives of AARC members



Contribute to Our “Transitions” Column

The AARC “Transitions” column is devoted to sharing news about the passing of AARC members. You can submit news about your colleagues’ recent passing by going to <http://c.AARC.org/transitions>. Please provide any information about the member’s recent obituary so that we can share it with the membership and pay tribute. ■



Study Finds E-cigarettes Don’t Help People Quit

In a study involving 617 tobacco users, Ohio State University investigators found no evidence that using electronic cigarettes leads people to quit using traditional tobacco long term.

The researchers asked participants about their tobacco use every 6–18 months, also gauging their interest in quitting and recording the quit attempts they’d made. At the first check-in, six months into the study, the dual users were more likely to have stopped using tobacco, but that difference disappeared by the 12-month and 18-month interviews. By the end of the study, most dual users were back to smoking cigarettes exclusively. “The initial difference we saw might be due to a higher interest in quitting among the dual users, but that higher quit rate vanished with time,” said lead author Laura Sweet. The study was published in *Nicotine & Tobacco Research*. ■

COPD Self-Management Program Reduces Re-hospitalizations

Johns Hopkins researchers studying a COPD self-management program called BREATHE have reported that those in the program were re-hospitalized at half the rate of a similar group of patients who received standard care.

The study was conducted among 240 patients hospitalized for COPD who were randomized to receive either standard care or the new three-month program. The program paired patients and their family caregivers with a COPD nurse who met with them during hospitalization and then continued consultation, on average, 6.1 times over the next three months through phone calls or home visits.

About 203 patients completed the six months of follow-up care. During that time, there were 15 deaths and 337 subsequent hospitalizations. The number of COPD-related acute care events — either hospitalization or emergency department visits — per participant was 1.4 in the control group and 0.72 among those enrolled in the new program. Quality of life, as measured by the St. George’s Respiratory Questionnaire, declined by 1.53 points on average for those in the intervention group while increasing by 5.44 points for those in the control group. The study was published in *JAMA*. ■

Retirees: Tell Us Your Career Story

AARC *Times* continues to look for contributions to our “Reflections” column, which features AARC members who have recently retired from the respiratory care profession. We ask that you look back at your career or some aspect of it and tell us what it meant to you and why. You can submit your story to AARC *Times* Editor Marsha Cathcart at cathcart@aacr.org. ■



Mid-Life Lung Disease Linked to Later Dementia

Could lung disease earlier in life be a risk factor for dementia later on? According to researchers publishing in the *American Journal of Respiratory and Critical Care Medicine*, the answer may be yes. They analyzed data from more than 14,000 people with an average age of 54 years who were taking part in the Atherosclerosis Risk in Communities study and had undergone spirometry. The participants were then followed for an average of 23 years. At that point, they were assessed for dementia or cognitive impairment. Hospital diagnostic codes were also reviewed for those related to dementia or cognitive impairment.

Overall, 1,407 instances of dementia were recorded, and compared to those without lung disease, the odds of dementia or mild cognitive impairment were 58% higher among those with restrictive lung disease and 33% higher among those with obstructive lung disease. Those with low FEV₁ and FVC were more likely to have dementia as well. The authors believe these findings may be due to the fact that lung disease leads to low blood-oxygen levels, which in turn may lead to inflammation, stress, and damage to blood vessels in the brain. ■

Mortality Is High for British ICU Survivors

A study out of the United Kingdom has found that nearly one in five ICU patients who were discharged from adult ICUs between 2006 and 2013 died within a year. The risk of death was higher for those who were older, had multiple medical conditions, required multiple forms of organ support, or had longer ICU stays. More than half of ICU survivors were re-admitted to the hospital during the year after ICU discharge, and about half of deaths occurred after ICU discharge but before being discharged from the hospital. Mortality after ICU discharge was higher in two regions with higher levels of socioeconomic deprivation and the lowest number of ICU beds per 100,000 population. The research involved more than 40,000 patients in Wales. The study appeared in *Critical Care Medicine*. ■



College Student Comes Up with Better Diagnostic Tool for Fetal Acidosis

Fetal acidosis can lead to devastating effects for newborns, and diagnosing the condition is a challenge. A student from Wichita State University (WSU) may have come up with a better way to identify at-risk infants.

Tammy Dorsey has developed a noninvasive diagnostic tool called the Pedi-Cell that features a sensor on one end that detects the pH and a pH meter line on the other to display the output. As long as the mother is dilated and her water has broken, the tool can be inserted in utero. The Pedi-Cell can touch any part of the baby's body to get a reading.

That would significantly streamline diagnosis. Right now, external monitors are used to tell how strong contractions are and read heart rates, then based on those data, doctors make a judgment call on the intensity of uterine contractions to determine how they are affecting fetal oxygenation, leaving a 50% margin of error.

Dorsey has won several awards for her work and is now in a master of innovation design program at WSU, where she plans to continue to refine the device then submit it to the FDA for approval. ■



New Treatment for Peanut Allergy Is on the Horizon



Researchers publishing in *The New England Journal of Medicine* report good results for a new treatment aimed at helping more people with peanut allergy protect themselves from a life-threatening reaction. The strategy is based on intentional ingestion of peanuts to build up tolerance to accidental exposure over time.

Study participants ranged in age from four to 55 years, but most were four to 17 years old and all had peanut allergy. One third of the participants were given a placebo, while the remaining two thirds were given peanut protein powder in increasing amounts until reaching the maintenance dose, which was the equivalent of one peanut daily. Peanut protein was delivered as part of an oral food challenge, which is considered the gold standard for testing food allergy.

"Reactions from the oral challenges at the end of the study were much milder than prior to treatment," noted study author Stephen Tilles, MD, consulting advisor for Aimmune Therapeutics. "On average, the participants were able to tolerate a 100-fold higher dose of peanut at the end of the study than they did at the beginning. In addition, the symptoms caused by the 100-fold higher dose at the end of study were milder than the symptoms on the lower dose at the beginning of the study."

The researchers look to receive FDA approval for the treatment later this year. ■

VITAMIN C MAY HELP PROTECT NEONATAL LUNGS

Pregnant women should never smoke, but if they can't or won't quit, new research suggests that taking a vitamin C supplement during pregnancy might help protect their offspring against the ill effects of tobacco exposure in the womb.

In a study published in the *American Journal of Respiratory and Critical Care Medicine*, investigators

from Oregon Health & Science University found that women who smoked during pregnancy and added 500 mg of vitamin C to their normal prenatal vitamin had infants with significantly better forced expiratory flows than women who smoked but did not take a vitamin C supplement. The study was conducted among 251 women who were randomly assigned to vitamin C or placebo. ■

Graphic Warnings on Tobacco Ads Provoke Negative Emotions

Graphic warnings on cigarette packages can convince some people not to smoke. A new study out of Cornell University suggests that placing these warnings on ads for tobacco products can have the same effect, especially among kids.

Researchers studied the effect of graphic warning labels on 451 adult smokers and 474 middle schoolers in rural and urban low-income communities in the Northeast. Each participant was randomly assigned a set of six ads with various combinations of text-only warnings, graphic warnings, the current surgeon general warning, brand imagery, and social cues. The investigators then used eye tracking methods to measure which parts of the ads they looked at and for how long. After viewing the ads, participants reported the degree to which they felt negative emotions, including anger, fear, and sadness.

The graphic warning labels drew viewers' attention away from ads and toward the warning. Graphic

warning labels also aroused more negative feelings than text-only labels and reduced the children's perceptions that cigarette brands are attractive and exciting. The study was published recently in *Health Education Research*. ■



A New Treatment for Emphysema?

A protein known as RELM-alpha, which is generated by the human body in response to infection with intestinal worms, might one day be a treatment for emphysema, according to researchers from Rutgers University. "When the parasite first enters the lungs, it induces production of the inflammatory cytokine IL-17, which can cause emphysema," said lead author William Gause. "But subsequently the parasite also triggers this specific component of the immune response that can reduce the IL-17 and thereby limit the severity of the emphysema."

The study, which was published in *Cell Reports*, is among many being conducted around the world to look at immune responses triggered by parasites that may lead to new treatments to control inflammation and promote tissue repair. ■

Oxygen Therapy as a Sleep Aide

Could oxygen therapy one day be a treatment for people who aren't getting enough of the restorative, slow-wave sleep they need? Researchers from the University of Alberta believe it's possible. When they delivered high levels of oxygen to sleeping animals, brain scans showed they switched out of active sleep and remained in deactivated, slow-wave sleep. Slow-wave sleep is the deepest stage of sleep where metabolites are cleared from the brain, muscles grow, and proteins reform. The study was published in the *Journal of Neurophysiology*. ■

How Hantaviruses Invade Lung Cells

A new study from an international team of researchers, including those from the United States, offers an explanation for how deadly hantaviruses invade lung cells. According to the investigators, they gain entry by “unlocking” a cell-surface receptor called protocadherin-1 (PCDH1). When the researchers deleted this receptor in lab animals, they became highly resistant to infection, leading the authors to believe that targeting PCDH1 could be a useful strategy against deadly hantavirus pulmonary syndrome (HPS), which can include fatigue, fever, and muscle aches early on, followed by coughing and shortness of breath. The mortality rate is around 40%.

HPS was first identified in 1993, and 728 cases have been reported in the United States, mainly in rural areas of the western states. Humans become infected when they inhale the virus from the urine, feces, or saliva of infected rodents. The study appeared in a recent edition of *Nature*. ■



Strange but True . . .

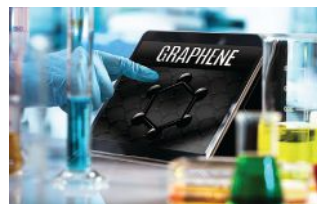
Heart bandage:

North Carolina State University researchers are working on an implantable bandage that may one day help heal tissue damaged in a heart attack. The bandage is studded with microneedles and is coated in a gel containing cardiac stromal cells, which secrete proteins and microRNAs that support the growth of heart muscle cells.



Sounding out ALS:

Investigators from the University of Illinois at Chicago have found a new use for a material usually associated with electronics. They found that adding cerebrospinal fluid from patients with ALS to graphene produced a distinct change in the vibrational characteristics of the graphene compared to when fluid from a patient with multiple sclerosis was added or when fluid from a patient without neurodegenerative disease was added. These distinct changes allowed researchers to accurately predict what kind of patient the fluid came from — one with ALS, MS, or no neurodegenerative disease.



EHR burnout? Could

the electronic health record be responsible for burnout among physicians? According to Brown University researchers, the answer is yes. Their survey found that 70% of those who said they used EHRs reported at least one of the three measures of EHR-related stress used by the survey, and more than a third reported all three. Measures included agreeing that EHRs add to the frustration of their day, spending moderate to excessive amounts of time on EHRs while they were at home, and reporting insufficient time for documentation while at work.



If your hair could

talk: A strand of hair may one day be used to detect a range of diseases, including those that affect the respiratory system. Researchers from South Ural State University in Russia are planning to test human hair for biochemical values and characteristics such as the order of molecules in the hair's structure, amino acids correlation, and length, thickness, and color of a hair shaft to see if those values and characteristics can uncover diseases in their earliest stages. ■





Calendar of Events

AARC & State Society Programs

March 22, 2019

Richmond, VA

Capital City Symposium

Contact: b.brooks233@gmail.com or www.vsrc.org

April 3, 2019 – April 5, 2019

Kalamazoo, MI

Michigan Society for Respiratory Care Spring Conference

Contact: associations@mhsa.com or www.michganrc.org

April 17, 2019 – April 19, 2019

Osage Beach, MO

MSRC 48th Annual State Conference

Contact: terra.saunders-crouch@mercy.net or www.MoSRC.org

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Unbreakable Bonds

by David Lain, PhD, JD, RRT, FAARC

Forty years is a long time to spend in a profession. Over 40 years, the work changes, career paths emerge, and we grow. At the beginning of a career, we're all beginners, still learning. Over time we become experts. If we stay in our profession long enough, keep learning, and remain passionate, we find that the degree of intellectual stimulation increases with our ability to solve problems. Over time we develop bonds with other problem-solving colleagues, and those bonds become deeper friendships.

Lifting ourselves up

Over the past 40 years, I grew in the respiratory care profession along with those colleagues. Beginning as inhalation therapists — for me, just out of the oxygen tech era — we evolved into respiratory therapists. Throughout this evolution, the complexity of care we delivered expanded and our field matured. The level of therapy we provided became more advanced, and our ability to provide more intricate respiratory care arose.

We lifted ourselves up from intermittent positive pressure breathing jockeys delivering Mucomyst and Bronkosol to scientists seeking methods to reduce or eliminate iatrogenic progression of acute lung injury. We migrated from iron lungs, Emerson post-ops, or MA-1s to ventilators that fit futuristic science fiction movies.

But there is one constant that has remained an integral part of my life as a therapist, and it is this constant that I reflect upon on a daily basis. It also provides a major element to my life. This constant is the friendships that grew out of such a long time spent in a wonderful profession. It is these friends I look forward to hearing from in small ways on a daily basis.

A network of experts

The acquaintances we make in the workplace often can be superficial, but for those of us working to give care, we often develop deeper relationships. I feel fortunate that many of my heartfelt friendships were built in the workplace. From my roommate in the early 1970s (my former nightshift respiratory care supervisor) to the respiratory therapists who shared our family vacations, there is a community of friends that came from my career. For many of us, it was among those therapists that we found spouses, had children, and watched them grow up. Along the way we lost some of our closest, dearest friends.

Some of us have stayed connected despite changing jobs and moving hundreds if not thousands of miles apart. We've never lost touch even when separated by oceans. Problems would arise; there'd be a difficult patient or research problem. Within minutes, our group would be together on calls to solve matters often too complex for one person. We created a network of experts who strived to improve and change medicine. And, that we did.

When I look over the accomplishments of the group of therapists I call friends and family, I am amazed at their published papers, their medical

awards, and their patents. Not a day goes by when I don't think of people with whom I was able to share four decades of adventure.

Affection runs deep

I hear from many of them every day. It may not be the same people every day; it's more a rotation. Or they hear from me — pretty much as it was before I retired.

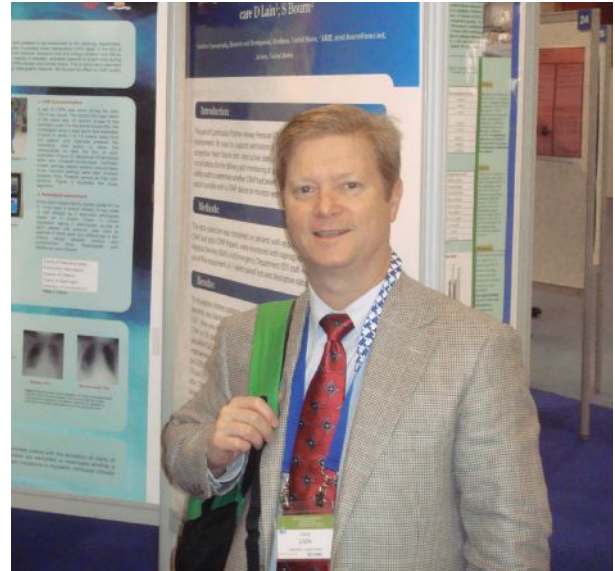
about the author...



David Lain retired from his role in respiratory care industry in 2012 and is now enjoying life in Athens, GA, where he remains active in athletics of all kinds.



Dr. Lain proudly wore the AARC logo on his jersey during the Ironman World Championship in Kona, HI, in 2008. He vividly recalls hearing more than one member of the crowd yell out to him, "I'm a respiratory therapist, too!"



Many of them are truly in the construct of my life. Many of them helped mold me into a better therapist. Sadly, a few have left us. Those who have gone have left huge holes.

What I reflect upon most are the amazing, dedicated, caring, and truly brilliant people I am so lucky to have known and with whom I traveled the path of being a respiratory therapist. For all of you, all the caregivers, educators, administrators, and scientists, I hold the deepest affection. ■

(Continued from page 28)

everyone from long-time practitioners to new students. I look forward to “planting” and “growing” more. Contact me at karen.schell@aarc.org if you would like some sunflower lapel pins to plant, and I will drop some in the mail for you.

10. You'll need the support of the AARC membership to make all these things happen. What would you like to say to members about answering the call when asked to serve?

Jump in with both feet! Let me know your skills and I will put you to work at something that can fit into your schedule and align with your passions. We need you to be engaged and involved every day, sharing your profession with those around you. Start small — it can be a simple conversation with a coworker over lunch (or on the elevator), a community project in your area, reaching out to other health care providers in your work environment, etc. Anything is possible if you become involved, and it can change your perspective, your attitude, your life, and, most of all, the life of another. It's time for our profession to evolve, and you can help make it happen. ■



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