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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.

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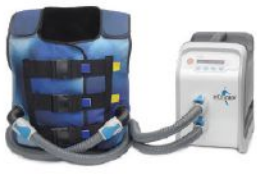

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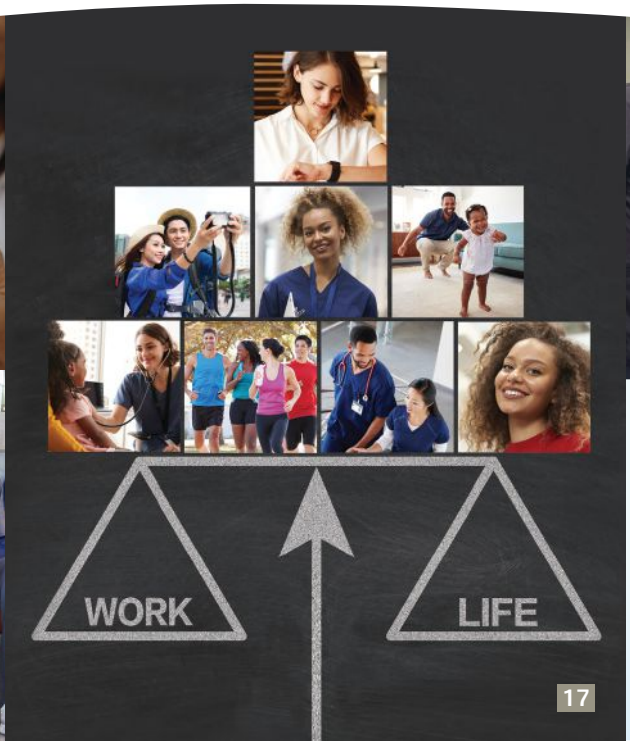

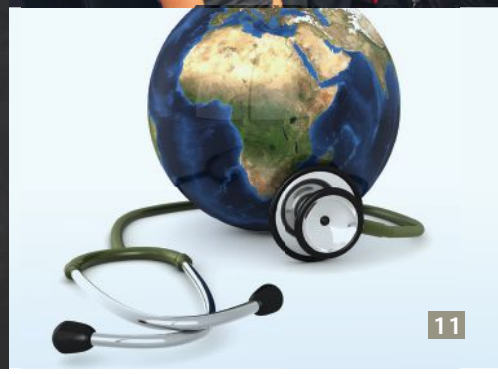

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AARC Strategic Plan

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

Bookmark this page: http://www.aarc.org/member_services/mission/.

American Association for Respiratory Care

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AARC Times and Respiratory Care — official publications of the AARC

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AARC Times **(USPS 491-930)** (ISSN 0893-8520) is a monthly publication of Daedalus Enterprises, Inc., for the American Association for Respiratory Care.

Periodicals Postage: Paid at Irving, TX, and at additional mailing offices. POSTMASTER: Send form 3579 to *AARC Times*, Daedalus Enterprises, Inc., 9425 N. MacArthur Blvd., Suite 100, Irving, TX 75063-4706.

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Subscriptions: Individual subscriptions are available for $90 per year (12 issues) in the United States or Puerto Rico; $125 per year in all other countries. Non-member Institution subscription is $140 per year. Member rates available at www.AARC.org. Single copies, current and back issues, if available, are $11.50. Write *AARC Times*, Daedalus Enterprises, Inc., 9425 N. MacArthur Blvd., Suite 100, Irving, TX 75063-4706. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Daedalus Enterprises, Inc.

AARC Membership Provides Unique Value to Respiratory Care Professionals

by Thomas J. Kallstrom, MBA, RRT, FAARC

Every so often, I get to meet new graduates or practitioners entering our profession. Eventually the conversation drifts to my usual inquiry: Are you an AARC member?

Sadly, many times I hear that these practitioners are not members because they have the perception that the membership dues are too high or that the organization doesn't provide value. I have also received feedback, which reveals that practitioners may confuse AARC membership expenses with other professional expenses, like NBRC and state licensure boards, which do not have membership renewal.

Responses like these provide me the opportunity to give the elevator speech. Let's break these responses down and drill into them a bit.

about the author...

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

Fallacy 1: AARC membership dues are too high

As a membership organization, we are very aware that, because membership is not free, there are other considerations that RTs need to make in order to live and provide for themselves and their families. This is one of the reasons that the cost of AARC membership is kept comparatively less and, in some instances, substantially less than dues for similar trade organizations. For example, the American Occupational Therapy Association's annual membership cost is $225.00; for students, the annual cost is $75.00. For a physical therapist, the annual cost of membership to the American Physical Therapy Association is $1,300.00. For the American Association of Echocardiography, annual membership costs $160.00. Members of the American Society of Radiology Technologists pay $125.00 annually; students have discounted dues of $35.00. The American Nursing Association's cost of membership is $191.00 annually. In comparison, the cost of AARC membership is $89.00 a year, and student membership costs $25.00.

I encourage you to compare membership benefits for these and other medical associations against AARC's benefits to see what they offer for the cost compared to AARC. You may find that membership to AARC is the best deal in town.

Looking at this from a local perspective, it is important to note that AARC gives 15% of its membership fees back to the members' state societies. In addition, the Association has a co-marketing program in which select sales revenue is shared with the state societies. When you attend AARC's Congress or Summer Forum, the state society receives a portion of that revenue as well. The Association also provides assistance from its regulatory team, which provides updates and, as necessary, intervention when a state society is in need. Not a bad deal, especially when you consider what membership provides.

Fallacy 2: I pay my $25.00 membership every year

This is a common misconception of a lot of our newer professionals. This $25.00 fee is actually the annual renewal cost paid to the National Board for Respiratory Care (NBRC) for maintaining your credentials; it is *not* the cost of AARC membership. It is important to remember that the NBRC is the credentialing arm of the profession, while AARC is the only national professional organization for respiratory therapists.

What does AARC do anyway?

I am always happy to discuss AARC's value with RTs who do not know much about the organization. Here are some examples from just the past couple of months:

- AARC has been engaged in advocacy both locally and nationally. On a national basis, AARC-employed lobbyists, who are based in Washington, work closely with lawmakers on Capitol Hill. We're confident that a bill will soon be introduced into Congress that will allow RTs to deliver disease management services to Medicare patients who have COPD as telehealth providers. Once the House bill is introduced, we will lobby for a companion bill in the Senate. This is important because RTs are experts in pulmonary care but are not recognized as qualified Medicare telehealth practitioners. This recognition by Medicare must happen, and that is why it is a key issue for us this year.
- We continue to advocate for our patients on oxygen who are on Medicare. Changes in competitive bidding that took effect this year are likely to be very harmful for patients who need liquid oxygen. Reimbursement rates are insufficient to cover the cost of this expensive service, and we have learned that some suppliers are telling their patients they will no longer furnish liquid oxygen. AARC is working with other pulmonary groups to develop a Congressional sign-on letter directing the Medicare Administrator to monitor patient access to liquid oxygen during the competitive bidding suspension in an effort to ensure that patient access to the appropriate delivery device is not compromised. This and our telehealth legislation will be key issues on our agenda when over 100 RTs converge on Washington this spring for our annual Advocacy Day on the Hill.
- The AARC Board of Directors continues to support and push for a role for the advanced practice respiratory therapist.
- Airline safety for our patients is critical. There are two areas in which we are seeking to make the skies friendlier for our patients. We would like to make travel by airplane less onerous for pulmonary patients. A working group from the AARC Board of Directors is focused on oxygen issues and resolutions. We are also teaming up with the Allergy and Asthma Network to cobble together a report card of sorts that will allow us to gauge which airlines are actually taking appropriate precautions for allergy sufferers and patients with asthma. Did you know that there is no federal mandate that domestic airlines carry self-injectable epinephrine? We are seeking to change this as well.

These are just a few initiatives that the Association is working on in 2019. Membership is important for the survival of the respiratory therapy profession, and without our members, we would be in a difficult situation. Remember that, as a member, you also receive the following:

- 20+ free live webcasts/year with CRCE
- 20+ complimentary on-demand courses with CRCE
- A voice where you can vote for your leaders on a national and state basis
- Base membership is $89.00/year ($0.24/day)
- Early professional member discounts that extend into the first four years of professional practice
- An opportunity to engage with over 50,000 professionals in an online networking space (AARConnect)

AARC membership is a way to showcase your professionalism. Being a member means that AARC can assist in your professional development as well as offer you a way to advocate for RTs and our patients. Please consider being a part of our professional association. If you are already a member, thank you for helping us do this work for you and our patients. ■

How To Win an Argument with a Police Officer

by Anthony L. DeWitt, JD, RRT, FAARC

The light was yellow when you started through the intersection. It may have gone red after you got through it, but it was yellow when you started through. You're certain of this. But the police officer won't listen to reason. After telling you three times to give your license to him, he opens your door and tells you to step out of the car. You are incensed!

If you've ever been unfairly (or even fairly) pulled over for a traffic violation, you know that police officers sometimes make mistakes. Sometimes they issue citations for violations that perhaps they should not. Even police officers have erasers on their pencils because, just like everyone else, they make errors.

But, here is perhaps the most important legal advice I ever give: Do not argue with the police officer.

If you look at this advice, you might think there is a word missing. Perhaps that word is "except." You may be thinking I overlooked this word. I did not. There are no exceptions to this rule.

When I took French in high school, I bought a book that I was sure would put me ahead of my fellow students and get attention from the teacher. The book was called *The Insult Dictionary: How To Be Abusive in Five Different Languages*.[1] It had many different witty *phrases provocantes* (provocative phrases), like "You may be big enough for two seats but you only paid for one, so move over." Just the kind of witty material sure to lower a B grade down to a C (based on my results; yours may vary). But one thing the book had that I found very interesting was a series of phrases for foreign police officers. My recollection is that they all started with the foreign language equivalent of "Excuse me, kind and noble policeman, but could you…." In other words, while it might be okay to tell the man on the bus to move over, you *never*, *ever* say unkind things to police officers. This was good advice for Italy and France, and it's good advice for our country.

Without getting into the legal niceties of when a traffic stop is a seizure for constitutional purposes, the most important thing about traffic stops (and traffic cops) is that you cannot visit upon them any insult or invective they have not already heard at least twice before. Police officers *expect* this kind of treatment and receive training on how to deal with it. So, while you have a First Amendment right to question the legitimacy of the police officer's birth, doing so will never, ever get you out of trouble — but it certainly will increase your chances of getting into trouble.

There are three phrases that are important when dealing with police officers: "Yes, sir (ma'am)," "No, sir (ma'am)," and "I don't know, sir (ma'am)." You may feel you're being picked on. You may be angry. You may be in a hurry. Whatever is happening in your life, now is the moment to slow down and be as nice as you can be.

Although there are police jurisdictions that operate speed traps as profit centers for small towns, most police officers, shockingly, want to avoid their least favorite traffic call: the motor vehicle accident with injuries. When

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.

they stop you for speeding, in most cases, it isn't because they have a quota or because their department gets a cut of the revenue. It's because they truly don't want to drive a mile down the road and see your car wrapped around a bridge abutment. While it is never a good idea to admit you were speeding, a proper response to a police officer saying he caught you doing 94 in a 70 mile per hour zone is to say, "Well, if your radar is correct, I need to slow down." You're not admitting you were going that fast — you're simply saying that if the radar says you were, you need to slow down. Demonstrating some contrition is always a good idea. I have been let off with warnings even when I was going well above the speed limit because I was honest with the police officer and respectful of him. Respect, you'll find, is a two-way street.

It's also important to remember that what you don't know *can* hurt you. I was once taken out of my car at gunpoint by a pair of Texas police officers, made to lie on the ground, handcuffed, searched, and then abruptly had the cuffs removed, got a quick apology, and the officers jumped in their car and took off, lights blazing. I found out later a car very similar to mine had been involved in a convenience store robbery where the clerk was shot and wounded. Police want to avoid seeing you professionally as a patient in your hospital, and as a result, they tend to be extra careful on calls like that.

Back to that red-light problem. How do you convince the police officer not to ticket you? You don't. You take the ticket and appear in court, and, if necessary, you hire a lawyer to defend you. In many jurisdictions, tickets can be amended so that no points will be assessed against your license. You may pay a fine, but your insurance does not go up. You don't beat the police officer in court, but you avoid the ongoing effects of your violation.

The key point is this: You are never going to get anywhere arguing with a police officer. If you're right, you can fight it out in court. But if you attempt to fight it out at the roadside, just keep in mind that jails are not very friendly places. ■

Reference

1. The Insult Dictionary: How To Be Abusive in Five Languages. Wolfe Publishing; 1966.

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An International Affair

by Debbie Bunch

The respiratory care profession was born and bred in the United States of America, and aside from our colleagues in Canada, few health care professionals outside of our borders even knew the field existed for the first several decades of its life. Slowly but surely, however, AARC members began traveling to other countries to share their knowledge and expertise, and as those experiences multiplied, it became clear that what we saw as a uniquely North American phenomenon had the potential to spread to other areas of the world as well.

That concept went into overdrive in 1990 when the AARC decided to pilot an International Fellowship Program. *AARC Times* covered the development in our November issue with an article titled "AARC Undertakes Pilot Project in International Respiratory Care Fellowships," written by the chair of the International Fellowship Subcommittee that year, Vijay Deshpande, MS, RRT, FAARC.

50+ applications

A native of India, Deshpande was then serving as assistant professor of the department of cardiopulmonary care sciences at Georgia State University in Atlanta, and he had the perfect background to lead the effort. In that article, Deshpande outlined the rationale for the program. "Through the years, many individual AARC members have traveled abroad promoting the respiratory care profession in other countries," he wrote. "However, since there is no current counterpart to the respiratory care practitioner in most parts of the world, it has been difficult to explain the roles and responsibilities of our practitioners and profession."

The Fellowship Program — which will celebrate its 30th anniversary next year — was seen as a way to overcome that problem. Deshpande and his colleagues envisioned a two-week fellowship program leading up to attendance at the AARC Congress every year. In this two-week program, each fellow would visit respiratory care facilities in two U.S. cities. The goal would be to see respiratory therapists in action at big and small hospitals, RT educational programs, and ancillary sites like outpatient clinics and the home.

According to Deshpande's 1990 article, there was an overwhelming response to the program from the international community. More than 50 applications were received from individuals in 23 different countries. Seven candidates were selected for the inaugural class of fellows, representing Taiwan, Yugoslavia, Malaysia, The Philippines, India, Japan, and Holland. AARC members were recruited to serve as city hosts and to help coordinate the learning experiences for the fellows. Deshpande emphasized the importance of these AARC volunteers. "The success of this program depends on assistance from the AARC membership. A total of 21 AARC members applied for voluntary participation as city hosts to coordinate fellowship activities in their areas." Because each city host would then draw in another handful of members to assist, Deshpande estimated that more than 50 members would be involved in the first seven fellowships.

Overwhelming success

Deshpande followed up on the fellowship program in our March 1991 edition in an introduction to an article called "American RCPs and International Fellows Share RC Experiences," which featured reports from the individual city hosts. "The response to the fellowship program was overwhelming," he wrote. By then, eight international fellows were part of the mix (a fellow from Thailand was added following the 1990 article), and Deshpande updated his original estimate of how many AARC members were involved. "The success of the AARC's first International Fellowship Program must be attributed to the many enthusiastic respiratory care practitioners in the ten host cities," he wrote. "All in all, more than 150 people from across the United States participated in the fellowship program." He was quick to thank the generous donors who made the program possible as well — the first program was supported by the University of Toledo Community and Technical College,

Georgia State University, Bird Products Corporation, Applied Measurement Professionals, and the AARC.

The city hosts' accounts were glowing as well. Paula Luedke, RRT, reported in from Seattle, WA, noting that despite the weather — the city was suffering the aftermath of the "flood of the century" and the beautiful mountains that give the area such charm were swathed in clouds — the experience was magical for all concerned. As a CRTT, physical therapist, and clinical engineer at a 2,000-bed hospital in Japan, Tetsuo Miyagawa enthusiastically embraced each setting he visited and was excited to see respiratory care in action. Wrote Luedke, "We really enjoyed being a city host for the AARC and learning about the current practice of respiratory care in Japan."

Brian Oka, RRT-NPS, of Honolulu, HI, said he and his colleagues appreciated the chance to show Lawrence Leong, of Malaysia, how RTs were participating in everything from ICU rounds at one of the state's largest facilities to geriatric care in the rehabilitation setting. But Oka said Leong was particularly interested in finding out how therapists were trained for the job. "Lawrence said he was especially interested in learning about the educational requirements for respiratory care practitioners in the United States," Oka wrote. "Therefore, the time he spent with the leaders of Kapiolani Community College's allied health department was very valuable to him."

City hosts in Eugene, OR, were pleased to welcome not just International Fellow Dr. Subharee Suwanjutha, a pediatric pulmonologist from Bangkok, Thailand, to their city, but her colleague, Dr. Aroonwan Pruetthipan, as well. The "two-for-one" visit showed how the Fellowship Program was already spreading its wings to take others into the fold and gave Michael Bellamy, CRTT, and his crew the chance to double their impact. "The visitors were able to observe respiratory care practitioners performing a multitude of responsibilities at a teaching hospital, Oregon Health Sciences/Doernbecher Children's Hospital," he wrote. "Then, they toured through the respiratory department and critical care areas of McKenzie-Willamette Hospital, where they learned about the fiscal and staffing needs of a small community facility." Visits to an RT educational program and home care service rounded out the experience.

A known commodity

Throughout the years, *AARC Times* has covered the International Fellowship Program, showing its continuing success and impact on the development of respiratory care around the world as the fellows returned to their home countries and spread the word about respiratory care during their fellowship experiences. Thanks in large part to this international exchange program, today there are educational programs for respiratory care in nations ranging from Mexico to Taiwan, and the profession is a known commodity throughout the rest of the world. ■

Editor's Note: You can learn much more about international respiratory care in the special international issues of *AARC Times* that have been published since 2005. Our most recent international issue appeared in our January 2019 edition. ■

Chronic Disease Manager

Home Asthma Education: Can I Get Reimbursed for That?

by Sara M. Parker, MPH, RRT, RRT-NPS, RRT-ACCS, AE-C

I became interested in home-based asthma education after the St. Louis Chapter of the Asthma and Allergy Foundation of America sent out a call to Certified Asthma Educators and asked if I would be interested in providing home-based asthma education. I love talking about asthma and I love asthma education, but "because I love doing it" was not a good enough reason to move forward for me. I am never one to do something just for the sake of doing it; I wanted to know whether utilizing home-based asthma education was actually an effective management tool.

It is well known that asthma is a common health problem in the United States. The most recent asthma prevalence data (from 2016) from the Centers for Disease Control and Prevention (CDC) indicate that 8.3% of both the adult and child population has asthma.[1] This translates to approximately 26 million people in the United States currently diagnosed with asthma. In 2016, there were 3,518 deaths from asthma and 1.7 million visits to the emergency department (ED).[1] As respiratory therapists, it is our job to provide education that helps prevent asthma-related deaths, and it certainly would be exciting if this were available to patients in the comfort of their own homes.

On the surface, home-based asthma education may seem like a new model, but data from 2001 reveals that the CDC developed such a program, called Controlling Asthma in American Cities Project, nearly 20 years ago.[2] This program was put in place in six urban areas across the United States. The goal of the program was to develop effective community-based interventions that would improve asthma control community-wide in youth under the age of 18 years.[2] One of the strategies identified was to utilize home-based asthma visits. All six of the cities showed reductions in hospitalizations, ED visits, and asthma symptoms in their selected patients at the end of the two-year grant period.[2] Home visits are becoming more and more popular because many patients have neither the time nor the inclination to attend asthma education classes presented outside the home.[3]

In addition to the potential positive impact of home-based asthma education in terms of an overall decrease in hospitalizations and ED visits, another powerful consideration is showing a positive return on investment (ROI). A narrative review published in 2016[4] reported ROI data for nine outpatient programs and 17 home-based intervention programs. Two programs that specifically mentioned respiratory therapists in their programs include the Parkview ED Asthma Call Back Program in Indiana and Optima Health Management Services in Virginia. The Parkview program mainly focuses on direct contact via telephone, but it can also include up to three home visits.[5] The ROI for this program in the first year was over $20 for every $1 spent by the program, and it is estimated that approximately $1.9 million in ED costs were avoided by the third year of the program. The Optima Health program utilizes home asthma education with home-based environmental interventions, and returns $4.10 for every $1 spent by the program.[6]

While this should convince you that home-based asthma education is an effective asthma-management

about the author...

Sara M. Parker, MPH, RRT, RRT-NPS, RRT-ACCS, AE-C, worked as a children's transport therapist for eight years before moving over to teaching at the University of Missouri-Columbia in 2008. She received her MPH from the University of Missouri-Columbia in 2014.

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PM532

tool, it is also important to know what specific information should be included in a home-education program. The primary goal of any asthma-education session, regardless of where it takes place, is to improve self-efficacy of patients and families. To improve self-efficacy, patients must have basic education about asthma in general, know how and when to take various medications, be aware of symptoms, and have a written asthma action plan.[7] A major component of a home-based education program certainly must also include an environmental assessment and intervention. When it comes to home environmental interventions, a single step is not enough, and any effective approach must be multi-faceted.[8] The data available for outcomes do not address any asthma-related health care usage. It supports multi-faceted interventions when it comes to reducing exacerbations and improving quality of life with the utilization of HEPA vacuums or pest control.[8]

Reimbursement will, of course, vary depending on a multitude of factors, but two CPT codes that relate to home-based asthma education are S9441 and 98960: S9441 is asthma education, non-physician provider, per session, two 30-minute sessions per year; 98960 is education and training for patient self-management, one 90-minute session per year.[9]

Home-based asthma education is an effective management tool, but not all states have programs in place to utilize respiratory therapists for this service. Some states have had success only with public insurance providers, while others have had success primarily with private insurance providers.[10] The data show how effective home-based asthma education is and the significant ROI realized, so it should not take long for insurance programs to change. A pilot project to show just how large an impact home-based asthma education can have could make a bigger impression on key stakeholders in your area. Stakeholders may also include legislators if a change to public insurance reimbursement strategies is required.[10]

Home-based asthma education is an excellent resource to include in the respiratory therapist's toolbox of resources. The key components are a home environmental assessment with necessary interventions, general asthma information regarding symptom awareness and medication usage, and a written asthma action plan to improve self-efficacy. The impact on the asthma patient population will be immense if all states adopt and utilize programs involving home-based asthma education. ■

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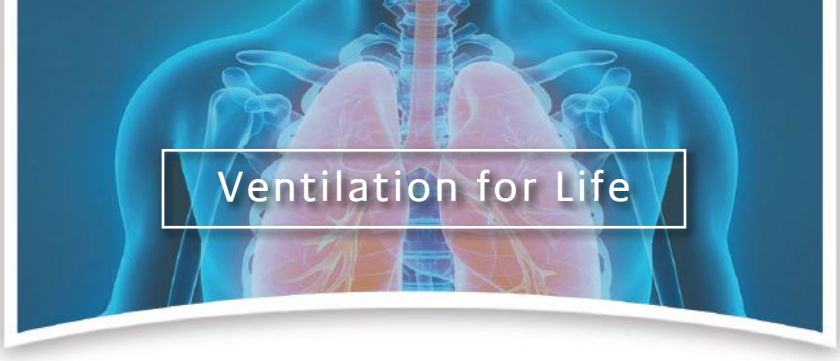

ICU Patients on Ventilators Can Get Up and Moving

by Carl Hinkson, MS, RRT, RRT-ACCS, NPS, FAARC

Technological capabilities and better understanding of acute and chronic illnesses have improved patient outcomes and extended lives.[1] Strategies such as lung-protective ventilation to reduce mortality in ARDS and other interventions have led to more survivors of critical illness. However, a cluster of concerning long-term physiological and mental changes have led to the creation of the new term "post-intensive care syndrome" (PICS). PICS can be defined as "a constellation of new or worsening impairments in physical, mental, and/or cognitive abilities in individuals who survive critical illness and intensive care."[1] As many as 55% of patients may experience one or more impairment associated with PICS, and these impairments may persist for years. In the acute phase, the term "ICU-acquired weakness" (ICUAW) is used to describe the physical limitations many patients experience, which prolongs mechanical ventilation.[1]

A systematic review of physical impairments after critical illness noted a variety of alterations that persisted up to 12 months after patients' ICU stay, including decreased pulmonary function measurements and diminished inspiratory muscle strength, hand grip strength, and upper limb strength. The same review found that activities such as the 6-minute walk test and exercise capacity assessment were also limited. Following a critical illness, up to 33% of survivors were still dependent on others for some activities of daily living, such as bathing, dressing, or feeding.[1]

Given the severity of ongoing physical limitations after surviving an acute admission to an ICU, clinicians have sought to understand the possible etiology for ICUAW. Historically, high levels of sedation and bed rest have been required to support a patient through an ICU stay. Over the last decade, we have come to understand better the problems associated with keeping patients immobile and over-sedated. The pathophysiology for ICUAW involves many changes in a patient's skeletal muscles and nerves. ICUAW itself is considered to be a combination of two different pathologies: critical illness polyneuropathy (CIP) and critical illness myopathy (CIM).[2]

In CIP, changes in the nerves at the location of the axonal junction degenerate, causing nerve conduction to be slowed.[3] The precise etiology is not well understood. Research reveals an increase in microvascular permeability at the axonal junction with some diseases such as sepsis. This leakiness allows toxic mediators to penetrate the nerve and cause direct damage. Hyperglycemia appears to play an important role and has been associated with nerve damage by increasing nerve permeability.[3] CIM is often associated with skeletal muscle atrophy that occurs when the muscles are not used. Even though each can be considered a distinct process, both CIP and CIM occur simultaneously in patients with ICUAW.[2]

Diagnosis of ICUAW during an ICU stay can be difficult. A physical exam to identify weakness requires an awake and cooperative patient, which is not always possible. Other alternatives include muscle ultrasound, muscle biopsy, single-nerve conduction study, and full-nerve conduction study with electromyography (EMG).[2] Each method of diagnosis has associated limitations, so the diagnosis is often still made empirically.

Early mobilization of ICU patients, including those who are receiving mechanical ventilation, is a frequent

about the author...

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proposal to address ICUAW.[3-4] Increasing physical activity for patients, even during critical illness, is thought to have benefits. The increase in skeletal muscle activity can lessen the amount of atrophy, and increased activity also has the theoretical benefit of reducing hyperglycemia.[3-4] When the skeletal muscles are active, they consume the built-up glucose, thus helping reduce the permeability thought to occur at the neuronal junction.

Early mobilization has become a part of the Awakening and Breathing Coordination, Delirium Monitoring and Management, and Early Mobility (ABCDE) bundle to promote liberation from mechanical ventilation and prevent a prolonged illness due to weakness.[5] The ABCDE bundle provides a framework of evidenced-based practice. As part of the ABCDE bundle, patients should be assessed for their readiness to be extubated. However, even if they remain intubated, every effort must be taken to mobilize the patient to the fullest of their physical capabilities. When following an organized process, early mobilization of patients on mechanical ventilation can be done safely.[6] Respiratory therapists play a pivotal role in advocating for their patients, including early mobilization.

There is a step-wise progression to increased physical activity for mechanically ventilated patients:[7]

1. Perform passive range-of-motion therapy for the patient who is unable to participate.
2. Have the patient sit up in bed.
3. Have the patient sit on the edge of the bed with feet dangling.
4. Have the patient stand up.
5. Have the patient walk while on the ventilator.

During each step of the process, the patient should be monitored for changes in oxygenation status, hypotension, or dysrhythmia. In a review of patient safety during mobilization, adverse events occurred in only 2.6% of all mobilizations, and the majority of those events were minor.[6]

Specialized equipment is needed to mobilize mechanically ventilated patients. A transport ventilator equipped with oxygen tanks is ideal for this purpose. Portable patient monitoring equipment, an IV pole, and portable suction are also recommended during mobilization. The staff needed to assist with mobilization include a registered nurse and a respiratory therapist. However, additional staff such as an aide may also beneficial. The role of the respiratory therapist during this activity includes ensuring that the airway remains secure and monitoring the patient for ventilator tolerance.

Equipment should be tested prior to mobilization, and the airway should be cleared with suction. Therapists should be prepared for adverse events and have safety equipment ready to use. There are no established standards for ventilator mode or settings when walking a patient while on mechanical ventilation. A mode that maintains patient comfort and is adaptable enough to support the increased minute volume and inspiratory flow demands is preferable.

Several randomized controlled studies have evaluated the impact on outcomes with early mobilization. To date, the outcome-based studies on early ICU mobilization are mixed. Schweickert et al. observed a decrease in duration of mechanical ventilation.[8] Kayambu et al also reported improvement in physical function scores at discharge.[9] In a larger trial, Morris et al studied 300 randomized patients and compared the usual care with intensive physical therapy. They reported no difference in hospital length of stay between the groups.[7]

Respiratory therapists can play an essential role in getting ICU patient on ventilators up and moving. Walking patients on ventilators can be done safely and is potentially beneficial for them. You can advocate for your patients. During daily ICU rounds, you can take the lead and ask what the barriers are to mobilization, and follow this up with action to help get your patient moving. By being an advocate for your patients and communities, you can advance patient care and our profession. ■

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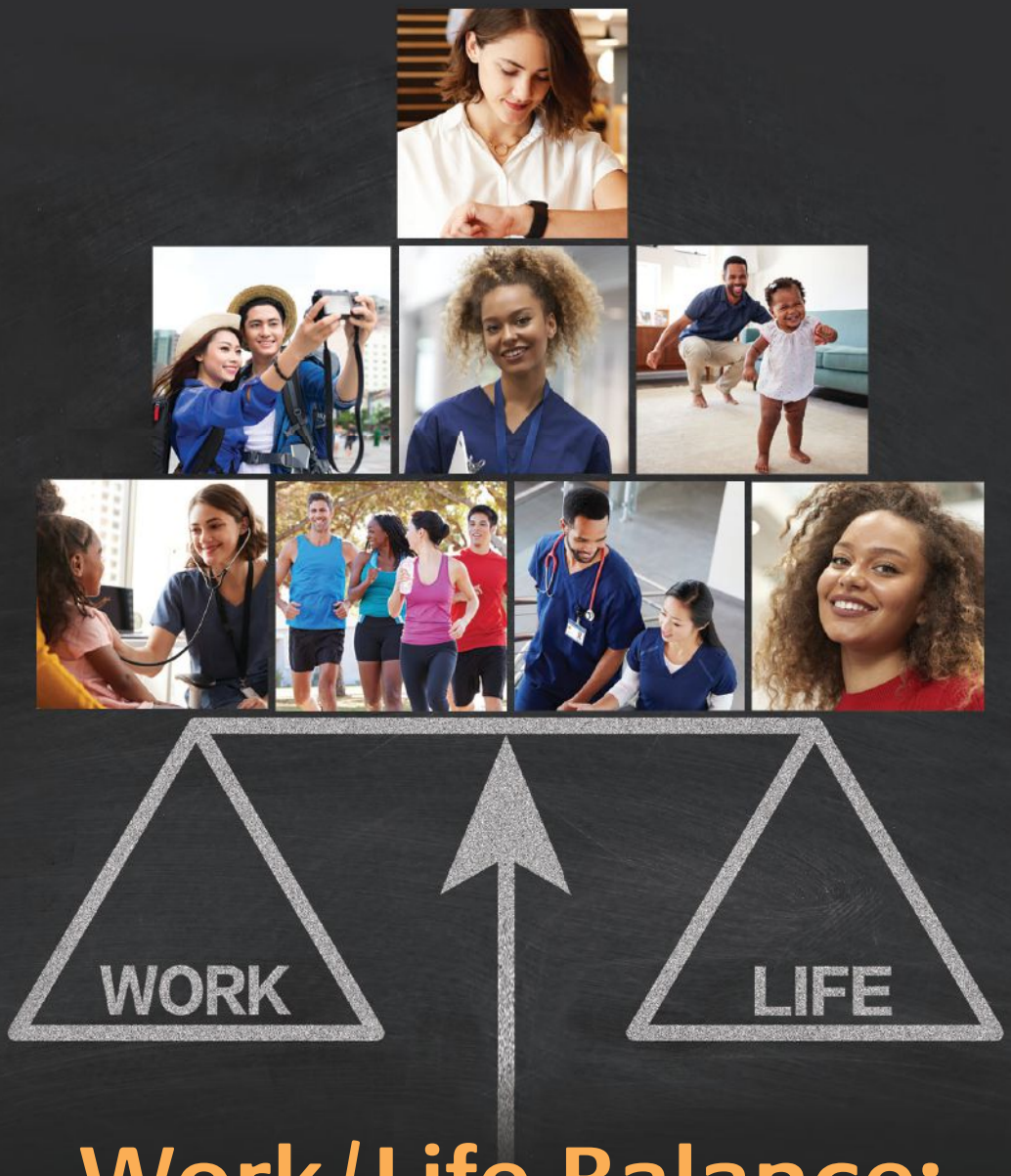


Work/Life Balance:
What Millennials Want

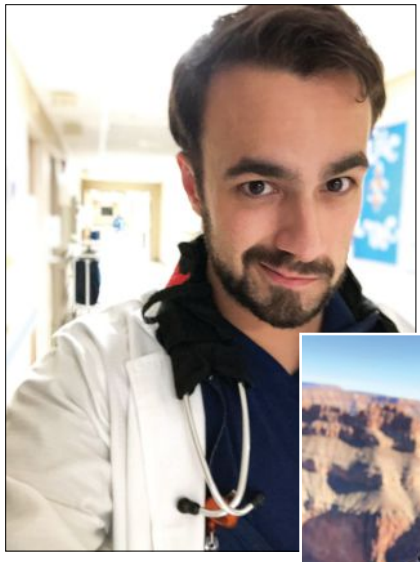
Younger employees insist their personal needs are just as important as the needs of their employers

by Debbie Bunch

According to the Pew Research Center, Millennials now make up the largest share of the U.S. workforce.[1] Overall, one in three Americans working today is a member of this generation, defined by Pew Research as those born between 1981 and 1996, and at 56 million strong, they, like all the other generations who came before them, are going to be redefining workplace norms. At the top of their list is work/life balance. Indeed, a survey of 5,000 Millennials conducted last fall by the recruiting firm LaSalle Network found that three

out of four of these young people would be open to seeking a new job should their current one fail to meet their needs.[2] A 2016 Millennial survey conducted by Deloitte found that people in this generation value work/life balance more than any other job characteristic — including job progression.[3]

What do AARC members who fall into the Millennial generation think about work/life balance? We decided to find out.



Tyler Keene believes RT departments need a reasonable PRN pool to allow for staff vacations and time off.

Vortex of time

"To me, work/life balance is making sure that my life doesn't get overrun by the needs of the department," says Tyler Keene, RRT, RRT-ACCS, RRT-NPS. "One of my early mentors told me that it's important to get perspective; we love our jobs, the people we work with, our patients, and the excitement, but ultimately we're at work to support the meaningful parts of life such as family, friends, and experiences."

Keene says having a job in a setting like health care where the work goes on 24/7/365 can definitely throw up some roadblocks when it comes to achieving work/life balance. With shifts that vary, it can be hard to schedule family trips and plan for the holidays, and working long shifts can make him feel as if he's been out of touch with too many other things for too long. "It's the difference between being part of the world, and watching the world go by; the ability to participate versus hearing about it tomorrow," he says. "It can feel like living in a vortex of time — when the rotation is complete, you may not realize how much has passed or what you missed."

Steven Ling-Duan loves his job, but his free time is important to him too.

For Steven Ling-Duan, RRT, work/life balance means having the time to pursue his hobbies outside of work without worrying about what may be happening at work. Even though he isn't overburdened with family responsibilities — he and his wife are just now thinking about having kids and moving to a larger home — and he doesn't have student loans or other big expenditures on his plate, that balance is necessary for him to maintain the quality of life he wants to maintain. "I value my leisure activity a lot," he says.

Nonnegotiable

For Danielle Just, RRT, work/life balance is really essential right now. As a single mom, she says it can be a challenge to put in a full day at work then come home to another full scope of duties. "Work/life balance to me means I work enough to afford the lifestyle that I want while still being able to enjoy the lifestyle I've created," says Just.

Because she works in neonatal/pediatric respiratory care, part of the issue is being able to leave all of the emotional aspects of the job at work so she can focus on her own child. "I give my patients everything that I would give my own child," she says. "So when I come home from work, I am mentally exhausted and fatigued. That can become stressful when your child has high demands and you are the only person they can turn to get the attention they need." On her days off, she wants to be fully there and undistracted — not dealing with work issues.

Family life is top of mind for Rachel McGrath, BSRT, RRT, too. In fact, she stepped out of the workforce for two years because she couldn't find a job that would allow her to be at home with her young daughter. She's back now, working PRN as a case manager. "My family is my top

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FOR THE DAILY STRUGGLES OF COPD

The FIRST AND ONLY once-daily nebulized LAMA, for a full 24 hours of lung function improvement[1]

Proven 24-hour control[1]
Consistent improvement in trough FEV_1 vs placebo over 24 hours on days 84/85[1,2]

In studies 1 and 2, a prespecified exploratory analysis using serial spirometry was performed on a substudy population (YUPELRI, n=89; placebo, n=83) over 24 hours on days 84/85. In a pooled analysis, YUPELRI demonstrated consistent improvement in trough FEV_1 vs placebo over the 24-hour period.

In study 1, LS mean changes from baseline in FEV_1 ranged from 55.8 mL to 240.4 mL in the YUPELRI group, and from -113.6 mL to 59.6 mL in the placebo group. In study 2, LS mean changes from baseline in FEV_1 ranged from 19.8 mL to 148.5 mL in the YUPELRI group, and from -176.4 mL to -13.0 mL in the placebo group.

Demonstrated safety profile[1]
Refer to the Important Safety Information below for additional information

Once-daily dosing[1]
Administered with any standard jet nebulizer with a mouthpiece

Up to 100% of patients with Medicare Part B are expected to be covered
Miscellaneous J-CODE J7699*

The primary endpoint was change from baseline in trough (predose) FEV_1 at day 85 vs placebo: YUPELRI demonstrated a statistically significant difference vs placebo in Study 1 (146 mL, *P*<.0001 [YUPELRI, n=189; placebo, n=191]) and Study 2 (147 mL, *P*<.0001 [YUPELRI, n=181; placebo, n=187]).[1,2]

*Miscellaneous J-CODE listed above can be used for YUPELRI until CMS assigns a permanent code.

Indication

YUPELRI® inhalation solution is indicated for the maintenance treatment of patients with chronic obstructive pulmonary disease (COPD).

Important Safety Information

YUPELRI is contraindicated in patients with hypersensitivity to revefenacin or any component of this product.

YUPELRI should not be initiated in patients during acutely deteriorating or potentially life-threatening episodes of COPD, or for the relief of acute symptoms, i.e., as rescue therapy for the treatment of acute episodes of bronchospasm. Acute symptoms should be treated with an inhaled short-acting $beta_2$-agonist.

As with other inhaled medicines, YUPELRI can produce paradoxical bronchospasm that may be life-threatening. If paradoxical bronchospasm occurs following dosing with YUPELRI, it should be treated immediately with an inhaled, short-acting bronchodilator. YUPELRI should be discontinued immediately and alternative therapy should be instituted.

YUPELRI should be used with caution in patients with narrow-angle glaucoma. Patients should be instructed to immediately consult their healthcare provider if they develop any signs and symptoms of acute narrow-angle glaucoma, including eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema.

Worsening of urinary retention may occur. Use with caution in patients with prostatic hyperplasia or bladder-neck obstruction and instruct patients to contact a healthcare provider immediately if symptoms occur.

Immediate hypersensitivity reactions may occur after administration of YUPELRI. If a reaction occurs, YUPELRI should be stopped at once and alternative treatments considered.

The most common adverse reactions occurring in clinical trials at an incidence greater than or equal to 2% in the YUPELRI group, and higher than placebo, included cough, nasopharyngitis, upper respiratory infection, headache and back pain.

Coadministration of anticholinergic medicines or OATP1B1 and OATP1B3 inhibitors with YUPELRI is not recommended.

YUPELRI is not recommended in patients with any degree of hepatic impairment.

Please see Brief Summary of Full Prescribing Information on the adjacent pages.

Learn more at YUPELRIHCP.com

References: 1. YUPELRI [package insert]. Morgantown, WV: Mylan Specialty L.P.; Nov 2018. **2.** Data on file, Mylan Specialty L.P.

Mylan® Theravance Biopharma

YUPELRI® (revefenacin)
Inhalation solution, for oral inhalation
Initial U.S. Approval: 2018

INDICATIONS AND USAGE

YUPELRI (revefenacin) inhalation solution is indicated for the maintenance treatment of patients with chronic obstructive pulmonary disease (COPD).

CONTRAINDICATIONS

YUPELRI is contraindicated in patients with hypersensitivity to revefenacin or any component of this product.

WARNINGS AND PRECAUTIONS

Deterioration of Disease and Acute Episodes

YUPELRI should not be initiated in patients during acutely deteriorating or potentially life-threatening episodes of COPD. Revefenacin has not been studied in subjects with acutely deteriorating COPD. The initiation of revefenacin in this setting is not appropriate.

YUPELRI is intended as a once-daily maintenance treatment for COPD and should not be used for relief of acute symptoms, i.e. as rescue therapy for the treatment of acute episodes of bronchospasm, and extra doses should not be used for that purpose. Acute symptoms should be treated with an inhaled, short-acting beta$_2$-agonist.

COPD may deteriorate acutely over a period of hours or chronically over several days or longer. If YUPELRI no longer controls symptoms of bronchoconstriction, the patient's inhaled, short-acting beta$_2$-agonist becomes less effective, or the patient needs more inhalations of a short-acting beta$_2$-agonist than usual, these may be markers of deterioration of disease. In this setting, a re-evaluation of the patient and the COPD treatment regimen should be undertaken at once. Increasing the daily dose of YUPELRI beyond the recommended dose is not appropriate in this situation.

Paradoxical Bronchospasm

As with other inhaled medicines, YUPELRI can produce paradoxical bronchospasm that may be life-threatening. If paradoxical bronchospasm occurs following dosing with YUPELRI, it should be treated immediately with an inhaled, short-acting bronchodilator; YUPELRI should be discontinued immediately and alternative therapy should be instituted.

Worsening of Narrow-Angle Glaucoma

YUPELRI should be used with caution in patients with narrow-angle glaucoma. Prescribers and patients should be alert for signs and symptoms of acute narrow-angle glaucoma (e.g. eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema). Instruct patients to consult a physician immediately if any of these signs or symptoms develops.

Worsening of Urinary Retention

YUPELRI should be used with caution in patients with urinary retention. Prescribers and patients should be alert for signs and symptoms of urinary retention (e.g. difficulty passing urine, painful urination), especially in patients with prostatic hyperplasia or bladder-neck obstruction. Instruct patients to consult a healthcare provider immediately if any of these signs or symptoms develops.

Immediate Hypersensitivity Reactions

Immediate hypersensitivity reactions may occur after administration of YUPELRI. If such a reaction occurs, therapy with YUPELRI should be stopped at once and alternative treatments should be considered.

ADVERSE REACTIONS

The following potential adverse reactions are described in greater detail in other sections:

- Paradoxical bronchospasm *[see Warnings and Precautions]*
- Worsening of narrow-angle glaucoma [see Warnings and *Precautions]*
- Worsening of urinary retention *[see Warnings and Precautions]*
- Immediate hypersensitivity reactions *[see Warnings and Precautions]*

Clinical Trial Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

The revefenacin safety database included 2,285 subjects with COPD in two 12-week efficacy studies and one 52-week long-term safety study. A total of 730 subjects received treatment with revefenacin 175 mcg once daily. The safety data described below are based on the two 12-week trials and the one 52-week trial.

12-Week Trials

YUPELRI was studied in two 12-week replicate placebo-controlled trials in patients with moderate to very severe COPD (Trials 1 and 2). In these trials, 395 patients were treated with YUPELRI at the recommended dose of 175 mcg once daily.

The population had a mean age of 64 years (range from 41 to 88 years), with 50% males, 90% Caucasian, and had COPD with a mean post-bronchodilator forced expiratory volume in one second (FEV1) percent predicted of 55%. Of subjects enrolled in the two 12-week trials, 37% were taking concurrent LABA or ICS/LABA therapy. Patients with unstable cardiac disease, narrow-angle glaucoma, or symptomatic prostatic hypertrophy or bladder outlet obstruction were excluded from these trials.

Table 1 shows the most common adverse reactions that occurred with a frequency of greater than or equal to 2% in the YUPELRI group and higher than placebo in the two 12-week placebo controlled trials.

The proportion of subjects who discontinued treatment due to adverse reactions was 13% for the YUPELRI-treated subjects and 19% for placebo-treated subjects.

Table 1: Adverse Events with YUPELRI ≥2% Incidence and Higher than Placebo

	Placebo (N = 413)	YUPELRI 175 mcg (N = 395)
Respiratory, Thoracic and Mediastinal Disorders		
Cough	17 (4%)	17 (4%)
Infections and Infestations		
Nasopharyngitis	9 (2%)	15 (4%)
Upper respiratory tract infection	9 (2%)	11 (3%)
Nervous System Disorders		
Headache	11 (3%)	16 (4%)
Musculoskeletal and Connective Tissue Disorders		
Back pain	3 (1%)	9 (2%)

Other adverse reactions defined as events with an incidence of ≥1.0%, less than 2.0%, and more common than with placebo included the following: hypertension, dizziness, oropharyngeal pain and bronchitis.

52-Week Trial

YUPELRI was studied in one 52-week open-label active control (tiotropium 18 mcg once daily) trial in 1,055 patients with COPD. In this trial, 335 patients were treated with YUPELRI 175 mcg once daily and 356 patients with tiotropium. The demographic and base-line characteristics of the long-term safety trial were similar to those of the placebo-controlled 12-week studies described, with the exception that concurrent LABA or LABA/ICS therapy was used in 50% of patients. The adverse reactions reported in the long-term safety trial for YUPELRI were consistent with those observed in the placebo controlled studies of 12-weeks.

DRUG INTERACTIONS

Anticholinergics

There is potential for an additive interaction with concomitantly used anticholinergic medicines. Therefore, avoid coadministration of YUPELRI with other anticholinergic-containing drugs as this may lead to an increase in anticholinergic adverse effects *[see Warnings and Precautions]*.

Transporter-Related Drug Interactions

OATP1B1 and OATP1B3 inhibitors (e.g. rifampicin, cyclosporine, etc.) could lead to an increase in systemic exposure of the active metabolite. Therefore, coadministration with YUPELRI is not recommended *[see Clinical Pharmacology]*.

USE IN SPECIFIC POPULATIONS

Pregnancy

Risk Summary

There are no adequate and well-controlled studies with YUPELRI in pregnant women. Women should be advised to contact their physician if they become pregnant while taking YUPELRI. In animal reproduction studies, subcutaneous administration of revefenacin to pregnant rats and rabbits during the period of organogenesis produced no evidence of fetal harm at respective exposures approximately 209 times the exposure at the maximum recommended human dose (MRHD) (on an area under the curve [AUC] basis) *(see Data)*.

The estimated background risk of major birth defects and miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

Data

Animal Data

In an embryo-fetal development study in pregnant rats dosed during the period of organogenesis from gestation days 6 to 17, revefenacin was not teratogenic and did not affect fetal survival at exposures up to 209 times the MRHD (based upon summed AUCs for revefenacin and its active metabolite at maternal subcutaneous doses up to 500 mcg/kg/day).

In an embryo-fetal development study in pregnant rabbits dosed during the period of organogenesis from gestation days 7 to 19, revefenacin was not teratogenic and did not affect fetal survival at exposures up to 694 times the MRHD (based upon summed AUCs for revefenacin and its active metabolite at maternal subcutaneous doses up to 500 mcg/kg/day).

Placental transfer of revefenacin and its active metabolite was observed in pregnant rabbits.

In a pre- and postnatal development (PPND) study in pregnant rats dosed during the periods of organogenesis and lactation from gestation day 6 to lactation day 20, revefenacin had no adverse developmental effects on pups at exposures up to 196 times the MRHD (based upon summed AUCs for revefenacin and its active metabolite at maternal subcutaneous doses up to 500 mcg/kg/day).

Lactation

Risk Summary

There is no information regarding the presence of revefenacin in human milk, the effects on the breastfed infant, or the effects on milk production. However, revefenacin was present in the milk of lactating rats following dosing during pregnancy and lactation *(see Data)*.

The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for YUPELRI and any potential adverse effects on the breastfed infant from YUPELRI or from the underlying maternal condition.

Data

Animal Data

In a PPND study revefenacin and its active metabolite were present in milk of lactating rats on lactation day 22. Milk-to-plasma concentration ratios were up to 10 for revefenacin and its active metabolite.

Pediatric Use

YUPELRI is not indicated for use in children. The safety and efficacy in pediatric patients have not been established.

Geriatric Use

Based on available data, no adjustment of the dosage of YUPELRI in geriatric patients is necessary.

Clinical trials of YUPELRI included 441 subjects aged 65 years and older, and, of those, 101 subjects were aged 75 years and older. No overall differences in safety or effectiveness were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

Hepatic Impairment

The systemic exposure of revefenacin is unchanged while that of its active metabolite is increased in subjects with moderate hepatic impairment. The safety of YUPELRI has not been evaluated in COPD patients with mild-to-severe hepatic impairment. YUPELRI is not recommended in patients with any degree of hepatic impairment. *[see Clinical Pharmacology]*.

Renal Impairment

No dosage adjustment is required in patients with renal impairment. Monitor for systemic antimuscarinic side effects in COPD patients with severe renal impairment. *[see Clinical Pharmacology]*.

OVERDOSAGE

An overdose of YUPELRI may lead to anticholinergic signs and symptoms such as nausea, vomiting, dizziness, lightheadedness, blurred vision, increased intraocular pressure (causing pain, vision disturbances, or reddening of the eye), obstipation or difficulties in voiding. In COPD patients, orally inhaled administration of YUPELRI at a once-daily dose of up to 700 mcg (4 times the maximum recommended daily dose) for 7 days was well tolerated.

Treatment of overdosage consists of discontinuation of YUPELRI along with institution of appropriate symptomatic and/or supportive therapy.

NONCLINICAL TOXICOLOGY

Carcinogenesis, Mutagenesis, Impairment of Fertility

Two-year inhalation studies in Sprague-Dawley rats and CD1 mice were conducted to assess the carcinogenic potential of revefenacin. No evidence of tumorigenicity was observed in male and female rats at inhaled doses up to 338 mcg/kg/day (approximately 35 times the MRHD based upon summed AUCs for revefenacin and its active metabolite). No evidence of tumorigenicity was observed in male and female mice at inhaled doses up to 326 mcg/kg/day (approximately 40 times the MRHD based on summed AUCs for revefenacin and its active metabolite).

Revefenacin and its active metabolite were negative for mutagenicity in the Ames test for bacterial gene mutation. Revefenacin was negative for genotoxicity in the *in vitro* mouse lymphoma assay and *in vivo* rat bone marrow micronucleus assay.

There were no effects on male or female fertility and reproductive performance in rats at subcutaneous revefenacin doses up to 500 mcg/kg/day (approximately 30 times the MRHD on an mg/m2 basis for revefenacin).

PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Medication Guide and Instructions for Use) with each new prescription and refill.

Not for Acute Symptoms

Inform patients that YUPELRI is not meant to relieve acute symptoms of COPD and extra doses should not be used for that purpose. Advise patients to treat acute symptoms with an inhaled, short-acting beta$_2$-agonist such as albuterol. Provide patients with such medicine and instruct them in how it should be used.

Instruct patients to seek medical attention immediately if they experience any of the following:

- Decreasing effectiveness of inhaled, short-acting beta$_2$-agonists
- Need for more inhalations than usual of inhaled, short-acting beta$_2$-agonists
- Significant decrease in lung function as outlined by the physician

Tell patients they should not stop therapy with YUPELRI without healthcare provider guidance since symptoms may recur after discontinuation.

Paradoxical Bronchospasm

As with other inhaled medicines, YUPELRI can cause paradoxical bronchospasm. If paradoxical bronchospasm occurs, instruct patients to discontinue YUPELRI.

Worsening of Narrow-Angle Glaucoma

Instruct patients to be alert for signs and symptoms of acute narrow-angle glaucoma (e.g. eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema). Instruct patients to consult a healthcare provider immediately if any of these signs or symptoms develops.

Worsening of Urinary Retention

Instruct patients to be alert for signs and symptoms of urinary retention (e.g. difficulty passing urine, painful urination). Instruct patients to consult a healthcare provider immediately if any of these signs or symptoms develops.

Instructions for Administering YUPELRI

It is important for patients to understand how to correctly administer YUPELRI using a standard jet nebulizer [see Instructions for Use]. Instruct patients that YUPELRI should only be administered via a standard jet nebulizer. Patients should be instructed not to inject or swallow the YUPELRI solution. Patients should be instructed not to mix other medications with YUPELRI.

Patients should not inhale more than one dose at any one time. The daily dosage of YUPELRI should not exceed one unit-dose vial. Inform patients to use the contents of one vial of YUPELRI inhaled orally daily at the same time every day. Patients should throw the plastic dispensing vials away immediately after use. Due to their small size, the vials pose a danger of choking to young children.

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With a little one at home, right now family is priority number one for Rachel McGrath.

priority," she says. "Having an employer that allowed me to balance both my worlds — personal and professional — positively contributed to my emotional health."

McGrath knows she's lucky that she doesn't have to work full time right now, and she emphasizes that when she is at work she is fully engaged and on point. But she is not willing to put her work schedule above personal responsibilities such as worship, family life, and volunteer activities. "I would rather stay unemployed, and wait for the right opportunity to come along, than accept a position with a rigid schedule," says McGrath.

With two young children — one of them with type 1 diabetes and the other heavily into dance competitions — work/life balance for Megan Keith, BSRT, RRT, RRT-ACCS, means having time to spend on family matters as well. "Being able to balance and schedule everything is a big key for me," she says. But she also sees the opposite side of the coin, noting that work/life balance doesn't just mean having plenty of quality time for life. It means investing plenty of quality time in work, too. "I define 'work/life balance' as being able to go home and not worry about issues at work, but also the opposite," she says. "Being able to be at work and not worry about issues at home." Having a husband who works closer to home than she does and is willing to help out with the kids is definitely a big plus. And she emphasizes that her department offers a lot of flexibility, too, which allows her to be present for doctor's appointments, dance competitions, and other kid activities. "My department is great at working with our schedules to make sure we get what we need," she says.

Megan Keith is passionate about caring for her patients, but with two kids -- one with type 1 diabetes -- she needs plenty of workplace flexibility to keep all her balls in the air.

It's all about staffing

What do these Millennials think employers should be doing to provide a better work/life balance to people in their generation — and other generations as well? Number one on the list is making sure they have enough staff available so that the time-off needs of everyone on staff can, for the most part, be accommodated.

"In general having a larger back-up staff to pull from helps so that staff isn't always working overtime or enduring mandatory OT or on-call shifts," says Just. While she emphasizes this is a slippery slope — she does appreciate the chance to pick up PRN shifts when it fits her schedule — she says that having adequate staffing could solve a lot of problems when it comes to work/life balance.

McGrath suggests that employers develop more of an open mind about scheduling issues faced by their staff and institute greater flexibility. When she was seeking out a more flexible arrangement so that she could be at home with her daughter, she came across one hospital that was sorely in need of RTs but was not willing to even consider hiring any part-timers. "I called to speak with the department head on more than one occasion," she says. "But there was no willingness to budge on the full-time schedule. One would think that additional part-time support is better than no new support at all. But there was no flexibility — so I didn't pursue the job."

Scheduling and staffing are the biggest determinants for work/life balance, agrees Tyler Keene, regardless of the size of the hospital or the department. "For scheduling, finding the balance between a reliable framework that is predictable, but allowing flexibility

to work around schedules, is key," he says. "Having a reasonable PRN pool to allow vacation and time off really makes a difference, because this addresses multiple issues."

As a district co-director and chair of the Media Committee at her state society, Keith regularly networks with people around her state and says staffing does seem to be the universal issue at play. When departments are understaffed, people end up overworked, and then they pick up extra shifts to help out, and the "life" part of work/life balance suffers. At the big hospital she works for, committee meetings and the like often take place on days off as well, so that only adds to the pressure. "Once you do you have a day off, you have to spend at least one day recuperating and get nothing done," she says.

Ling-Duan says constant heavy workloads are draining, both physically and emotionally, and RT departments simply need to hire more staff to prevent unduly heavy workloads. Aside from instituting measures to ensure no one has to work more hours than they believe are necessary for them to achieve work/life balance, he suggests departments do more to improve the quality of life for RTs while they are at work.

A mentorship program for new hires, where they are paired with another RT staff member, could work wonders. "Some studies show that having a 'best friend' at work is the greatest factor in increasing retention rates," says Ling-Duan. He'd also like to see a greater emphasis placed on interdisciplinary training between RNs and RTs.

Baked-in mentality?

Of course, these young people also know that hospitals and departments face challenges when it comes to creating the work/life balance their workers so desire. Says Ling-Duan, "Hospitals need a better budget to take care of their staff. It's nice to get the occasional gift during Hospital Week, RC Week, or Christmas, but I would rather have the staff be less overworked during flu season."

According to Keith, hospitals also need to realize that sometimes therapists have to put in many extra hours outside of work to reach their professional goals. That's what she had to do to earn her BSRT degree, which she received last spring, and now she's enrolled in a master's degree program and is doing it all over again. "Our profession is great because you can start with an associate's degree and take it as far as you want. BSRT? Sure. MSc. Sure. Advanced credentials? Sure," she says. "It's all about how far you personally want to go."

Keene circles back to staffing as the key problem, noting that a small PRN pool makes it difficult not only to meet time off needs but also to provide the staff training necessary to ensure quality care. In a 24/7/365 world, there is always going to be room for improvement. "Finding a fair method for holidays and vacation requests will always be difficult because there are multiple staff members, each with different priorities, needs, and circumstances," he says.

McGrath believes there is a sort of baked-in mentality at work as well. "Traditionally, employers have not cared about the personal lives of their employees," she says. "Their focus is on getting their workloads done in an efficient, cost-effective way. To them, work is the first priority and they expect their RTs to fall in line to complete the task."

Just says that managers need to step up their game to help. "Large workloads lead to quick burnout and disgruntled staff," she says. "Management getting into the trenches with their staff is always a bonus. It has always made me want to work harder when I see my management team giving their time to help the staff."

She believes streamlining the care-giving process by giving therapists greater autonomy in what they do could work wonders, too. "If I can, as a therapist, make changes to improve my patients' treatment and/or outcomes without having to ask for everything, then I can accomplish more in a shorter amount of time," says Just.

Worth the cost

So, what would hospitals and departments get out of the creation of better work/life balance? More productive staff members who are less likely to leave, say these Millennials.

"I think it's great for any generation to be able to have a 'work' you and a 'home' you," says Keith. She believes departments that allow this to happen will benefit in the long run because their staff will be happier, healthier, and better able to take care of patients. "No one wants a burned-out employee who has gone beyond caring — it's not safe, especially for patients," she says. Avoid burnout and she says you're less likely to end up with constant frequent turnover, too — another thing that isn't safe for patients or good for the hospital's bottom line.

"The biggest reward for me having a better work/life balance is that I am more willing to come in and help out when needed," says Just. "I don't complain on my tougher days because I know that I have a great team

that surrounds and supports me in the overall mission of saving lives. I am happier and go above and beyond my unique calling to ensure my patients have a good experience, even if they are going through a bad time right now."

Keene believes that the better employee retention that would result from improving work/life balance would bode well not only for the department but for the hospital and, most importantly, the patients it serves. "Morale in the department has a major effect on the smooth function of day-to-day operation, and when that balance is improved, people will work harder, give more, and present a better face for the whole organization," he says. "People in my generation are more willing to seek other opportunities when work/life balance suffers."

Ling-Duan echoes those sentiments, noting that while he loves where he works now, if things were to go south, he wouldn't hesitate to look around. "I would have no problem jumping ship if things would become intolerable at my current hospital," he says.

It's all about the cost-benefit ratio, says McGrath, and in this case, the scales are firmly tilted toward work/life balance. "Happy employees ideally means improved work performances — which hopefully results in better patient satisfaction and outcomes," she says. "It might result in sacrifice for the employer, but they have to determine long-term priorities for their departments and for the field of respiratory care itself."

Read on...

So that's what Millennial AARC members think about work/life balance. What do RT managers think, and more importantly, what are they doing to provide it? Read our companion article to find out. ■

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Work/Life Balance: What Managers Are Doing

Millennials are demanding more flexibility on the job. Managers are working hard to make that happen.

by Debbie Bunch

The Millennial generation is famous for valuing its free time, and now that these young people are fully entrenched in the workforce, it's becoming clear to their employers that keeping them happy will mean ensuring their work responsibilities do not overly encroach on their personal lives. RT managers, who in many cases are members of previous generations who put a high value on work *over* life, are having to adapt to this new mindset, and it hasn't always been easy.

They want to be comfortable

Becky Renton, MHA, BHS-RT, RRT, manages pulmonary services, respiratory therapy, and bronchoscopy at a large hospital in Illinois. She says younger RTs at her hospital want to work their three 12-hour shifts per week, earning enough money for a comfortable lifestyle with zero to minimal overtime while having plenty of time to devote to friends, family, and leisure pursuits. They want her to be understanding and work around their time-off needs, and they desire a work environment that is supportive

and features coworkers who work as hard as they do to ensure everyone is treated equally.

What's worked at best for Renton is to give her staff set schedules, but to allow those schedules to be fluid to meet the needs of the department. "I post schedules at a minimum of four weeks in advance," she says. "Each schedule runs for six weeks." She closes requests for changes two weeks before the schedule is due to be posted, thus giving the team ample opportunity to get in their requests. She also makes sure full-time and part-time staff alike only work every other weekend, and all staff members are allowed one "free" weekend per fiscal year where they can request off without having to find anyone to cover for them. The hospital also allows for a 3% unscheduled absence rate within a rolling 12-month period, and Renton rewards staff with an unscheduled absence rate of 1.5% or less with an additional "free" weekend per year.

"My group of Millennials want their days grouped together, and they also want to pick these days," says Lori Arnold, BA, RRT, who manages a small department in Wyoming. She tried self-scheduling, but it didn't work out well, so she has gone back to doing the schedule herself. It's been a challenge to meet everyone's needs. Staff all seem to want the same days off, and in the case of Millennials with young families, they want to schedule not just certain days, but certain shifts as well. "It is hard to always accommodate this, but I do my best," says Arnold. Her efforts are not always appreciated. "I have had complaints that I am not flexible enough and do not allow for more than one person to take paid time off at a time, but again, we are a small department in a rural area that doesn't have a large pool of therapists to pull from," she says.

Jenny Withers, BS, RRT, has faced a similar situation at her small hospital in Utah. "They do not want any overtime," she says of her Millennial RTs. "They like their three 12's and that's it." When she needs people to step up and work overtime due to a sick call or other sudden need, she has come to expect they'll say no. Her solution has been to hire more PRNs but to keep the relationship with them fairly unstructured due to the uncertain needs in her department. "I have hired more PRNs to help and do not have requirements for those PRNs in case they are not needed for some time," she says.

Brownie points for trying

Jay Bauer, BSRT, RRT, is director of respiratory therapy and rehab services at a larger hospital in North Dakota, and he says the Millennials in his department are generally not that demanding. However, staffing is the one exception. "The one request is that they are not here 40 hours per week," he says. But since he staffs three 12-hour shifts, that's fairly easy to accommodate, and when he can't, they are understanding. "They are positive and receptive to the things I can or cannot give them," says Bauer. "If I cannot grant a request or accommodation, the Millennials are more than willing to accept the denial."

Bauer works hard to give the Millennials on his staff three shifts in a row when they ask for them. This allows them to have almost a week off in between shifts and does wonders for work/life balance. "Easy to accommodate most of the time, and I have been in that situation myself, so I know what it is like having work stretches broken up," he says.

Scheduling is the number one issue faced by Laura Lewis, MBA-HM, BSRT, RRT, as well. The respiratory care manager at a relatively new hospital in Utah says her Millennials want to make sure they have time off for the things that matter to them outside of work, and she has collaborated with them to find a way forward. Using social media has really helped.

"We all worked together to come up with schedule templates for everyone that will meet their needs, for the most part, and then we have a private Facebook group where they can ask for trades or help covering a shift," she says. "They check Facebook so much more often than they would check their work email, so it speeds up the shift-trade process." She says the private Facebook group has also proven to be a great place to provide recognition and thanks to the staff.

Christopher Reese, RRT, is the manager of a small department in Ohio, and Millennials now make up about half his staff. Scheduling is an issue there, too, but he says it's always been that way. "Our staff have set, six-week rotation schedules, and it is very difficult to attempt any permanent changes," he says. "We also share staff with a larger hospital, and in the past, this larger hospital could pull from our staff to better cover their needs."

While that's eased up somewhat — he says today his department can ensure their own coverage is adequate before sending staff to the other facility — mistrust and misunderstandings can still occur when staff must float to the larger hospital, and that leads to issues, especially with Millennials.

He has created a unit council that meets to identify and offer solutions to work/life balance issues. The council isn't just for Millennials, of course, but the younger staff members initially seemed more inclined to participate. Now older staff are also getting on board. "Management has made many changes in the operations of our department since the inception of the

unit council, which I believe showed the older therapists our commitment to improving the work/life balance of all therapists," says Reese.

Seeking out the good

Clearly, Millennials' attitudes can sometimes pose challenges for managers more accustomed to work ethics of the past. But despite their demands for work/life balance, these managers believe there's more good than bad in this generation of young people. You just have to seek it out.

"Work with them," urges Bauer. "They are bright, energetic individuals who are more open to change than the others." In his experience, Millennials come to the table with fresh eyes, and you don't have to overcome the "this is how we've always done it" mindset when asking them to implement new policies or procedures. In fact, they relish the idea of something new and better that will help them improve patient care. "They are the future of health care and are always thinking of how to be more efficient or how to streamline processes that have been in existence for years," Bauer says. While they do want time to devote to their personal lives, he has found they are actually less likely than older generations to complain about how busy they are at work.

Managers should "encourage employee engagement, and be flexible to try new ideas and avoid saying 'we can't do that,'" advises Reese. The ideas brought forth by Millennials may not always pan out — he recalls one instance where his unit council decided to add an extra "holiday" to the schedule to allow more people to take the "eves" of major holidays off, but that ultimately didn't pan out — but allowing those ideas to come forward will improve employee satisfaction. "The culture changes within our department have created more trust between management and staff," he says. "I feel our staff are now more committed to the success of our department."

Lewis agrees, noting that Millennials have some great ideas, especially where their own work/life balance is concerned. "Talk to them," she recommends. "Ask them what matters to them most and do whatever is in your power to make it happen," she advises.

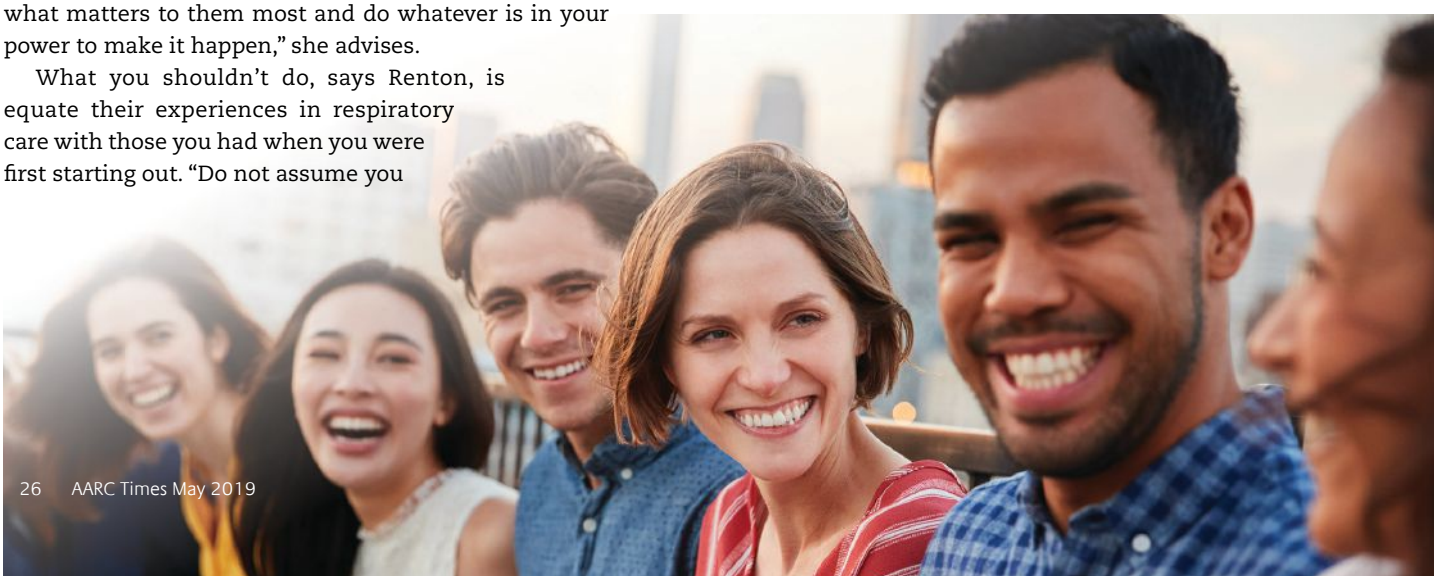
What you shouldn't do, says Renton, is equate their experiences in respiratory care with those you had when you were first starting out. "Do not assume you know what they want simply because you used to be in their shoes as a bedside clinician," she says. "You never truly know someone else's story unless you take the time to sit down with them and really hear what they have to say." She believes it's better to reach out to Millennials and get to know them so that you can truly understand where they are coming from with their work/life balance wants and needs.

Withers agrees. "Get to know them on a personal level to know what makes them tick," she says. "Know their hobbies and find something to connect to them with." For example, she now hosts a department-wide ski day in the winter and a mountain biking day in the summer for anyone who wants to attend. While they are open to all staffers, the Millennials are generally the ones who participate.

Of course, managers have to keep their eye on the most important ball at all times, too, and that sets them up for a balancing act of their own. "Remember that work/life balance is an important issue for Millennials, but also remember our ultimate goal is patient care and safety," stresses Arnold. Reconciling the need for high-quality care with a workforce so strongly focused on work/life balance can be a real challenge, especially when that workforce has no qualms about leaving to find it. "They feel that staying for longer than two years is a terribly long commitment," says Arnold. "This group is looking for benefits that are conducive to their lifestyle."

Worker friendly

The Millennial drive to balance work and life may be a new concept for many RT managers, but it is one that isn't going anywhere anytime soon. All generations have had to adapt to the generations coming up behind them, and the Baby Boomer and Gen X managers out there today are going to have to do the same. As the managers in this article illustrate, they're working on it — and the end result may just end up being a workplace environment that is much friendlier to all. ■



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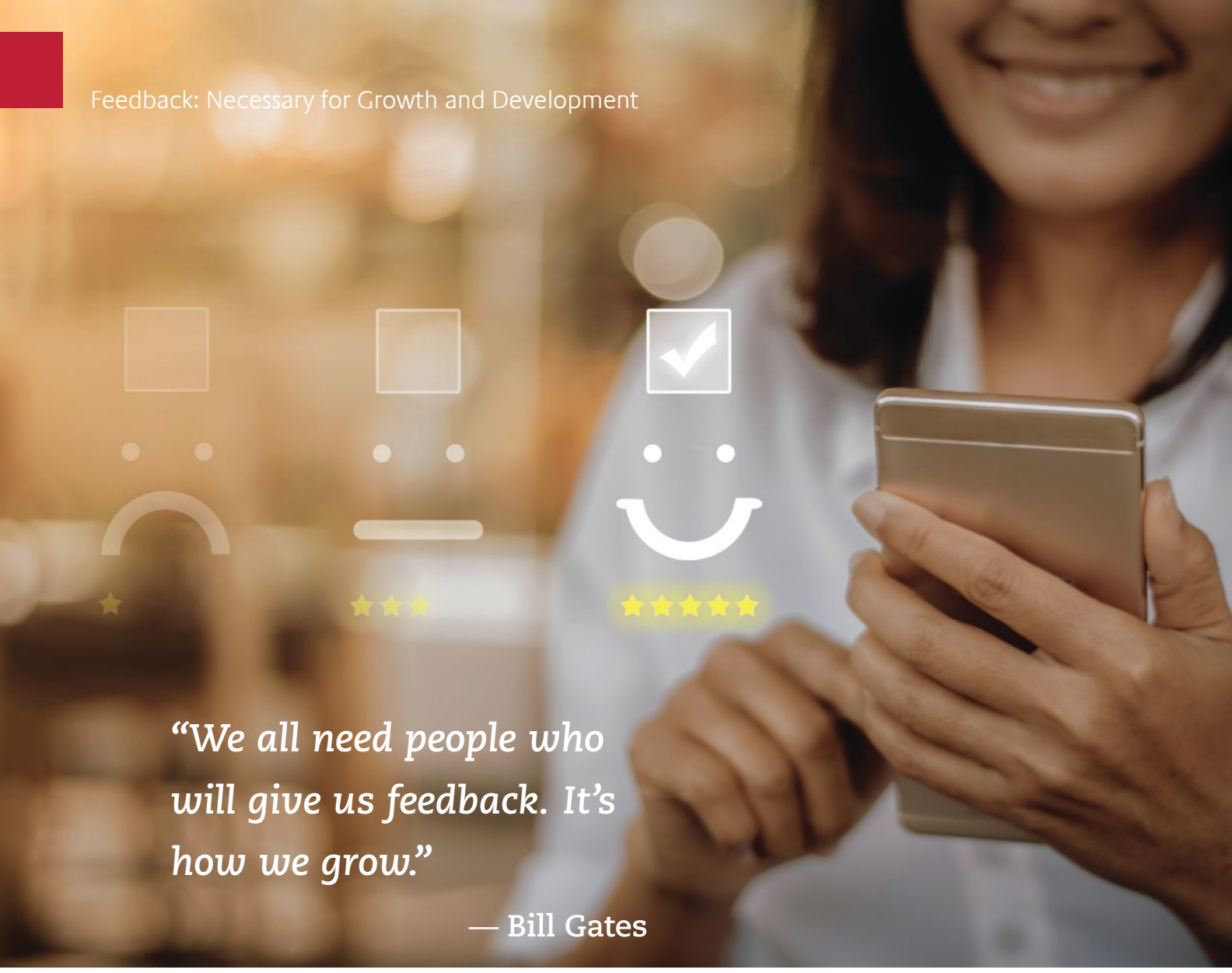


Feedback Isn't a Dirty Word

by Dana Evans, MHA, RRT, RRT-NPS

We are constantly receiving feedback. We get feedback at work and at home, from peers, leaders, patients, partners, family members, and friends. Feedback may be presented in the form of a formal review, coaching, or quick comments. Whether you work at the bedside or in the boardroom, we need this information to learn, grow, and solve problems.

Unfortunately, most leaders would agree that feedback doesn't work. This is likely due to the reality that leaders struggle at giving effective feedback, and staff struggle receiving it.

It is easy to hear feedback… as long as it is positive. Why don't we like negative feedback? That's simple — it doesn't feel good to hear that you have missed the mark. We dislike negative feedback so much that we have given it alternate names, referring to it as "constructive criticism" or "opportunities for growth." We come to work to do a good job, but learning that you have room to improve is tough to hear.

Emotional response to feedback

When we receive negative feedback, it can be very personal and emotional, triggering a variety of responses.

Feedback can even feel analogous to physical injury. A study comparing MRI results of individuals experiencing physical pain to those experiencing "social pain" found similar neurocognitive results, meaning it literally "hurts" to be rejected.[1] While we cannot prevent our normal emotional response to feedback, we can learn to understand our response and identify the cause(s). According to Stone and Heen, there are three emotional triggers that can be activated in response to negative feedback: truth, relationship, and identity.[2] Recognizing when these triggers are activated will allow us to manage our reactions, creating an opportunity to receive the feedback and engage in learning.

Truth trigger

Have you ever received feedback and your immediate response was, "This is wrong" or "I never do that"? If so, then it may be information that is activating your truth trigger. Simply put, this is feedback that you find unhelpful or untrue, and you may feel annoyed or irritated by it (e.g., "This is ridiculous information!"). Feedback receivers are very good at spotting everything that is wrong with the feedback. In truth, it is very likely that something is incorrect about the feedback (e.g., missing information, slightly incorrect details, vague descriptions, etc.). This does not mean that the entire message should be discarded. To determine if the feedback is completely wrong, you must first *understand* it. As receivers, we tend to immediately jump into judgment of the information rather than taking the time to truly understand what has been shared. We need to move away from immediately telling ourselves that "this is wrong" and instead ask the feedback giver to "tell me more" about the issue.

Before dismissing this information as not applicable because you "always" understand the feedback, consider that most leaders are not very skilled at giving feedback. It is likely that you are not getting the complete picture. Asking clarifying questions can really help you know what exactly the feedback giver is trying to convey. Consider the following scenario:

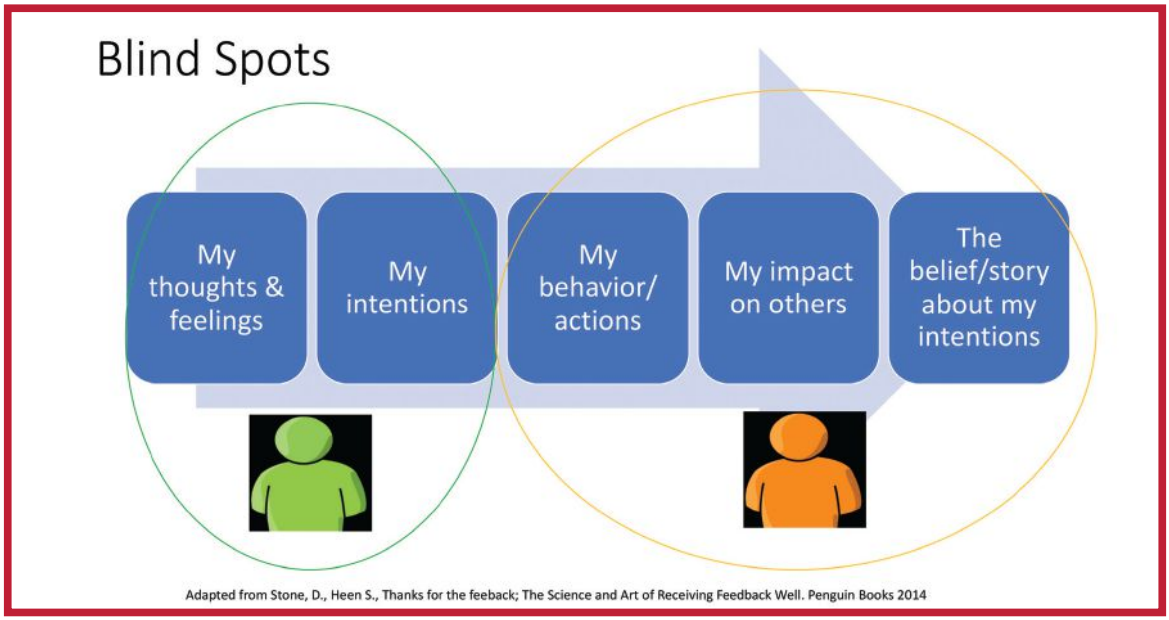
Leader: Good morning Bob. I asked you to come see me today because I have some concerns about your behavior in the staff meeting yesterday. It doesn't seem like you are on board with the new changes in our department. You were very defensive during our discussion.

The receiver's immediate response may be to think, "That isn't true, I was not being defensive." Instead, Bob needs to ask clarifying questions… but what does this look like?

Bob: Can you tell me more about that? What is it about my behavior that makes you believe I was being defensive?

Leader: You did not make eye contact with me the entire meeting, and you had your arms folded across your chest and rolled your eyes multiple times.

What Bob has learned is that he displayed three behaviors (i.e., no eye contact, arms folded, eyes rolling) and that the leader perceives those physical actions to be indicative of defensiveness. While that may or may not be true, Bob now knows what the actual problem is and has an opportunity to address it. Perhaps Bob didn't



even realize he was doing those things. Most commonly, when the truth trigger is activated, it is because the feedback is in your "blind spot."

What is the blind spot? Just like you have blind spots when driving a car, we have blind spots to the way our actions, words, and behaviors are *perceived* by others. Everyone has bind spots. Just as you need another person to let you know when you have food in your teeth, we need someone to help show us our blind spots. The only way to understand and address a blind spot is through feedback.

Relationship trigger

Relationship triggers are all about your personal relationship with the person delivering the feedback. Your focus will not be on the information, but rather on the person who is giving it. "How dare you tell me this!", "After all I have done for you?", "You can't do my job, so how can you possibly tell me that I didn't do it correctly?", "You just don't like me". If any of these thoughts run through your mind, then the relationship trigger has likely been activated.

Perhaps you do not trust the person, or you do not believe they have the skills needed to evaluate your performance (i.e., this person is not a credible source), or you feel they have treated you poorly in the past. You may reject feedback that you might have accepted if it had been given by another person. This can lead to missing really vital information. You must work to separate the "what" from the "who." Step back and think about *what* was shared with you, not *who* shared it. It may be helpful to discuss the feedback with someone you trust. Just be sure that person will give you honest feedback about the issue and won't agree with you because they do not want to hurt your feelings.

Identity trigger

The third trigger is not about the feedback or the feedback giver. It is all about *you*, the receiver. You may feel overwhelmed, frightened, ashamed, or even threatened by the information. Perhaps you think your job or relationship is at risk. Whatever the information is, it makes you question who you are or how you view yourself. It is deeply personal. You may be wondering what kind of feedback could make a person feel that way. The answer is also deeply personal and will vary with each person. Perhaps you have received feedback about a clinical issue and it made you feel like you are a terrible RT. It is very unlikely that the feedback giver actually said that to you, but it does not change that it made you feel that way.

To successfully move past the identity trigger, the receiver must separate how they feel from what is being said. You must identify what is *true* versus what you *believe*. The story that you tell yourself about the feedback (e.g., "I am a terrible RT") prevents you from being able to understand what is actually shared with you. This can be very difficult and may require some self-reflection before asking any clarifying questions of the

feedback giver. Separating feeling from fact is the first step to receiving the feedback. If you are still unsure, you should ask the feedback giver to clarify what they meant. "When we spoke about my clinical performance last week, it felt like you were telling me that I am not good at my job. Is that what you meant?" This may be the only way to directly address the issue. You can then have a clarifying conversation about what the leader truly meant for you to understand.

Actively seek feedback from your leader

You shouldn't wait until evaluation time to get feedback on your performance. If you are looking to improve or grow at work, it's a good idea to actively seek out feedback from you leader. Not only will you get good information, but you have also shown your leader that you are interested in growth. Individuals who actively seek feedback are more successful in their careers and are often viewed by their leader as more engaged compared to their peers.[2-5]

Unfortunately, many leaders are not comfortable giving negative feedback. Leaders may be afraid of hurting feelings or angering the recipient. If you ask for feedback and do not get anything of value, you may consider asking them to think on it and set a time to continue the conversation at a later date. Also consider reframing the conversation by sharing your desire to grow with statements like "I really want to work toward becoming a stronger patient educator this year; can you tell how I can improve?" or "One of my career goals is to become a leader; do you see anything in my performance that may make that difficult?"

Receiving feedback well

For feedback to be effective, it must be received well. Receiving feedback well simply means that you *heard* it and *understand* it. You can then determine what actions you will take (if any) to address this feedback. Receiving feedback well and taking action is how you will grow, both professionally and personally.

Listen: The first and most important step to receiving feedback well is to listen. Your first inclination may be to interrupt or defend yourself. It is also common to drift off, thinking of how we will respond to the information. Resist engaging these distractions and truly listen to the information being shared.

Ask follow-up questions: Once the person has finished sharing their thoughts with you, seek to learn more about what they have shared. Dive deeper into those comments that you feel are untrue or misinformed.

Separate the "who" from the "what": Do not allow your personal relationship or feelings for the feedback giver to prevent you from benefiting from what is being shared with you. If needed, ask another person if they agree.

Separate "fact" from "feelings": Make sure you understand what is actually being said, instead of how you have interpreted it.

Consider the feedback: Not all feedback is good, fair, or even accurate. You must take time to truly consider what has been said to you and then determine what actions you will take to improve.

Grow your career

Feedback is a gift, even though it doesn't typically feel like it. Growth and development are dependent upon the ability to receive feedback well and a willingness to actively seek out feedback from those around us. ■

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ABOUT THE AUTHOR

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Industry Watch

Incorrect medication use seen in study

A study published in the *Journal of Allergy and Clinical Immunology*: In Practice reports that most people with asthma may be using their inhaled medication devices incorrectly. The study was conducted in conjunction with the University of Colorado and Children's Hospital Colorado and supported by Propeller Health.

They analyzed data from 7,558 patients collected by Propeller Health's digital medicine, finding 84% of patients waited less than 30 seconds between the first and second puff of their rescue or controller inhaler and 67% waited less than 15 seconds between inhalations. Only 16% of patients waited more than 30 seconds between puffs, the minimum amount of time necessary to complete the recommended steps.

Grant funds research on antibiotic-resistant infection

A $3.34 million grant from the National Institute of Allergy and Infectious Diseases will allow investigators at Case Western Reserve University School of Medicine to conduct research that could help clinicians better understand how bacteria such as *B. multivorans* resist antibiotics, potentially leading to improved treatments. The team will focus on describing the structure and function of cell-wall strengthening machinery in *B. multivorans* and identifying peptide-based inhibitors to block this process, thus reducing the potential life-threatening activity of the bacteria in immune-compromised individuals with underlying lung diseases, including cystic fibrosis.

Defibrillator receives FDA approval

The LIFEPAK® CR2 Defibrillator from Physio-Control, Inc., has received FDA approval. The portable, battery-operated, public-access automatic external defibrillator (AED) includes cprCOACH™ Feedback Technology to provide CPR guidance in accordance with American Heart Association guidelines for patients one year of age and older. Users should receive training in basic life support/AED, advanced life support, or a physician-authorized emergency medical response training program.

FDA approves generic version of Advair Diskus

The FDA has approved the first generic version of the Advair Diskus, which is used for the twice-daily treatment of asthma in patients aged four years and older, maintenance treatment of airflow obstruction, and reducing exacerbations in patients with COPD. Mylan obtained approval to market its generic inhaler in three strengths: fluticasone propionate 100 µg with 50 µg salmeterol, fluticasone propionate 250 µg with 50 µg salmeterol, and fluticasone propionate 500 µg with 50 µg salmeterol. "Today's approval of the first generic drug product for one of the most commonly prescribed asthma and COPD inhalers in the United States is part of our longstanding commitment to advance access to lower-cost, high-quality generic alternatives," said Janet Woodcock, MD, director of the FDA's Center for Drug Evaluation and Research.

New telehealth program getting underway

A new telehealth program will bring together a University of Virginia (UVA) Health System team with primary care providers in the Appalachian region of Virginia to improve lung disease prevention, diagnosis, and treatment. Thanks to a $10,000 National Science Foundation Grant, UVA will partner with local providers to provide ten education sessions through the UVA Center for Telehealth, with the topics determined through a survey of local primary care providers based on their needs and interests. Topics may range from smoking cessation and lung cancer screening to sleep apnea and pulmonary rehabilitation.

STS names new executive director

Elaine Weiss, JD, is the new executive director of the Society of Thoracic Surgeons (STS). She succeeds Robert A. Wynbrandt, JD, who retired after more than 30 years with the organization. Weiss comes to the position from the American Academy of Dermatology, where she served as executive director and CEO. In 1993, she was appointed by President Bill Clinton to serve as Midwest

regional director for the Department of Health and Human Services, where she represented the administration on all health care policy matters and collaborated with Midwestern governors, mayors, congressional delegations, special interest groups, and the public.

New "Speak Up" prevention campaign

The Joint Commission has debuted a new Speak Up™ To Prevent Infection campaign featuring free downloadable educational materials in English and Spanish to get health care providers to promote patient involvement in their care. Campaign resources include an infographic poster/flyer, an animated video, and a distribution guide with recommendations on how health care organizations can use and provide the materials to patients, families, caregivers, and advocates. Launched in 2002, the award-winning Speak Up™ program has been used in more than 70 countries to encourage patients to be their own advocates in the health care process.

FDA issues BTD for RSV drug

According to AstraZeneca and its global biologics research and development arm, MedImmune, the FDA has granted Breakthrough Therapy Designation (BTD) for MEDI8897, an extended half-life respiratory syncytial virus (RSV) F monoclonal antibody that is being developed for the prevention of lower respiratory tract infection (LRTI) caused by RSV. The BTD is based on the primary analysis of a Phase IIb trial to evaluate the safety and efficacy of MEDI8897 that met its primary endpoint, defined as a statistically significant reduction in the incidence of medically attended LRTI caused by reverse transcriptase polymerase chain reaction-confirmed RSV for 150 days after dosing in healthy preterm infants.

Additional funds invested in new pneumonia vaccine

GPN Vaccines has now raised an additional $1.1 million in Australian dollars from international and Australian-based investors to use in the preclinical evaluation of the Gamma-PNTM vaccine for *Streptococcus pneumoniae*. Toxicity tests will be carried out, along with a scale-up of the clinical-grade manufacture of the vaccine, in readiness for testing in a first-in-human clinical trial. "The problem with the existing pneumococcal vaccine is that it targets the outside coat of complex carbohydrates — of which there are 98 structurally distinct types," said Professor James Paton, director of the University of Adelaide's Research Centre for Infectious Diseases. "What we have done is to remove this coat to expose all the surface proteins that are common to all pneumococcal types. The body mounts an immune response to these surface proteins if previously exposed or vaccinated." The current vaccine costs about $150 a dose and only covers 13 types.

New patents issued for inhaled respiratory medications

Pulmatrix, Inc., has been awarded five new patents that expand the intellectual property protection for Pulmatrix's PUR1800 and PUR5700 programs. These patents expand the intellectual property protection for Pulmatrix's novel inhaled narrow-spectrum kinase inhibitors, which were licensed from Janssen in June 2017. One new patent was awarded for PUR1800, a narrow-spectrum kinase inhibitor for patients with obstructive lung diseases including asthma and COPD. Four new patents were awarded for the compound RV-7031, the active pharmaceutical ingredient in PUR5700. "These granted patents for our novel anti-inflammatory narrow-spectrum kinase inhibitor molecules found in our iSPERSE PUR1800 and PUR5700 formulations provide a strong intellectual property base for these programs moving forward," said Pulmatrix CEO, Robert Clarke, PhD.

Lung denervation system gets financial boost

Nuvaira, a developer of novel therapeutic medical devices to treat obstructive lung diseases, has closed a $79 million equity-financing deal to further the development of its lung denervation system to address airway hyper-responsiveness. Dennis Wahr, MD, CEO of Nuvaira, said, "These funds will be used to support the pivotal AIRFLOW-3 clinical trial for FDA approval and to implement a targeted clinical development strategy in key European markets."

New website for pulmonary fibrosis patients

The Pulmonary Fibrosis Foundation (PFF) and Responsum Health have teamed up to create Responsum for PF, a personalized newsfeed, support resource, and data-organizing tool for individuals living with pulmonary fibrosis (PF). The Foundation says the free service will enable patients to easily access trusted, comprehensive, and understandable content about the condition. Along with a searchable database of more than 500 article summaries, patients will find useful health data tools, including a shareable "patient one-sheet" and Patient Services Inc.'s patient-assistance program. They can also contact their health care providers directly from the site to ask questions about the news and information on the platform. The site is at responsum.com/responsum-for-pf. ■

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

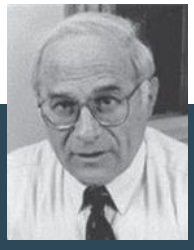
Special Advertising Section

Industry Update

Featuring information on products and equipment from manufacturers

RC Currents

IN THE NEWS



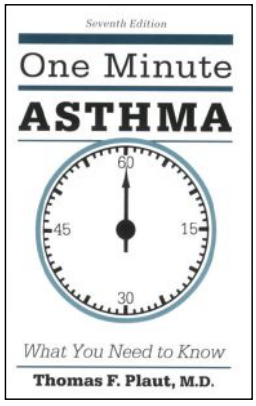
Transitions

A Lasting Legacy:

AARC Mourns the Loss of Dr. Thomas F. Plaut

The AARC was saddened to learn of the death of Thomas F. Plaut, MD, who passed away in January. Well known by many respiratory therapists as the author of *One Minute Asthma*, a book for patients and families living with the disease, Dr. Plaut devoted his life to helping children and advocating for underserved populations.

Shortly before his death, he released all of the copyrights and trademarks for *One Minute Asthma* to the AARC. "We are honored that Dr. Plaut thought of our Association when deciding where to leave his iconic publication on asthma," said AARC CEO Thomas J. Kallstrom, MBA, RRT, FAARC. "We plan to carry on his legacy by continuing to make this much beloved asthma publication available to all who need it."



Thomas Plaut came to the U.S. as a young child in 1935, escaping Nazi Germany along with his family. He graduated from Yale University and was trained as a pediatrician at Columbia University. His long career took him from a coal mining town in Appalachia, to a community health center in the South Bronx, to a pediatrician's practice in Massachusetts where the *One Minute Asthma* concept was born.

The book sold more than two million copies and was published in both English and Spanish. Written at a 5th grade reading level, it was intended to be accessible to as many patients and families as possible. The 8th edition was published in 2011 and covers asthma basics, peak flow, diaries and action plans, medicines, and inhalation devices, and also contains a resource section. Each page presents a single concept and takes only about a minute for the average person to read.

"*One Minute Asthma* offers patients and families the asthma information they need in a format they can easily digest," said AARC President Karen Schell, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS. "We are pleased that Dr. Plaut trusted us with his great little book and we plan to ensure patients and families will benefit from it for generations to come." ■

Senior Members: Tell Us the Story of Your Career

This year *AARC Times* is looking for contributions to our "Reflections" column from AARC members who have become senior members in the Association. We ask that you share a look back at your career, telling us what it meant to you and why. You can submit your story to AARC Times at cathcart@aarc.org. Haven't heard of the Senior Membership category? Contact AARC Customer Service at (972) 243-2272 to learn more.

Why Not Be a Volunteer?

by AARC President Karen Schell, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS

Volunteers are integral to society. Not only does volunteering help to better your community, it helps you be a better individual. In some way, large or small, all of us are capable of doing good. Volunteer passion can be infectious. Sincere passion can also be inspiring to others. Your contributions can make a difference and bring your community together. Being energetic and having a positive attitude can help motivate yourself and others.

You can choose to be a volunteer for a variety of reasons. Your first step to making a difference begins when you understand which opportunity suits you best. Choose a cause that you are passionate about, and find an opportunity that matches your skills, interests, and schedule. Tens of thousands of opportunities are available. Start by looking in your own backyard. Find opportunities and take the time to learn more about them. Choose wisely — do your homework. What is the time commitment? What skills are needed? Are there reviews available or current volunteers who can give you more information? What do you have to offer? What skills do you have to help? Meeting new people, gaining new experiences, contributing to a cause, and reaching outside of your comfort zone can change you as a person in ways you might not expect.

What are the "makings" of an excellent volunteer? Having the right skills is great, but more important is having the right qualities. Part of being a great volunteer relies on basic principles. They include being professional, honoring your volunteer commitments, and being able to work in harmony with others. You may have your own good ideas on how things should be done, but remember why you are volunteering and that everyone is there with the same good intentions.

Volunteering isn't just about giving your time. It requires positive energy. If you have good positive energy, those around you will follow suit. You should feel excited about what you are doing. Being flexible and friendly are also key attributes. As a volunteer, you will work with all sorts of people. Being approachable and a good listener are important when being a team player. Follow the golden rule; if you commit to doing something, then do it. Fulfilling a commitment doesn't just reflect on you, it also reflects upon the organization you are representing. The organization has entrusted you to do everything as a direct representation of them. Adapting to new situations as they occur can help form new relationships. Don't overcommit. Balance your time carefully so that your professional life and family time are considered. Have fun! It should not feel like a chore. Manage your time with a sense of humor and excitement.

The AARC wants you for the important work ahead. We need you to volunteer. It is members like you who volunteer who are the foundation of the profession. We need everyone's input to "organize the troops" and engage our members and non-members to support the AARC's efforts to assure quality patient care and secure the respiratory therapist's rightful place in our changing health care system. Take time now to network with and mentor your fellow RTs to become involved and contribute their special talents and skills to growing our profession through our organization.

Volunteers are the heart of our profession. Our strength comes from your commitment to educating the public about your expertise and your skills. Your time is needed to ensure the future of our profession. You can contact me directly at karen.schell@aarc.org if you want to volunteer. No one individually can accomplish everything we need to do, but by working together we can keep the momentum going and grow to our future potential. I am confident we will grow the profession together with your support. ■

Students and Seniors Get Price Breaks on Dues

AARC members who are just starting out in their careers and those who are getting ready to wrap things up can both benefit from exclusive membership offers developed just for them.

The Early Professional Membership program is available to entry-to-practice RT students. The first two years of the Early Professional membership costs only $25 annually. The program gradually increases in price for years three and four at $40 and $60, respectively, while the new RT gets acclimated to life as a professional. To enroll as an Early Professional member, the student should visit the AARC website and click the join/renew link.

Members age 65 and older who have been AARC members for at least 20 years are eligible to maintain their membership in the Association for just $25 per year. Alternatively, they can pay $200 and become members for life. This digital membership gives these loyal members the chance to stay in touch with everything going on in the respiratory care industry while they're planning for or entering retirement. Members eligible for this senior status can call AARC Customer Service at (972) 243-2272 to learn more about signing up. ■

You Get What You Pay For

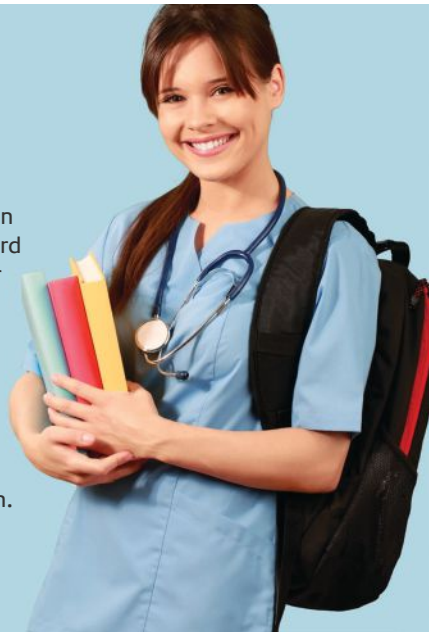
Is it a good idea to pay people to participate in research studies? Probably not, conclude University of Pennsylvania researchers who compared people taking part in an influenza survey who were and weren't offered a small payment for participating. In the group of people who weren't offered payment, 52.2% reported having received a recent flu shot. When people were told they could be paid between $5 and $20 to participate, but only if they had received a recent a flu shot, the percentage saying they had been vaccinated jumped to around 62–63%. When people were told paid participation depended on not having received the flu vaccine, the percentage saying they had been vaccinated dropped to between about 41% and 46%. The study appeared in a recent edition of *JAMA Network Open*. ■

EDUCATORS:
Help Recognize Your Outstanding Students

The American Respiratory Care Foundation (ARCF) is accepting applications for its undergraduate and postgraduate Education Recognition Awards now through June 1 and is asking RC educators to help get the word out to students. Check out the list of available awards and encourage your best and brightest students to apply.

The ARCF offers awards to students who are currently enrolled in accredited respiratory care educational programs and to respiratory therapists pursuing advanced degrees. Awards include registration and airfare to attend the AARC Congress in 2019.

To see all the awards bestowed by the ARCF every year, go to the Foundation's Grants, Awards, and Fellowships page at https://arcfoundation.org/how-we-give/. For more information, contact Foundation & Grants Coordinator Crystal Maldonado at crystal.maldonado@aarc.org. ■

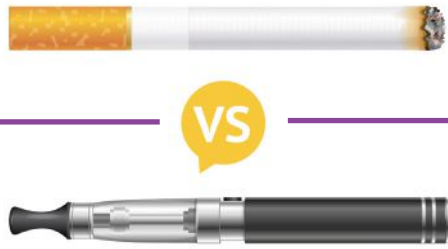


Bag-Mask Ventilation Before Intubation Improves Outcomes

U.S. researchers publishing in *The New England Journal of Medicine* have found that using bag-mask ventilation prior to intubation significantly improves outcomes. The investigators came to that conclusion after conducting the multicenter PreVent trial (Preventing Hypoxemia with Manual Ventilation during Endotracheal Intubation), which compared results for 401 patients assigned to either bag-mask ventilation between induction and laryngoscopy or no ventilation.

Results showed the lowest median oxygen saturation in the bag-mask group was 96% vs. 93% in the no-ventilation group. Overall, 21 patients in the bag-mask group had severely low oxygen levels compared to 45 patients in the no-ventilation group. Vomiting of stomach contents into the lungs, which has long been a concern of some physicians with bag-mask ventilation, occurred during 2.5% of intubations in the bag-mask group and during 4% of intubations in the group without bag-mask ventilation.

"The best thing about this intervention is that it is free," concluded David R. Janz, MD, MSc, assistant professor of medicine at Louisiana State University and a co-author on the trial. "This is a device that is already always available when you are placing a breathing tube. In the past, we only used the bag-mask device to assist patients' breathing if we had difficulty placing a breathing tube. Now we know that it should be used in every procedure even before we make our first attempt to place a breathing tube." The study was funded by the *Vanderbilt Institute for Clinical and Translational Research*. ■



A Cautionary Tale

E-cigarette makers like to bill their products as safer alternatives to traditional cigarettes, but news stories about exploding e-cig devices suggest that is not the case, and now Vanderbilt University researchers add to the evidence with a case study on one 17-year-old who ended up in the hospital with acute respiratory distress syndrome (ARDS), cardiopulmonary collapse, and shock stroke after just one use of an e-cig device.

The teenaged girl was out with friends when they decided to purchase a gourmet ice cream-flavored e-cigarette liquid. After the vaping session, she become increasingly short of breath and developed a bluish tint around her mouth. An initial workup in the emergency department suggested pneumonia with a very high white blood cell count. She was started on oxygen and broad-spectrum intravenous antibiotics before being transferred to a regional children's hospital.

Her condition continued to worsen, and intubation and mechanical ventilation were required. She was then transferred to a large quaternary children's care center for treatment of ARDS. No evidence of viral or bacterial infection was found, but increasing white blood cell counts suggested a reaction to a foreign body or substance.

She continued to deteriorate and was ultimately placed on extracorporeal membrane oxygenation. A sample of the fluid in her lungs showed strong evidence of hypersensitivity pneumonitis due to an intense reaction to a foreign substance, and it was determined that her use of the e-cigarette immediately prior to symptom onset was the most likely cause of this reaction. While the girl gradually recovered, residual weakness persisted and a subsequent brain MRI diagnosed a stroke, which the physicians attributed to poor cardiac function during her acute decline.

"This case should be a warning to all of us," said study author R. Sterling Haring, DO, MPH. "E-cigarettes and the chemicals they deliver are not harmless, and in certain cases can be life-threatening. Those considering use of these devices, especially children and their parents, should think twice."

The study was presented at the Association of Academic Physiatrists Annual Meeting earlier this year. ■

ATTENTION EDUCATORS:

Nominations Are Now Open for the Preceptor Recognition Program

Clinical preceptors play an invaluable role in the education of respiratory therapists. Without these bedside educators, respiratory care programs would find it difficult if not impossible to adequately prepare the next generation of RTs for hands-on patient care.

"Preceptors are the unsung heroes of RT education," says AARC Education Section Chair Georgianna Sergakis, PhD, RRT. "They really are the ones who are there when the students take what they have learned in class, lab, and simulation and translate that learning to the real world. Students could not connect those dots to what is taught in the program without the preceptor's guidance and facilitation of clinical rotations."

A few years ago, the AARC Education Section created the Preceptor Recognition Program to acknowledge formally the vital contributions that clinical preceptors make to the education of respiratory care students, and Dr. Sergakis urges educators to take advantage of it to recognize their most outstanding preceptors. "A simple thank you is often enough for these unsung heroes of RT education," she says. "However, beyond the very satisfying intrinsic rewards that a preceptor might get for their role in contributing to the student's educational process, it is a wonderful vehicle for the programs to recognize this on the national stage."

Nominations for the 2019 awards are being accepted now through July 31, 2019. Here are the requirements —

- The form must be completed by a director of clinical education (DCE) or a program director.
- The nominee must be a member of the AARC's Education Section.
- The nominee must have completed the AARC's Clinical Preceptor Course in the past year (Aug. 1–July 31).
- The nominee must have completed a minimum of 120 hours of preceptorship in the past year (Aug. 1–July 31).
- The nominee must have an RRT credential.
- The nominee must possess or currently be pursuing a bachelor's degree.
- The DCE and program director must also be current members of the AARC.

Last year, the program recognized 36 preceptors from around the country. If your respiratory care students are benefiting from the service of an excellent preceptor, please consider nominating them for this prestigious award.

Preventing MRSA

According to the Centers for Disease Control and Prevention (CDC), antibiotic-resistant bacteria like MRSA cause at least two million illnesses and 23,000 deaths in the United States every year. Researchers conducting a clinical trial called Project CLEAR (Changing Lives by Eradicating Antibiotic Resistance) believe sending patients home with instructions to use an over-the-counter antiseptic soap for showering or bathing, plus a prescription mouthwash and a nasal ointment, can put a significant dent in those numbers. In their multicenter study, the University of California, Irvine, investigators found these measures cut the rate of subsequent MRSA infections by 30% when compared to education on preventing MRSA alone.

Patients who used the preventatives also had 17% fewer infections overall when compared to those in the education-only group. Patients who didn't miss any of their doses had 44% fewer MRSA infections and 40% fewer infections from all causes. The study was conducted among 2,121 patients and appeared in a recent edition of *The New England Journal of Medicine*. ■

Alveolar Cells Develop Earlier Than Thought

In a study that used single-cell RNA-sequencing analysis, protein expression studies, and a new lineage-tracing tool to reveal details of early lung formation in a fetal mouse model, researchers in Pennsylvania have found that alveolar cells begin to emerge at the same time as early lung formation, as cells in the developing embryo move apart and branch out into specialized structures such as airways and alveoli. This is earlier than researchers had previously believed and could lead to new treatments for premature infants.

"The early presence of these specialized alveolar cells may account for the fact that a minority of extremely premature human babies survive even with underdeveloped lungs," said study author David B. Frank, MD, PhD, a pediatric cardiologist at the Children's Hospital of Philadelphia. He and his colleagues plan to further explore these findings in hopes that a better understanding of lung development could lead to tools in regenerative medicine, perhaps by manipulating key signaling pathways or novel progenitor cell targets to grow new lung tissue after injury from prematurity or from acquired lung disease.

The study was published in a recent edition of the *Proceedings of the National Academy of Sciences*. ■

New Target for Severe Allergic Reactions

A new study out of Michigan State University may one day help people with severe allergies avoid serious complications like anaphylactic shock. Investigators there have discovered that a receptor known as CRF2 can act as a control point in mast cells, preventing them from becoming over-activated and causing severe allergic reactions.

While much more work is needed, the researchers believe this receptor could be a game changer for people prone to severe allergies. "Now that we know the critical role it plays, a pharmaceutical company could potentially develop a drug that targets these specific cells," said study author Adam Moeser. "That would be the ultimate goal." The study was published in the *Journal of Allergy and Clinical Immunology*. ■

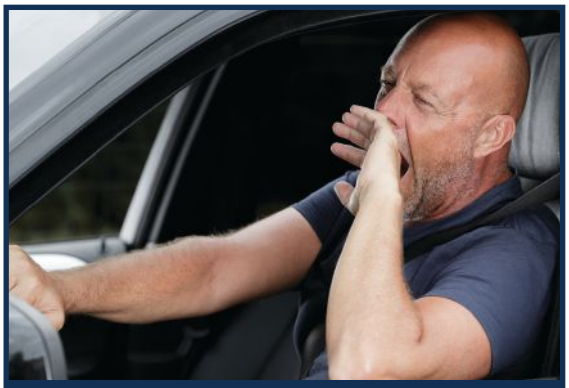
PROGRESS ERASED

A new *Vital Signs* report from the CDC suggests the progress made in reducing the use of tobacco products in young people in years past has now been erased, and we have the surge in e-cigarette use to thank for it.

According to the report, about 4.9 million middle and high school students were current tobacco product users in 2018, up from 3.6 million in 2017. The only product category to show a change was e-cigarettes. Overall, there were 1.5 million more e-cigarette users among these young people in 2018 than in 2017 — what's more, they were using the devices more often. Frequent use, defined as more than 20 days in the past 30-day period, was up from 20% in 2017 to 28% in 2018.

FDA Commissioner Scott Gottlieb, MD, reiterated his agency's commitment to curtailing the use of any tobacco product in children. "These data are a sobering reminder of the rampant rise of youth e-cigarette use. I fear this trend will continue in 2019, forcing us to make some tough decisions about the regulatory status of e-cigarettes," he said.

"No child should be using any tobacco or nicotine-containing product, and we're committed to reversing this epidemic. We'll continue to take a series of escalating regulatory actions to try to address the root causes of this spike in youth e-cigarette use, in particular by ensuring these products are sold in ways that make them less accessible and appealing to youth," the commissioner concluded. ■



Excessive Daytime Sleepiness Increases Heart Disease Risk

Obstructive sleep apnea (OSA) has been linked to cardiovascular disease. Researchers publishing in the *American Journal of Respiratory and Critical Care Medicine* offer some insight into which patients are most likely to be affected. In a study conducted among 1,207 adults with moderate to severe OSA who were followed for nearly 12 years, University of Pennsylvania investigators found that those who reported excessive daytime sleepiness were most at risk. These patients were more than three times as likely to have been diagnosed with heart failure at enrollment than the other patients and about twice as likely to experience a cardiovascular event during the follow-up period. They were also the only group of patients to have higher rates of cardiovascular disease at enrollment when compared to individuals without OSA. ■

State of Tobacco Control Report Card Issued

According to the American Lung Association's (ALA) 17th annual "State of Tobacco Control" report, both state and federal governments still have a long way to go when it comes to putting policies in place to prevent and reduce tobacco use. The ALA graded all 50 states and Washington, DC, in five key areas that have been proven to save lives:

- Funding for state tobacco-prevention programs: 43 states and DC received an "F"
- Strength of smoke-free workplace laws: 29 states and DC received a grade of "B" or better
- Coverage and access to services to quit tobacco: 37 states and DC received a "C" or worse
- Minimum age of sale for tobacco products raised to 21: 40 states received an "F"

The federal government was graded in four areas and got an "F" in three of them: FDA regulation of tobacco products, federal coverage of smoking-cessation treatments, and level of federal tobacco taxes. The federal government received an "A" for its efforts to initiate mass media campaigns to prevent and reduce tobacco use. ■

Financial Incentives Help Low-Income Smokers Kick the Habit

Paying low-income smokers to participate in a smoking-cessation initiative might be a good way to get them to quit, report researchers from the University of Wisconsin who compared outcomes for low-income smokers who were and were not offered financial incentives to take part in a quit-line program.

Everyone taking part in the study was offered five smoking-cessation counseling calls and received a $40 payment for completing a baseline assessment and another $40 for participating in a six-month assessment. Incentive group participants also received compensation for taking counseling calls ($30/call) and for biochemically verified abstinence at the six-month visit ($40).

Participants in the incentive group engaged in a mean of 3.8 calls vs. 2.9 calls in the control group. At the six-month follow up, 21.6% demonstrated biochemically verified abstinence compared to 13.8% in the control group. In terms of cost effectiveness, the researchers found the program compared favorably with other smoking-cessation treatments, such as varenicline combined with proactive telephone counseling. The study was published in *Value in Health*. ■

New CPG Addresses Home Oxygen Therapy for Kids

The American Thoracic Society has published a new clinical practice guideline (CPG) on home oxygen therapy for children. The guideline includes specific recommendations for treating chronic hypoxemia in children with cystic fibrosis, bronchopulmonary dysplasia, sleep-disturbed breathing, sickle cell disease, pulmonary hypertension with and without congenital heart disease, and interstitial lung disease. The document was developed by a 22-member panel of experts and is based on a systematic literature review.

"Home oxygen is often needed for children with chronic lung and pulmonary vascular diseases," said lead author Don Hayes, Jr., MD, MS, MEd, medical director of the Advanced Lung Disease Program at Nationwide Children's Hospital and co-chair of the working group. "However, there is a striking lack of empirical evidence regarding its implementation, monitoring, and discontinuation in children. These guidelines, developed by a panel of highly respected experts, offer an evidence-based approach to using home oxygen to benefit pediatric patients."

The guideline was published in the Feb. 1 edition of the *American Journal of Respiratory and Critical Care Medicine*. ■

E-cigarette Liquids May Be Harming Cilia

Two chemicals commonly found in e-cigarette liquids — diacetyl and 2,3-pentanedione — may be compromising the ability of the cilia to function correctly in the human airway. That's the take-home message from Harvard University researchers who conducted the first study to look at the impact of flavoring chemicals in human epithelial cells. Using novel lab techniques, they exposed normal human bronchial epithelial cells to the chemicals for 24 hours.

Both diacetyl and 2,3-pentanedione were linked with changes in gene expression that could impair both the production and function of cilia. "E-cigarette users are heating and inhaling flavoring chemicals that were never tested for inhalation safety," said study author Joseph Allen, DSc. The study was published in a recent edition of *Scientific Reports*. ■

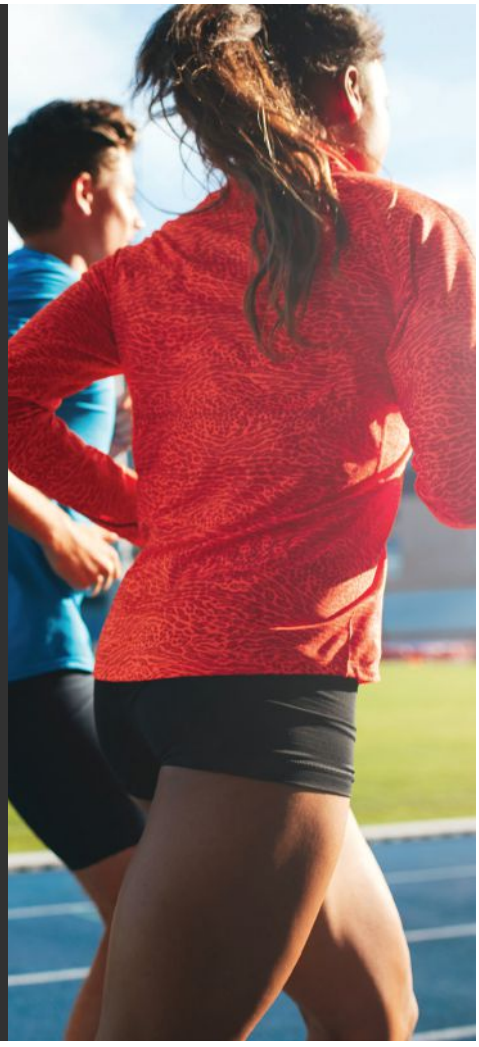
Why Athletes Are More Likely to Develop ALS

Amyotrophic lateral sclerosis (ALS) is also known as Lou Gehrig's disease, named after the famed New York Yankee who developed the condition and died from it in 1941. The nickname is apt because athletes and others who engage in intense physical activity are more likely to be affected by the disease. Now researchers from the University of Illinois at Chicago offer evidence why. Their study has linked ALS to nerve damage in an arm or leg.

In a study conducted in rats who were genetically engineered to develop ALS-like symptoms, they discovered an abnormal inflammatory response in the region of the spinal cord associated with an injured peripheral neuron. As the spinal cord inflammation and other damaging processes spread, they caused progressive muscle weakness throughout the body.

"Our results show that a single nerve injury, which is small enough that it only causes temporary weakness in normal animals, can start a cascade of inflammation in the spinal cord that initiates and causes the disease to spread in genetically-susceptible animals," said study author Dr. Jeffery Loeb. "The ability to precipitate the disease through injury gives us a new animal model we can use to identify treatments for ALS that focus on stopping the spread of the disease after it first starts." He and his colleagues are working toward a drug to target this process and slow or stop progression of the disease.

The study was published in a recent edition of *Neurobiology of Disease*. ■



Unmet Needs Lead to Worse Health

Improving outcomes for patients on Medicaid may require more than just treating their medical conditions, finds a new study published in *Health Education & Behavior*. Investigators from Washington University in St. Louis who analyzed data from 1,214 online surveys taken by Medicaid members found that unmet social needs must figure into the equation as well. Results showed those with unmet needs like lack of money for unexpected expenses in the next month and not enough space in the home were more likely to suffer from stress and chronic conditions. They were also more likely to smoke, less likely to exercise, and more likely to eat fewer servings of fruits or vegetables. Overall, they reported being in worse health. About two thirds of the respondents reported one or more unmet needs. ■

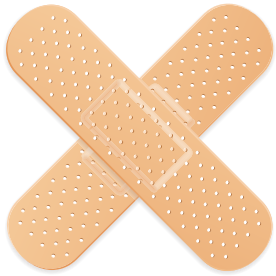
Another Reason Not to Smoke

RTs who are looking for more reasons to give their patients about why they should kick the habit may want to add poor vision to the list. Researchers who compared the eyesight of 71 healthy people who smoked fewer than 15 cigarettes in their lives with 63 who smoked more than 20 per day found heavy smoking can lead to significant changes in the ability to discriminate between contrast levels and colors.

"Previous studies have pointed to long-term smoking as doubling the risk for age-related macular degeneration and as a factor causing lens yellowing and inflammation," noted study author Steven Silverstein, from Rutgers University. "Our results indicate that excessive use of cigarettes, or chronic exposure to their compounds, affects visual discrimination, supporting the existence of overall deficits in visual processing with tobacco addiction." The study was published in a recent edition of *Psychiatry Research.* ■

Strange But True...

Remember Shrinky Dinks? Investigators from the University of California, Irvine are using an old school toy to develop a wearable respiration monitor that could be used with kids who have asthma, cystic fibrosis, and other respiratory conditions. The devices are made by applying a very thin layer of metal to a sheet of Shrinky Dinks and then heat-shrinking it to cause corrugation. The film is then transferred to a soft, stretchy material similar to a small bandage that can be adhered to the patient. Signals from embedded sensors are transmitted via Bluetooth to a smartphone app.



This little piggy: If research being conducted at the University of Alabama at Birmingham pans out, infants waiting for a heart transplant may one day be kept alive via a temporary transplant with a pig's heart. In a study that analyzed how an infant's blood serum would react to a pig's heart that was genetically modified to delete all three major antigens that are known to react with natural human anti-pig antibodies, they found reactions were nearly zero, suggesting infants may not reject the pig hearts.

Fruit fly lullaby: Could sleep be the answer to fighting off an infection? According to researchers from the University of Pennsylvania, it works in fruit flies. They found a protein that helps control how much and how deeply fruit flies sleep also kills bacteria.

No more shots? Boston investigators are working on a prototype of a pill capable of delivering medication by painlessly pricking the inside of the stomach. The pill is being tested for insulin right now, but the researchers believe it could be used to replace other types of injections as well.

Puff on this: South Dakota State University researchers are developing a breathalyzer type device that can measure blood sugar in diabetics. The reusable, handheld device works by measuring acetone, which is a biomarker for blood glucose level.

Musical pacifiers: Researchers from UCLA Mattel Children's Hospital are testing musical pacifiers in preterm infants to help them develop their abilities to suck, breathe, and swallow. The pacifiers are attached to an electronic device that plays pre-recorded lullabies sung by their parents. ■

Calendar of Events

AARC & State Society Programs

April 27, 2019
Indianapolis, IN
Sleep A….Zzzzz Conference
Contact: marytodd25@yahoo.com or www.in-ISRC.org

April 29, 2019 – May 1, 2019
Wisconsin Dells, WI
Northern Regional Respiratory Care Conference
Contact: jhorkan@ramchealth.orgor www.NRRCC.com

May 9, 2019 – May 11, 2019
Daytona Beach, FL
Sunshine Seminar and Annual State Meeting
Contact: fsrc@fsrc.orgor www.fsrc.org

May 29, 2019 – May 31, 2019
Oak Brook Terrace, IL
ISRC 51st Annual Conference "Fast Track Forward"
Contact: mcqu612@aol.comor https://isrc.org

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Call Me Grateful

by Jack Fried, MS, BSRC, RRT

Call me grateful for my 45 years as a respiratory care practitioner. I have served as an officer in the Florida, Louisiana, New York, and Utah Societies for Respiratory Care. Along the way, I have met and worked with some of the finest people I have ever known.

The true meaning of "family"

I've been working in health care since I signed up to be a hospital volunteer the day I turned 14. After high school, I became an emergency room technician and a trained-on-the-job respiratory technician. I got a bachelor of science degree in cardiopulmonary technology/respiratory care from the State University of New York at Stoney Brook. I was fortunate to have great professors, such as Gerry Dolan, MA, RRT, who would later become AARC president, and Mike McPeck, BS, RRT, FAARC, a brilliant clinician and a respected fellow of the AARC.

After graduating, I moved to Gainesville, FL, where I first became a director and had the opportunity to be the first or second author on articles and abstracts published in Respiratory Care and *Critical Care Medicine*. I had the privilege of working with and being mentored by Dr. John B. Downs and his team at the University of Florida.

After obtaining a master's degree, I moved to Lake Charles, LA, where I had the misfortune of seeing our profession from the other side. A defective tire caused my car to flip, and I was pulled out without vital signs. Once resuscitated, I was flown to Lafayette, 90 miles away. There I was on a ventilator while my wife had to deal with a four-year-old and a one-year-old and no family within a thousand miles — or so I thought.

My amazing co-workers at St. Patrick Hospital scrambled to help my wife and neighbors care for my children. Their family members in Lafayette were at the hospital the next morning, offering my wife anything she needed or to make the two-hour drive to Houston to meet my parents. Respiratory therapists from around the state, as well as my hospital colleagues, became my family.

I also learned a great way to mobilize difficult post-op patients during my hospital stay when the aide clipped my Foley bag to her belt, told me she was leaving, and asked if I was coming!

about the author...

Jack Fried, MS, BSRC, RRT is a senior member of the AARC. If you are age 65 or older, working or retired, and have been an AARC member for 20 years or more, call the AARC at 972-243-2272 to find out how you can take advantage of senior membership dues.

It's a small world

Fortunately, I made a complete recovery, and later I accepted a position at New York Presbyterian Hospital, the 1,300-bed facility associated with Columbia University. There I had the opportunity to work in the early stages of the extracorporeal membrane oxygenation program under the direction of a highly dedicated and outstanding physician, Dr. Charles Stollar.

Three years later, I made a shift back to a community hospital in nearby White Plains, NY, where I managed respiratory care, cardiology, neuroscience, and later hyperbaric medicine, the sleep lab, and radiology. Yes, radiology. The department was not doing well, and Joint Commission was due in four weeks. The chief nursing officer and associate chief nursing officer recommended I be given the task of directing that department. It was a challenge but well worth the effort.

Unfortunately, a decision to merge the hospital with another hospital, along with the use of consultants to reengineer, ended up sending the hospital into a

doomsday cycle. Fortunately, I knew when it was time to go — four years before the hospital failed.

In 1999, I made the decision to kick the tires — ones that were *not* defective — and moved to St. Mark's Hospital in Salt Lake City, UT, where I have worked ever since. I had the good fortune to chair the Respiratory Care Licensure Board for five and a half of the eight and a half years I served, and to be on the advisory boards of several respiratory care programs. Attending the AARC annual meetings represents, to a large degree, a reunion for me. I can travel almost anywhere and meet therapists and other professionals with whom I have worked. And when I say "almost anywhere," I mean it. Four years ago, I had my head buried in the menu at a London pub when I heard my name. I looked up to see Cheryl West, former AARC director of government affairs, and, to this day, one of the finest and most dedicated people I have ever known.

Retirement? Not yet!

Over my career, I have found it is interesting to see how people learn about respiratory care. My wife chose nursing as a second career, and, soon after she graduated in 1989, she surprised me with a comment: "I thought all you did was turn knobs. Was I ever wrong!"

Years later, we both came to the aid of a sick patient on a flight from Newark to Salt Lake City. It's gratifying when so many people recognize and thank you for the care you provide when you are out and about, or even on your way home from Rome.

People ask when I will retire. No time in the near future, that's for sure. When I do stop working, I will always be a respiratory care practitioner, RRT #4049. Call me grateful for having chosen a profession where I have met so many great people. ■

Jack Fried, in the white coat, posed with some of his RT staff at New York Presbyterian Hospital.

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