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AARC Times

Karen Schell Sworn in as the New AARC President

ZDoggMD Delighted Attendees at AARC Congress 2018

Karen Schell, DGSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS, was installed as the AARC's 2019-2020 president during the Annual Business Meeting on December 4 in Las Vegas

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American Association for Respiratory Care

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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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FLU IS EVOLVING,

Is your ED ready?

Influenza viruses are constantly changing. The antigenic 'drift' and 'shift' of the virus is a challenge to control with vaccinations, resulting in high flu rates.[1] One of the most prominent groups to suffer with the flu is respiratory patients.

The common treatment of a respiratory exacerbation is with a jet nebulizer. Invented in 1858, jet nebulizers have numerous limitations.[2] Jet nebulizers have shown to result in multiple treatments, the potential for longer Emergency Departments stays and increased admission rates compared to vibrating mesh.[3]

Aerogen's breakthrough vibrating mesh technology delivers an improved patient response to treatment, resulting in **32% reductions in admissions compared to jet nebulizers.[3]**

FLU IS EVOLVING, SHOULDN'T YOUR ED?

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1. How the Flu Virus Can Change: "Drift" and "Shift". (2017, September 27). Retrieved from Centers forDisease Control and Prevention: https://www.cdc.gov/flu/about/viruses/change.htm
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Encouraging Positive Engagement and Motivation Through Mentoring

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

Motivation and engagement play a large role in interest and enjoyment, whether it be in school, on the job, or in our personal lives. Engagement and motivation impact learning and behavior.[1] Engaged individuals demonstrate more effort, experience more positive emotions, and pay more attention.[2]

Motivation and encouraging engagement is not easy. We can all play a role and be proactive in cultivating engagement and motivation amongst our members, students, and colleagues. As a profession, we need more professionals to be active and participating in achieving our goals to meet the challenges ahead for the profession. How do we get them involved?

Everyday strategies to engage those individuals in your community don't have to be difficult to be successful. Most people want to be involved but don't know how to get started. A simple "ask" may be all it takes to get started. Different approaches and strategies are often called for in different circumstances.

One strategy may start with a conversation that includes establishing future relevance on a personal level. What is relevant for success in their future and life in general? Another strategy may include piquing their interest. What is one thing that can help them be successful? Still another is to explain the big picture. The "why" can be just as important as the "when", whether it relates to being a better citizen or a more effective professional. Help them find a way to connect, whether it is volunteering, joining an organization, attending a meeting, or reaching out to experts.

Demonstrating confidence, persistency, and the ability to focus on positive proactive solutions can lead to engaging, role-modeling behavior that enhances involvement. A welcoming environment encourages acceptance and affirmation. Creating opportunities that are active, collaborative, and enriching will go a long way toward motivating individuals to be engaged. Engagement reflects a sense of community and personal caring among adults and promotes integration between personal and work life.

Mentoring our future leaders is our responsibility in everyday practice. Mentoring is the act of giving help or advice to a less experienced person and being concerned with the success of that person. A mentor gives intimate, individual, face-to-face support while educating and advising. A mentor invests oneself to positively influence others, gaining self-satisfaction in the knowledge that they are empowering and bringing out the best in the individual.

Anyone can be mentored, at any point in their career, if they desire to improve any aspects of what they do as a professional. In the same way, anyone can mentor. Establishing a mentor–mentee relationship is a process of stages:[3]

- Stage one is building trust by planning meetings, getting to know each other, setting boundaries, recognizing strengths, and learning to communicate with each other.

about the author...

Karen Schell, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS is an assistant clinical professor in the respiratory care department at the University of Kansas Medical Center School of Health Professions in Kansas City, KS, and president of the AARC.

- Stage two explores possibilities such as specific activities of interest, setting realistic goals, and bridging differences.
- Stage three navigates rough spots, such as uncomfortable feelings that may arise, commitment, seeking outside support, and clarifying boundaries.
- Stage four reflects on goals achieved, celebrates accomplishments, builds the bond and connection formed, and prepares for the close of stages 2 and 3.

Benefits of mentoring include increasing support between mentee and mentor, promoting longevity through a strengthened workforce, improving the work environment and recruitment process, effecting growth and development in staff members' personal and professional lives, and creating a mentoring legacy as mentees ultimately become mentors.

Successful people never reach their goals alone!

—Pennie Sellsler Branden

It is clear that the respiratory care profession has a lack of engagement as noted by the low percentage of licensed practitioners who are members of our professional Association. In addition, we have not done a good enough job of mentoring our future leaders. We have not taken the time to seek out opportunities to invite our colleagues, students, and peers to participate and grow with the organization, which I see in the lack of participation at the state level with our affiliates. We tend to dwell on our deficiencies and view situations as being difficult. We need to change that mindset and be positive, proactive, and solution-focused to increase both motivation and engagement by our members, students, and non-members.

How can you help? As I said, motivating and encouraging engagement is not easy. You are key in playing a vital role in cultivating engagement and growth among our profession.

How, you ask?

- Be willing, and prepare both physically and mentally; feel good about yourself and what you have to offer.
- Be welcoming to all individuals from all cultures. Everyone should feel that they are in an environment where they are accepted and affirmed.
- Enhance self-belief in those around you. Everyone needs to act as their own learning agents working toward goals important to them.
- Develop a sense of competence, which fosters self-determination that leads to engagement.
- Create challenging and enriching experiences that stretch them to reflecting, questioning, evaluating, and making connections.

My challenge to you over the next few months is to seek out an individual to mentor and ask them to become engaged in their profession, whether it is locally, with the state society, or at a national level. Whom can you mentor? I also ask that you seek out a mentor in your area to help you grow personally or professionally. We all have opportunities in our own back yard to grow in our chosen field. Take the first step — reach out and become engaged. I am confident that we can grow the profession by growing each other. Take a chance and step out of your comfort zone. Reach out to students in your area, co-workers, non-members and members in your state society, your supervisors, your managers, and educators in your area schools. Contact me if you have a special interest or are looking for a mentor or mentee. I would be glad to help. You can reach me at karen.schell@aarc.org. ■

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Confirmation Bias

by Anthony L. DeWitt, JD, RRT, FAARC

From time to time I sell things on eBay that I no longer need. Several weeks ago, after it had been on eBay forever, I took off an item and put it in a pile to go to Goodwill. But I later took it out of the pile. I remembered putting it in the pile, but not taking it out.

So, this week, when someone inquired as to whether I still had that item, my initial response was "no," but I told the person I would check. I asked my wife, who said she had not seen it, and perhaps I had donated the item. I became convinced I had donated the item because it wasn't in any of the places I thought it should be. Then, when looking for something else, I found the item.

I was a victim of my own confirmation bias. Confirmation bias is the tendency to interpret new evidence as confirmation of one's existing beliefs or theories. In my case, when I could not find it where I thought it should be, this confirmed my bias that I had donated the item. Confirmation bias is a normal human tendency. As humans, we like to think we're right. We do this in spite of knowing that we are often wrong. With inconsequential items being sold online it hardly matters. But when caring for patients, where lives are at issue, it clearly does matter.

Many malpractice cases arise out of confirmation bias. Either because of prior care experiences or a narrowed clinical focus, clinicians tend to evaluate information based on their experiences and make decisions with a belief that they have correctly evaluated the problem. When patients come in with asthma-like symptoms, most of the time they have asthma. But sometimes they have mitral valve issues. It takes a patient-centered approach to patient management for the clinician to reach the diagnosis. But the first thing it requires is clinical curiosity.

I recall a case in which, following a procedure for the implantation of a dual-chamber pacemaker, a family practice physician is confronted with a patient with a steadily worsening cough. His initial approach is cough suppressants and relief of upper respiratory infection symptoms. When the situation is worse two days later, the physician prescribes antibiotics for bronchitis. When that doesn't work, he admits the patient to the hospital. During the admission workup, the physician discovers that the cardiologist implanted the dual-chamber pacemaker such that the atrial lead was pacing the ventricles. He had been treating congestive heart failure as bronchitis because, in his experience, people with coughs tend to have bronchitis. Did the patient die? While it is an understandable error, it bears repeating that clinicians must be clinically curious and unwilling to accept easy answers, particularly when easy answers do not produce clinical improvement. If you miss the first pitch, you had better hit the second out of the park!

Late in my career, a patient came in who had been making polyvinylchloride (PVC) furniture in his basement during the winter. He was using a tool he built himself to heat the pipe with a blowtorch and then bend it into shape for lawn furniture. Normally he worked outside. On this day it was cold and windy, and he worked inside his basement.

A subtle side effect of incomplete combustion of PVC (for example, heating it with a blow torch) is that the PVC produces COCl, or phosgene gas.[1,2] Phosgene is

about the author...

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deadly because it is poorly soluble. Like chlorine gas, it is an irritant that produces hydrochloric acid when it comes into contact with water. But unlike chlorine gas, which makes hydrochloric acid on contact with the nasal mucosa because it is quickly soluble, the acid produced by phosgene isn't produced in the upper airway (such that someone exposed would suffer nasal irritation and move away from the hazard). It is produced in the lungs when the compound goes into solution. It killed thousands during World War I as a chemical weapon, and its use was later banned in wartime.

When the patient arrived at the emergency department, he presented with pulmonary edema, hypoxia, and tachypnea, and the cardiologist's initial diagnosis was that the man must be having a severe myocardial infarction. He was taken to the cardiac catheterization lab, and when evaluated, they found that his arteries were clean with no narrowing. The cardiologist was flummoxed. He gave drugs to improve contractility, increased oxygen to 100%, intubated the patient, and placed him on a ventilator, where he continued to deteriorate. No one could figure out what was going on with the patient. He died several hours after intubation because his lungs quit exchanging oxygen. A drop in PAO_2 is potentially fixable but a complete failure of gas exchange is not.

Only after taking a more complete history and doing research into toxic inhalants did we discover the cause of the patient's problem. On autopsy, the patient had diffuse lung injury from phosgene inhalation. Nothing could have been done for him because by the time he had started to suffer symptoms, the lung injury was likely already fatal. Perhaps a warning on the PVC pipe would have been effective, but perhaps not. Given the unique situation, the cardiologist missing the diagnosis is completely understandable and would not serve as a basis for a malpractice action.

Looking back at the case of the patient with the incorrectly placed pacemaker, the family practice doctor shared some of the blame. An earlier diagnosis might have saved the patient's life. But he had never seen a situation where the pacemaker had been implanted incorrectly, and he did not have the experience to suspect it. His only error was not contacting the cardiologist sooner. He was not sued because the patient's family considered him a dear friend.

The problem with confirmation bias is that it frequently arises in those situations where more careful review of the basics (history, physical, lab work) would allow for multiple potential diagnoses, and instead of ruling out the life-threatening diagnosis first, clinicians opt to rule in the easiest diagnosis and work to confirm it. Take the case of a patient who went to the emergency department with chest pain and epigastric distress. When his epigastric distress was relieved by antacids containing lidocaine, he was sent home with a bottle of Maalox. Unfortunately, no one ruled out a myocardial infarction, and he was found, quite dead, next to an open bottle of Maalox liquid. The quick answer relieved the symptoms, and confirmation bias sent the patient home. The hospital and physician ultimately settled the lawsuit.

During my respiratory therapy education, an older physician who had seen more than most of us see in our lifetimes encouraged us to keep physicians and nurses honest by always questioning the diagnosis (respectfully) and always being prepared to offer alternative explanations for events and symptoms. Being clinically curious — unwilling to accept easy answers and being willing to look for other causes — is one of the best ways to combat confirmation bias. ■

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Clinical Perspectives

Implementation Science and Respiratory Care

by Tom Malinowski, MSc, RRT, FAARC

The situation is not uncommon: After returning from a professional conference with great "best practice" information, the attempt at launching an evidenced-based intervention strategy was unsuccessful. Despite considerable information that supported the change in practice, the new approach was not implemented in your community or facility. Sound familiar? You are not alone. Health care providers, administrators, and policy makers have experienced the same for decades. We often are challenged not with questions about the value of the evidence, but with how to implement this new information in our own environment.

The what and why of implementation science

The area of study that looks specifically at how to apply changes to clinical practice is known as "implementation science". Implementation science was first described more than 10 years ago as "the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services".[1] Implementation science includes the study of influences on health care professionals and organizational behavior. The objective is to increase the application of the best science and practices, and to make those practices more common. Unlike clinical trials, which typically focus on the health effects of evidence-based practices, implementation studies focus on the rate and the quality of use of evidence-based practices.[2] The study of factors and influencers helps direct the adoption of best evidence into routine clinical practice.

about the author...

Tom Malinowski, MSc, RRT, FAARC, is director of Pulmonary Diagnostics and Respiratory Therapy Services at University of Virginia Medical Center in Charlottesville, VA. He has been an active member of the respiratory care profession and the AARC for over three decades and has served on the Board of Directors for both the Virginia Society and California Society for Respiratory Care, as well as served on the AARC House of Delegates.

Implementation studies have not been supported as robustly as other areas of research.[3] Respiratory care research has traditionally focused on a comparison between interventions rather than on how clinical practice has changed as a result of new evidence. For example, the use of low tidal volume strategies with mechanical ventilation is supported as best practice by multiple well-designed, randomized, clinical trials and meta-analyses. An implementation study would not compare which tidal volume is better, but it might look at the percentage of patients being ventilated within the targeted tidal volume range, or how to apply low tidal ventilation strategies consistently in the emergency department or in the operating room.

The goal of implementation science is not to identify the best evidence-based practices but to determine how to apply such practices effectively. Multiple factors influence the full and effective use of innovations, including the characteristics of the intervention, the patient population served, the organizational climate, staff and patient educational needs, and internal agreement and process support. These elements, either individually or in combination, are then subjected to continued study to improve the implementation.

Building on clinical practice guidelines

The foundation for implementation science is grounded in our collective professional efforts to promote the application of research findings in evidence-based practice. Clinical practice guidelines (CPGs) developed and published by the AARC and other

professional societies are a great visible example of this. Despite these well-crafted guidelines, variations in application exist across all areas of health care. The effort required to develop CPGs is enormous, and their value is considerable, but publication of important CPGs is not sufficient by itself to change practice. Other barriers, including organizational alignment, internal and external support, and patient/provider buy-in, need to be overcome prior to adoption. Implementation science also recognizes that the answers to overcome some barriers may not be known.

The inconsistent implementation of evidence-based CPGs nationwide is widely recognized as a challenge spanning public health policy, organizational procedures, and patient education.[3] Efforts have been underway to help address this shortcoming. For example, the 2008 National, Heart, Lung and Blood Institute Implementation Science Work Group helped promote and propagate strategies that are effective in improving the delivery of care. A recent systematic review by this group focusing on four adoption and effectiveness strategies identified that audit, feedback, and educational outreach visits were generally effective in improving clinical outcomes and processes of care.[4]

Respiratory therapy application

What unique areas or therapies within respiratory care would benefit from rapid uptake? What are the opportunities within our departments or organizations that would benefit from a systematic application? Each department and organization will need to identify which items warrant investigation and effort. Some institutions may find that their opportunities lie within the refinement or elimination of present practices regarding supplemental oxygen therapy for patients at risk for myocardial infarction, the use of incentive spirometry by all postoperative patients, positive pressure adjuncts in the same patient grouping, or cardiac telemetry until patient discharge. These are just a few examples, and the areas of opportunity will vary with each institution.

Pulmonary rehabilitation (PR) is one example of an area that could benefit from directed implementation research. The clinical benefits of PR programs have been studied extensively. A Cochrane meta-analysis published

in 2015 concluded that PR programs, when applied to patients who have experienced hospital admission for exacerbation, provide moderately large and clinically significant improvements in quality of life, exercise tolerance, and readmission reduction.[5] We know it works, so the need for additional clinical comparative information is not necessary. What is needed is to better understand the ideal length, location, format, and supervision for PR programs. This emphasis was relayed by the American Thoracic Society/European Respiratory Society Policy Statement on enhancing implementation, use, and delivery of PR programs: "PR remains grossly underutilized worldwide . . . . It is frequently not included in the integrated care of patients with chronic respiratory disorders and is often inaccessible to patients. Indeed, a substantial gap exists between knowledge regarding the science and benefits of PR . . . and the actual delivery of PR services."[6] In this case, implementation research might focus on how to increase enrollment or adherence, the factors that influence maintenance programs, or the role of support structures.

De-implementation

Implementation research can also focus on the "un-doing." Value is gained through evidenced-based de-implementation of diagnostics or therapeutic interventions that are not beneficial. The Quality Enhancement and Research Initiative (QUERI) of the United States Department of Veterans Affairs has provided a model for de-implementation with their COPD Direct initiative. QUERI's purpose is to accelerate clinical application and translate clinical research and best practices to more routine application. The COPD Direct initiative identified ineffective or contraindicated therapies and developed de-implementation strategies to apply changes. QUERI investigators conducted surveys and patient/provider interviews to understand their experiences with COPD management. Pulmonary specialists then used an e-consult service to educate patients and care providers about potential harms from inhaled corticosteroid use and offered alternative suggestions. The response from primary care providers to the proactive e-consult has been overwhelmingly positive and has changed COPD management for the studied patients.[7]

Health care value is maximized when best practices are adopted. Implementation research is the study of factors that influence those best practices. Respiratory therapy is a field rich in opportunity to examine propagation of best practices. Individual departments can contribute to implementation research by focusing on initiatives that best fit organizational need and capacity. Select initiatives which address your patient needs and provider support, and align with the operational structure and goals. ■

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Chronic Disease Manager

Explaining Spirometry to a Primary Care Provider To Avoid Misdiagnosis

by Amanda Clark, RRT

Spirometry may be one of the most grossly overlooked and underutilized procedures in the diagnostic process at the primary care level. When reading scientific studies and best practices, many clinicians' eyes glaze over, and it is easy to fall victim to paralysis-by-analysis or to just opt out altogether and refer out to subspecialty. With three straightforward rules, spirometry data interpretation can be simple for busy providers. If you can answer the following three questions, you will have the fundamentals of spirometry interpretation down!

Of course, before you apply these rules, take the all-important first step to verify you're working with the right patient. Confirm the patient's name, age, height, weight (if used), ethnicity, and gender group. If any of these are wrong, the reference values will be wrong and the results may be misinterpreted. If this is wrong, nothing else matters. Any fields with an error must be corrected before the primary care provider (PCP) can continue interpretation.

about the author...

Amanda Clark, RRT, is CEO and founder of Carolina Diagnostic Solutions, LLC, in Columbia, SC.

Question #1: Did they pass?

When working with providers, it is imperative to encourage them to make a quick visual assessment to determine whether the results are usable (per American Thoracic Society standards) prior to spending valuable time on interpretation strategies. The National Institute for Occupational Safety and Health has created a useful poster to help providers assess the result of a spirometry test — I recommend posting this on the testing station as a readily available guide as the test is administered.[1] The providers will need to glance at the flow-volume graph, the volume-time graph, and the numbers as they check the following items. Was this a complete testing session? Were three technically acceptable efforts obtained (e.g., no false start, no artifact, exhalation was complete)?[2] Are two efforts within 10% to show reliability and repeatability (hint: they should be similar when overlaid on the flow-volume graph)?[2] Did the patient exhale to flow plateau? This can be seen on the volume-time graph and verified by looking at the forced expiratory time value (hint: minimum forced expiratory time is 3 seconds for children under 8 years and 6 seconds for anyone older).[2] Did the effort start without hesitation? It's best to make sure that the volume-time graph is initiated at zero flow.[2]

Many spirometry software packages use a grading system that indicates the quality of effort on the report. For providers interpreting a test, it's important to have a basic understanding of the spirometry software's grading scale if they are depending on it for the assessment. When viewing the report, look for notes from the test administrator (preferably a respiratory therapist, of course) to verify the quality of the test and that patient effort was optimal. If poor patient effort is noted, the interpretation must reflect that.[3]

If the answer to question #1 is no, proceed no further. If the patient was capable, check equipment or retrain staff.[3] Keep the NIOSH poster available during testing to correct any patient errors and ensure you get optimal results.[1]

Question #2: Are the results normal or abnormal?

After the test is deemed worthy of interpretation, the next step is to determine whether the results are normal or abnormal. This is typically the easiest portion of the process because providers are accustomed to viewing labs with associated value ranges. Three results on the report are key: FVC, FEV_1, and the FEV_1/FVC ratio. In primary care, many providers refer to the percent of predicted values for these key results for a quick analysis

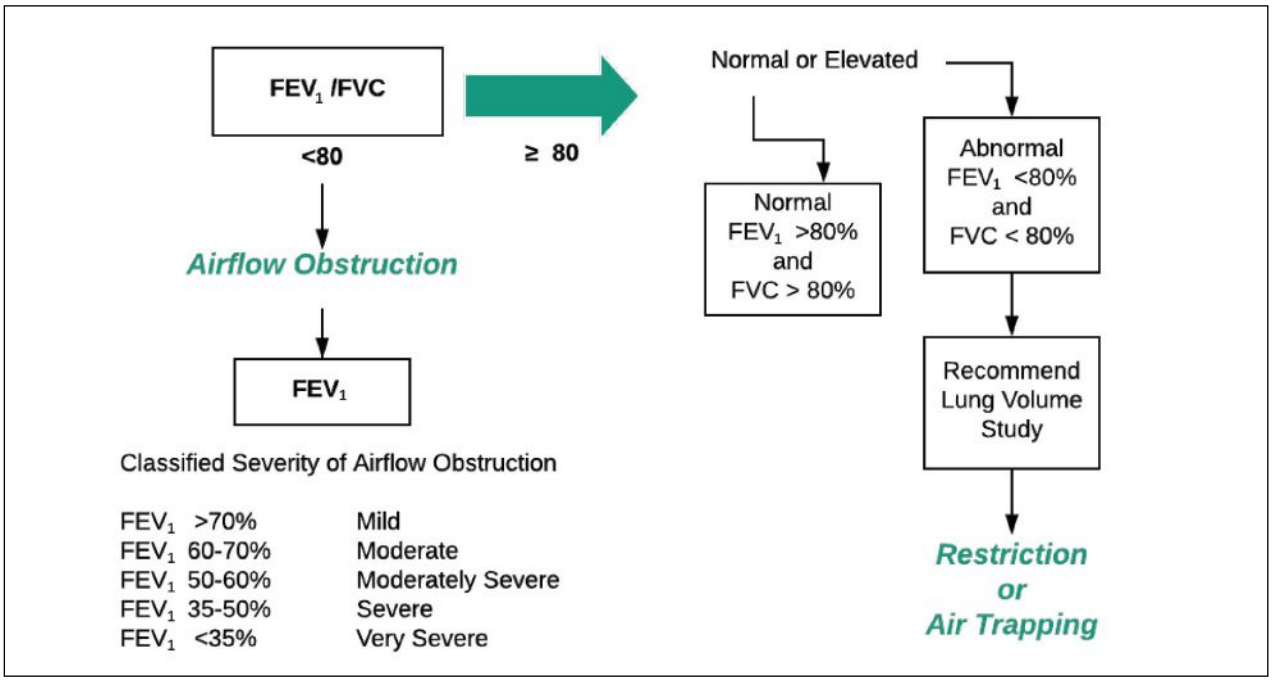

Figure 1. Severity flow chart. Modified from Reference 4.

of the overall test. The strategy is simple: if the FEV_1 or FVC are above 80% of the predicted value for a patient, then the results are likely normal.[4] If either value is less than 80% of the predicted value, then the provider must determine whether the results are obstructed or restrictive in nature. If all of the values are decreased, the FEV_1/FVC ratio will clarify the question.[3,4] When assessing the FEV_1/FVC ratio, it is important to use the actual value of the ratio rather than the percent predicted value of the ratio (which may be listed on the report) to avoid error. If the ratio is less than 0.80, then you have an obstructive pattern. This value can be a source of confusion because GOLD and other clinical resources have sited obstruction at a ratio of 0.70 or less, which is true when considering COPD. However, a ratio of 0.80 or less is relevant to pediatric asthma.[5] In addition, the shape of the flow-volume loop may confirm this if the expiratory limb has a concave shape, because obstruction is a flow problem and the volume-time curve ascends in a more dramatic right angle.[4] However, if all (or most) values are decreased while the FEV_1 /FVC ratio is above 0.80, this likely indicates a restrictive pattern.[4] To confirm, check the shape of the flow-volume loop; it should have a rounded shape but will appear smaller than the predicted scale, revealing a volume problem.[4]

If a bronchodilator challenge was performed, the post-bronchodilator results should be used in this assessment. All patients should be considered for bronchodilator challenge on initial spirometry assessment.[4] The benefit of this is two-fold in that it determines whether the therapy is beneficial and confirms disease diagnosis; establishing reversibility suggests asthma, and fixed obstruction is seen in COPD.[4] A positive response is defined by a change in FVC or FEV_1 of 12% or more.[4] It is also important to remind providers that normal spirometry with no response to bronchodilator does not rule out a diagnosis of asthma.[4] Further challenge testing may be needed to establish the diagnosis.[4] This is why it is recommended to utilize spirometry software with built-in interpretation. This is a practical suggestion and does not replace clinical judgement.[4]

Question #3: How bad is it?

After determining that the results are abnormal and deciding what type of disease process is occurring, the final question is about severity. A flow chart like that in Figure 1 can help busy providers recall how to classify and when to send for further evaluation.[3,4] Consider posting this decision tree to your workstation for quick reference.

As respiratory therapists, we should be prepared to discuss the benefits of further evaluation and criteria for referral, some of which are listed here:

- Absent or inconclusive response to medication or therapy.[4]
- Challenge testing may be required if clinical symptoms (e.g., cold air, exercise, etc.) persist but spirometry results are normal.[4]

- Abnormal results such as restrictive ventilatory defect would require a lung volume study (i.e., total lung capacity) to show the degree of severity and note whether diffusion capacity is affected. For obstructive defects with no prior diagnosis, a full study with lung volume and diffusion capacity would help determine damage and establish baseline.[4]

Perhaps this is how respiratory therapists can spark change in the primary care market and build a rapport for additional conversations that my lead to long-term opportunities. So, go out and strike up a conversation and help advance our beloved profession! ■

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Carolina Diagnostic Solutions is a dealer/distributor for Vitalograph, Ltd and Morgan Scientific. The author is also a consultant for Encore Healthcare and a reviewer/content provider for Pritchett and Hull Associates.

Name Droppers

AARC Times has interviewed hundreds of people over the years for stories that have graced the pages of this magazine. Most of them have been respiratory therapists who were practicing out in the trenches to care for people with lung disease.

But we've featured articles on a great many leaders in the profession, too — people who helped shape respiratory care as we know it today. From our story in the July 1979 issue of *AARC Times* on George Kneeland, who spearheaded the formation of the AARC back in 1948 and served as its first president, to our latest Jimmy A. Young Medalist article in the October 2018 edition on Trudy Watson, BS, RRT, who established our Virtual Museum, we have made it a point to profile respiratory therapists and physicians who had a major role in creating, changing, improving, or otherwise significantly impacting the profession.

Most famous textbook author

One of our favorite big-name interviews took place way back in 1984, when we published a story on someone whose name has become synonymous with respiratory care — not only for the plenary session delivered in his honor every year at the AARC Congress, but also because of his iconic textbook, which has educated thousands of RTs. None other than Donald F. Egan, MD, was featured in a Q&A discussing his wide-ranging association with the profession and where he saw it moving in the future.

Like many of the stories *AARC Times* has published over the years, the article came to us from an AARC member. At the time, Darel Buchholzer was a newly minted RT who, when he needed to fulfill a course requirement for the last quarter of his certification program, decided he would track down the famous physician and gather his thoughts on a plethora of issues affecting his new profession.

Nothing was off the table. Buchholzer asked Dr. Egan to comment on everything from the growth of respiratory therapy since the first edition of *Egan's Fundamentals of Respiratory Care* was published (as it turned out, Dr. Egan was delighted by the progress), to whether he thought physicians were becoming more accepting of respiratory therapy (he was fairly adamant that much more work needed to be done), to whether the current certification plus registry training system should be phased out and replaced by registry-only training (no, he said, although he noted that it was not a popular thought or one that was likely to survive).

More is not always better

Buchholzer also asked Dr. Egan to comment on all of the new technological advances being made to mechanical ventilators at the time. Given our 21st-century fascination with high tech, some of us might be a little surprised by his answer. "To be honest with you, I don't think we need it at all . . . for the patient who is struggling to breathe, it isn't necessary to do all these things," said Dr. Egan. "You have to figure out an easier way to help that patient breathe if he is going to have some hope of survival."

Of course, some of what he went on to say about all those advances might also strike a chord in today's cost-conscious health care arena. "With what we're doing now, maybe a few more patients are surviving, but I don't think just getting bigger and more elaborate machines at multi-costs increases the effectiveness," he said. "This isn't solving the problem."

Other thoughts he shared definitely still resonate today. On continuing education, Dr. Egan noted, "I believe that continuing education should be mandatory in all aspects of health care. People treating the sick must be sure they are remaining competent in their areas. Regular continuing education is the only rational answer."

On the topic of aerosol therapy, he came down squarely on the side of more intense care by respiratory therapists. "I think it is much better to do these treatments just twice a day and do them thoroughly than

to simply distribute them and let the patient give his own treatment four or five times a day. We can reduce the frequency and improve the effectiveness of many things we do this way."

In at least one instance during the interview, Dr. Egan seemed to be looking into a crystal ball as well. In a question referring to the provision of respiratory care outside of the acute care hospital, he noted, "Where do patients live? They live at home. They go into the hospital for three or four weeks and they do fine; they go home and in a week they are just like they were before."

That certainly presaged the current focus on reducing unnecessary readmissions and the critical role patient education plays in the process. Cautioned Dr. Egan, "In home care, you have to make sure that whatever therapy the patient is on, he does it whether he is alone or under direct supervision and that he does it properly. It is very important that the value of the care is constantly reiterated to him."

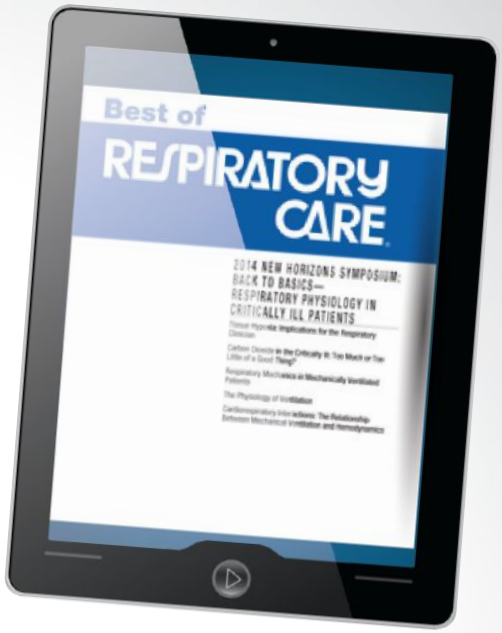
Read more in our digital edition

AARC Times was proud to be able to bring this interview with the person many have called the father of modern respiratory care to readers back in 1984, and we're even prouder to be placing the entire interview in the February edition of the *AARC Times* Digi Mag for the latest generation of respiratory therapists to enjoy.

So head over to AARC.org and click on the *AARC Times* icon on the bottom of the page to catch up on this great piece of respiratory therapy history. While you're there, check out the entire digital edition this month to see how our new format is not only maintaining the integrity of our print edition, but also taking it to new heights as well. ■

The Best of Respiratory Care eBooks

The Best of Respiratory Care eBooks are conveniently packaged manuscripts previously published and now available in electronic format for quick and easy reference. eBooks are based on themed topics, conference symposia or Journal Conferences, and can be immediately downloaded and saved on your computer or mobile device.



30th Annual New Horizons Symposium with Bonus Content – $2.99

Acute hypoxemic respiratory failure (AHRF) that is refractory to supplemental O2 is caused by intrapulmonary shunting of blood resulting from airspace filling or collapse. Treatment usually requires mechanical ventilation. This e-book looks at a variety of treatment strategies from the 30th Annual New Horizons Symposium and two recent published manuscripts.

2013 New Horizons Symposium – $2.99

Evidence-based medicine (EBM) is the integration of individual clinical expertise with the best available research evidence from systematic research and the patient's values and expectations. Although all tenets of EBM are not universally accepted, the principles of EBM nonetheless provide a valuable approach to respiratory care practice.

2014 Best of Aerosol Therapy – $4.99

Management of acute and chronic respiratory conditions with inhaled medications are a cornerstone of the profession of respiratory care. This eBook contains the Top 7 must-read manuscript selections from 2014 in the clinical area of aerosol therapy.

2014 New Horizons Symposium – $2.99

There are various aspects to the basics in respiratory physiology in the mechanically ventilated, critically ill patient. This covers the nuances of oxygenation, ventilation, lung mechanics, respiratory physiology and cardiopulmonary interactions. Detail reviews of management techniques and interpretation of clinical data is discussed in detail.

Airway Management Clinical Practice – $4.99

Management of the artificial airway including secretion removal is a core skill of the respiratory therapist. The implementation of the AARC CPG has been shown to reduce complications and choice of suction catheter size remains important. Biofilm accumulation on the artificial airway is a key step in the development of pneumonia and prevention or removal is a new area of interest.

Airway Management Devices – $4.99

Management of the artificial airway is a core skill of the respiratory therapist. Securing the tube and cleaning the airway are time-honored techniques that have new device options. The implementation of the AARC CPG has been shown to reduce complications and choice of suction catheter size remains critical.

Airway Management Tracheostomy – $4.99

It is important for clinicians to appreciate the nuances of care for patients with a tracheostomy. They must know when a tracheostomy is indicated, how to select the proper device, how to adequately humidify the inspired gas, how to manage the wound, and how to recognize when the tube can be removed (decannulation).

Year in Review 2014 – $4.99

This e-book in the Best of RespiratoryCare contains a series of papers that were comprehensive reviews from manuscripts published in various peer reviewed journals in 2014 covering various aspects of airway clearance procedures and devices, aerosol delivery devices, the diseases of asthma and COPD, mechanical ventilation and patient safety.

See the eBooks category in the AARC store for a full list of eBooks currently available • Visit: c.aarc.org/go/ebook-1


WELCOME TO THE 64TH INTERNATIONAL
RESPIRATORY CONVENTION & EXHIBITION
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AARC Congress 2018:
The Complete Package

by Debbie Bunch

Respiratory therapists and other lung health professionals from across the country and around the world converged on Las Vegas, NV, last Dec. 4–7 for what proved to be the complete package when it came respiratory care education, research, and technology. From a program full of the latest thinking on everything from aerosol therapy to mechanical ventilation, to an Open Forum featuring original research conducted by and for RTs, to an Exhibit Hall packed with all the major companies in the business, the meeting had it all.

An all-star lineup of speakers ensured attendees got to hear from thought leaders in the profession, and the special events associated with the meeting addressed everything from patient advocacy to international respiratory care. Extracurricular activities like the Welcome Party and the Sputum Bowl gave everyone a chance to build camaraderie with their peers, and the networking opportunities were unparalleled.

"The AARC Congress always breathes new life into the respiratory care profession and those who come to learn about the most effective ways to care for people suffering from cardiopulmonary conditions," says AARC President Karen Schell, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS. "The 2018 meeting was no exception, and everyone who was there walked away with a renewed passion for the profession and the role it plays not only in the health care system, but in the lives of patients and families living with lung disease."

The following pages give some of the highlights of AARC Congress 2018. ■

Photos by Lennie Sirmopoulos, Convention Photography, Tustin, CA

And the Winners Are…

Respiratory care professionals who have gone above and beyond for people with lung disease received a host of honors at AARC Congress 2018.

Photos by Lennie Sirmopoulos, Convention Photography, Tustin, CA

Kudos to the Top Performers in Respiratory Care

Everyone from students who are already excelling in the profession to researchers conducting the studies we need to validate our practice were honored for their accomplishments as the AARC, the American Respiratory Care Foundation, and the National Board for Respiratory Care (NBRC) recognized a host of standout professionals during the Awards Ceremony that kicked off the Congress. Award recipients included:

- Jimmy A. Young Medal: Trudy Watson, BS, RRT, FAARC
- Life Membership: Frank R. Salvatore Jr., MBA, RRT, FAARC; Shelley C. Mishoe, PhD, FAARC, FASAHP
- Honorary Membership: Grace Anne Dorney Koppel, MA, JD
- Forrest M. Bird Lifetime Scientific Achievement Award: Richard H. Kallet, MS, RRT, FAARC, FCCM
- Thomas L. Petty MD Invacare Award for Excellence in Home Respiratory Care: Brooke Yeager McSwain, MSc, RRT
- Dr. Charles H. Hudson Award for Cardiopulmonary Public Health: Suzan Michelle Collins, BSRT, RRT
- Mike West MBA RRT Patient Education Achievement Award: DeDe Gardner, DrPh, RRT, FAARC, FCCP
- NBRC Gary A. Smith Educational Award for Innovation in Education Achievement: Samantha Davis, MS, RRT-NPS, AE-C, CHSE
- Mitchell A. Baran Achievement Award for Clinical Excellence in Aerosol and Airway Clearance Therapies: Arzu Ari, PhD, RRT, PT, CPFT, FAARC
- Philips Respironics Fellowship in Mechanical Ventilation: Ivan G. Lee, MSc, RRT, RRT-NPS, RRT-ACCS, RPSGT
- Charles W. Serby COPD Research Fellowship: Gail S. Drescher, MA, RRT, CTTS
- Vyaire Fellowship for Neonatal and Pediatric Therapists: Robert Gillette, MD
- Jeri Esierman RRT Professional Education Research Fellowship: Aya Matsushima, RRT, BSRT
- William F. Miller MD Postgraduate Education Recognition Award: Craig R. Wheeler, MS, RRT-NPS
- NBRC Gareth B. Gish Memorial Award: Kevin P. Collins, MS, RRT, RPFT, AE-C
- Morton B. Duggan Jr. Memorial Education Recognition Award: Kimberly Stokes, RRT

President Brian Walsh presented the Jimmy A. Young Medal to Trudy Watson.


Michael Amato of the ARCF (left) presented Awards to Kevin P. Collins and Kimberly Stokes.

The Forrest M. Bird Lifetime Scientific Achievement Award went to Richard H. Kallet.

Gail S. Drescher received the Serby COPD Research Fellowship.


DeDe Gardner received the Mike West Patient Education Award.

- NBRC William W. Burgin Jr. MD and Robert M. Lawrence MD Education Recognition Award: Joshua Lyons, BSRT, RRT
- Jimmy A. Young Memorial Education Recognition Award: Alex Lopez
- FAARC: Ariel Berlinski, MD, FAARC; Ricky W. Bowen, MPM, RRT, RCP, FAARC; Brian Cayko, MBA, RRT, FAARC; Mark S. Rogers, BS, RCP, RRT, RRT-NPS, FAARC; Katie Sabato, MS, RRT, RRT-NPS, FAARC; Wadie Williams Jr., MS, RRT, CerAT, MEMS(S), FAARC; William V. Wojciechowski, MS, RRT, FAARC
- International Fellows: Sangit Kasaju, Neelum Singh, Liang Xu, Julie Essiam
- Mallinckrodt Best Paper Award by Best First Author: Jeffrey Bilharz, RRT, RRT-NPS
- Draeger — Shreyas Roy MD Memorial Literary Award: Richard H. Kallet, MS, RRT, FAARC, FCCM
- Specialty Practitioners of the Year: Adult Acute Care, Thomas Piraino, RRT, FCSRT; Education, Ellen A. Becker, PhD, RRT, RRT-NPS, RPFT, AE-C, FAARC; Neonatal-Pediatrics, Ryan M. Sharkey, MSc, RRT, RRT-NPS; Respiratory Care Management, Kim Bennion, MsHS, RRT, CHC; Post-Acute Care, Ronda Z. Bradley, MS, RRT, FAARC; Respiratory Diagnostics, Jeffrey Haynes, RRT, RPFT, FAARC; Sleep, Peter Griffin Allen, BSRC, RRT, RRT-NPS, RRT-SDS, RPSGT, RST; Surface & Air Transport, Tom Pietrantonio, BSRT, RRT, RRT-ACCS, NREMT
- Commission on Accreditation for Respiratory Care — Ralph Kendall MD Outstanding Site Visitor of the Year Awards: Marby McKinney, MEd, RRT-NPS, AE-C; Joseph Coyle, MD
- NBRC — Albert H. Andrews Jr. MD Memorial Award: Neal H. Cohen, MD, MPH, MS
- Summit Award for Outstanding State Society: Florida Society for Respiratory Care
- Outstanding Affiliate Contributor: Raymond Pisani BS, RRT-NPS, RRT-ACCS, FAARC
- Jerry Bridgers Delegate of the Year: Lanny Inabnit, MSc, RRT-NPS, RRT-ACCS
- Bill Lamb Award for Community Service: Len Picha, RRT, CPFT
- BOMA Award: Mike Davis, MD

CoARC Outstanding Site Visitor Awards went to Joseph Coyle and Marby McKinney.


The Albert H. Andrews Jr. MD Memorial Award went to Neal H. Cohen.


Brooke Yeager McSwain was honored with the Dr. Petty/Invacare Award for Excellence in Home Respiratory Care.


The Dr. Charles H. Hudson Award for Cardiopulmonary Public Health was awarded to Suzan Michelle Collins.


New Fellows of the AARC: Ariel Berlinski, Ricky W. Bowen, Brian Cayko, Mark S. Rogers, Katie Sabato, Wadie Williams Jr., William V. Wojciechowski.

NBRC Gary A. Smith Educational Award for Innovation in Education Achievement went to Samantha Davis.

Raymond Pisani (right) received the Outstanding Affiliate Contributor Award.

Delegate of the Year went to Lanny Inabnit.

Members of the Florida Society for Respiratory Care received the Summit Award.

Specialty Practitioners of the Year: Adult Acute Care — Thomas Piraino, Education — Ellen A. Becker, Neonatal-Pediatrics — Ryan M. Sharkey, Respiratory Care Management — Kim Bennion, Post-Acute Care — Ronda Z. Bradley, Respiratory Diagnostics — Jeffrey Haynes, Sleep — Peter Griffin Allen, Surface & Air Transport — Tom Pietrantonio.

The Best in the Business

AARC members vote each year for the top companies in respiratory care, and these winners are honored with our annual Zenith Awards at the Congress. The honorees for 2018 were Monaghan, Aerogen, Philips, Fisher and Paykel, Tri-anim and Draeger.

The AARC's Zenith Awards are presented to the companies that AARC members believe stand out from the crowd based on the quality of their products, accessibility of their sales staff, responsiveness, service record, truth in advertising, and support of the respiratory care profession.

Aerogen

Monaghan

Philips

Draeger

Fisher and Paykel

Tri-anim

Standing Up for Patients

During the Fourth Annual National Respiratory Patient Advocacy Summit, Tonya Loftin, RRT, director of population health outcomes for Eventa, LLC, received the 2018 Respiratory Patient Advocacy Award. The AARC and The FACES Foundation jointly present this award each year to recognize those therapists who step outside of their normal job responsibilities to serve their patients and their families. The award grew out of the desire of FACES Foundation founder Sharman Lamka to recognize the important work RTs do in the health care arena. The FACES Foundation first began honoring the work of RTs in 2006 in memory of Lamka's husband Phil, who received compassionate care from therapists during his battle with interstitial lung disease. The event was supported by sponsorships from Boehringer Ingelheim (Gold Sponsor); Sunovion, Gilead, GSK, and Genentech (Silver Sponsors); and Vertex, Actelion, and The Faces Foundation (Contributing Sponsors).

Sharman Lamka presented the Patient Advocacy Award to RT Tonya Loftin.

Arzu Ari received the Mitchell A. Baran Aerosol Therapy Award.

The Jeri Eiserman RRT Professional Education Research Fellowship was awarded to Aya Matsushima.

The Philips Respironics Fellowship in Mechanical Ventilation was awarded to Ivan G. Lee.

Bob Kacmarek (left) received the Hector Leon Garza MD Award for international achievement.

Frank Salvatore, Jr., received Life Membership.

The Bill Lamb Award for Community Service went to Len Picha.

Hassan Alorainy (right) received the Koga Award.

Hamilton Medical won "Best of Show" among the Exhibit Hall large booths.

Mallinckrodt won "Best of Show" among the Exhibit Hall small booths.

Big Things Happened Here

The official program at AARC Congress 2018 featured educational content aimed at all practice areas in respiratory care. But the meeting delivered some extra attractions that really enhanced the overall experience for attendees.

Photos by Lennie Sirmopoulos, Convention Photography, Tustin, CA

Special events added significant value to the meeting.

AARC CONGRESS 2018

Pre-courses Provided Additional CRCEs

Three pre-courses took place on the day before the Congress, and those who attended went home with extra knowledge and extra CRCEs as well. The "Challenges in Mechanical Ventilation: An Interactive Approach" session offered practical information on common patient–ventilator synchrony problems and their solutions through demonstrations using a real ventilator and a breathing simulator. The "Women in Leadership" course brought women and men alike up to speed on strategies designed to maximize the leadership potential of women and leverage those skills to benefit health care organizations. And the "Ultrasound-Guided and Emergent Vascular Access Simulation Workshop" provided both beginning and advanced practitioners with additional skills on ultrasound assessment and needling techniques with the use of ultrasound and arterial, venous, and intraosseous device insertion. ■

Fundraiser Offered an Inside Look at the Mob

Respiratory professionals gathered at the Mob Museum in Downtown Las Vegas on the evening before the Congress to raise funds for the American Respiratory Care Foundation (ARCF). They were all impressed by the private showing, which included exhibits ranging from a prohibition-era speakeasy to a crime lab depicting how law enforcement analyzes forensic evidence to build its case against criminals. The sixth annual ARCF Fundraiser Gala also included the chance for attendees to win some big prizes. Teri Miller, MEd, RRT, CPFT, went home with a four-day/three-night trip to any location in the United States. Renee Bartle, BS, RRT, won a complimentary registration to AARC Congress 2019. Marianna Paussa, RRT, received an iPad, and Jodi Jaeger, BS, RRT, RRT-NPS, won an Apple Watch.

After everyone finished touring the great exhibits in the Mob Museum, ARCF leaders presented a brief update on Foundation activities and how they are helping advance the profession. The important role ARCF donors play in that process was recognized as well. The ARCF fundraiser was sponsored by Vapotherm, and the grand prize was donated by Tonya Winders, president and CEO of the Allergy & Asthma Network. ■

Everyone had fun at the ARCF Fundraiser in The Mob Museum.

Patient Voices Came Through Loud and Clear

For the fourth year in a row, the AARC hosted a Respiratory Patient Advocacy Summit the day before the Congress, and this year's event drew participation from a wide range of RTs, patients, caregivers, and others who came together to learn from each other and share stories and concerns.

COPD patient Len Geiger got things started with a presentation called "COPD Management: A Patient's Perspective," providing those in attendance with an up-close-and-personal look at what it's like to live with this chronic lung disease. Steve Van Wormer followed with a talk titled, "Pulmonary Hypertension: A Caregiver's Perspective," sharing his personal experiences caring for a loved one suffering from this often devastating and hard to treat condition.

The Summit also saw the presentation of the second annual National Respiratory Patient Advocacy Award by Sharman Lamka, president and co-founder of The FACES Foundation. The award, which is a joint effort between The FACES Foundation and the AARC, went to Tonya Loftin, RRT, director of population health outcomes for Eventa, LLC.

The Summit wrapped up with a great Foundation Roundtable, where representatives from the ARDS Foundation, the Physician–Patient Alliance for Health and Safety, the Alliance for Patient Access, and the Cystic Fibrosis Foundation gathered in a lively session to shed light on how patients, caregivers, and respiratory therapists can combine their efforts to better tackle the issues facing people with chronic lung diseases.

The Platinum Sponsor for the Summit was Boehringer Ingelheim. Sunovion was the Gold Sponsor. Gilead, GSK, and Genentech served as Silver Sponsors. Contributing Sponsors were Vertex, Actelion, and The FACES Foundation. ■

The Respiratory Patient Advocacy Summit included a roundtable meeting of representatives from several health care organizations that addressed ways to improve care for people with chronic lung diseases.

FACES Foundation founder Sharman Lamka spoke at the Respiratory Patient Advocacy Summit.

Len Geiger presented the caregiver perspective on caring for a loved one with lung disease.

ZDogg MD Enlightened and Entertained

Internet sensation Dr. Zubin Damania — aka ZDogg MD — addressed Congress attendees in the first day's Keynote Address. With his special brand of humor, he covered a wide range of topics that affect everyone working in health care, from the struggles we all face to deliver compassionate care to the challenges inherent in ensuring medical professionals work together to keep the future of our health care system bright.

He also emphasized the special role respiratory therapists play in the nation's medical arena. "We gotta change the system . . . focus on prevention," he said. He emphasized the special role respiratory therapists play in the nation's medical system, noting that RTs had come to his rescue on the job many times. "It's about time y'all got cred for everything you do."

Dr. Damania urged his audience to focus on reinstating the human touch in health care. "We can transform compliance with personalized care. We know what's right for our patients. We need to re-personalize medicine . . . it starts with us."

Weaving storytelling throughout his talk, Dr. Damania held his audience captive and gave attendees a new perspective on some old topics that have been plaguing the health care system for decades.

Dr. Zubin Damania was the founder of a direct primary care clinic in Downtown Las Vegas called Turntable Health. Prior to establishing the clinic, he practiced as a hospitalist at Stanford University. He has dealt with his own burnout by performing standup comedy for medical audiences around the world. ■

Technology Ruled!

Respiratory care is driven by technology, and Congress-goers got to view the latest whiz-bang innovations in the Exhibit Hall. Every top vendor in the business was in Vegas for the meeting, and they were all ready to share the evidence-based research supporting their devices and services. Everything from mechanical ventilators to airway clearance devices and more was available for attendees to see, touch, and in some cases even test out for themselves.

Many of the vendors also offered special meeting discounts for deals made onsite, too, which means some attendees ended up covering all or most of the cost of their trip to Vegas just by taking advantage of those savings. ■

Service Member Salute

AARC members who are serving our country today, or have served it in the past, received special recognition during a formal Flag-Folding Ceremony that took place on Thursday morning. Joseph Buhain, EdD, RRT, FAARC, Harry Roman, MA, RRT, FAARC, and Wadie Williams, Jr., MS, RRT, presided over the ceremony.

A special call out went to Master Sergeant Thomas Wallsmith, the only RT known to have been killed in the line of duty. Also, a very special slide show tribute to World War II veterans featured family members of AARC members who served. The slide show ran before and after the ceremony.

Attendees who witnessed this moving tribute to those who have sacrificed so much were grateful to have had the chance to pay their respects to their fellow AARC members who are wearing or have worn the uniform. ■

Plenary Sessions Tackled Hot Topics

Leading physicians addressed three key topics facing respiratory therapists in the big lectures at AARC Congress 2018

Dr. Jerry Krishnan

Dr. Wes Ely

Thomas L. Petty Memorial Lecture:

Everyone Needs Oxygen

Jerry Krishnan, MD, PhD, believes too many clinicians really don't give the need for oxygen the careful attention it deserves when it comes to patients with chronic respiratory conditions, and in this year's Petty Lecture he discussed the evidence supporting the use of supplemental oxygen among these patients. He also talked about a new consortium in the works to ensure more patients are correctly assessed for oxygen need during hospital to home transfers, and he suggested ways in which respiratory therapists can get more involved in that process.

"Use of supplemental oxygen at home in individuals with severe resting room-air hypoxemia is one of the very few evidence-based treatments that saves lives in people with COPD," says Dr. Krishnan. "How often is life-saving home oxygen prescribed? Used as prescribed? Who is the SHERLOCK consortium and what are they proposing to do?"

Attendees heard the answers to these questions and more during the session.

Jerry Krishnan is a professor of medicine and public health, and associate vice chancellor for population health sciences, at the University of Illinois College of Medicine. ■

Donald F. Egan Scientific Memorial Lecture:

The ABCDEF Bundle and the Role of the Respiratory Therapist

ICUs all across the country are implementing the ABCDEF Bundle to improve patient care, ensure more patients move more swiftly through the process of discontinuing mechanical ventilation, and mobilize our sickest patients toward successful hospital discharge. Wes Ely, MD, MPH, talked about the respiratory therapist's role in this process during his presentation of the Egan Lecture.

"About 400 peer-reviewed articles over the past 20 years have gone into the creation of the ABCDEF ICU Liberation Bundle," says Dr. Ely. "What we have learned in over 20,000 patients at ICUs from across the United States is that this is a remarkable way of organizing the entire ICU team that prioritizes the full person — mind, body, and spirit — and reduces time on the ventilator, in the ICU, and in the hospital, saves lives, and dramatically improves the amount of time free of delirium and coma."

The "ABCDEF" in the ABCDEF Bundle stands for — A: assess, manage, and prevent pain; B: both spontaneous breathing trials and spontaneous awakening trials; C: choice of analgesia and sedation; D: delirium prevention and treatment; E: early mobility/exercise; and F: family engagement.

Dr. Ely is a professor of medicine at Vanderbilt University School of Medicine, where he holds the Grant W. Liddle chair. ■

Dr. Michael Anderson

Phil Kittredge Memorial Lecture:

Journey to Zero Harm — Developing a Culture of Safety

Hospitals are places where one can recover from illness or injury. Unfortunately, they are also places where vulnerable patients pick up nosocomial infections. Internationally known patient-safety expert Michael Anderson, MD, MBA, shared his insights in a session aimed at outlining the steps we'll all have to take on the journey to zero harm.

"Hospitals are complex, busy, and sometimes stressful worlds," says Dr. Anderson. "It is a foundational role for all members of the health care team to focus on safety — every patient and every day." Dr. Anderson believes strategies focused on safety can and should be implemented in every medical facility to advance a culture in which fewer patients leave the hospital with a greater burden of illness than they came in with.

Michael Anderson is president of the University of California San Francisco's Benioff Children's Hospital. ■

New Students-Only Sputum Bowl® Packs the House

For the first time ever, the AARC hosted a Students-Only Sputum Bowl®, and Congress attendees flocked to see these newcomers to respiratory care exhibit their knowledge in the profession. Following an amazing Finals Rounds on Dec. 6, everyone gathered for an Awards Ceremony and Networking Reception featuring entertainer Mark Eddie. Part musician, part comedian, and all entertainer, he energized the crowd with his guitar, signature voice, and hilarious tribute to the classic rock, R&B, hip hop, country, and pop stars of our time. With great impressions of everyone from Neil Diamond to Dave Matthews, and a witty point of view on everything from pop culture to parenting, he kept everyone laughing and tapping their toes.

Who won? All the teams in the 2018 Sputum Bowl were winners just for throwing their hats into the ring, but in the end these great teams triumphed over the rest —

First place winners: Colorado
Second place: Texas Renegades

The Sputum Bowl® is supported by an unrestricted educational grant from Medtronic. ■

Colorado took the first place prize.

The Texas Renegades came in at second place.

Respiratory Care Open Forum Presents Research by and for RTs

The 2018 Open Forum featured a wealth of original research that attendees could take home and put to work in their facilities. With more than 270 abstracts presented in 14 Poster Discussion sessions and two Posters Only sessions, there was something for everyone. The top ten abstracts were featured during a special Editors' Choice session in which each author presented a short slide show with his or her findings before taking questions from the audience.

Here are the abstracts that made the grade:

- Noninvasive Ventilation Device–Related Pressure Injury in Pediatrics: A Correlation Study — Denise L. Lauderbaugh, RRT, RRT-NPS, San Diego, CA
- A Respiratory Therapist-Driven Asthma Pathway Reduces Hospital Length of Stay in the Pediatric Intensive Care Unit — Kaitlyn E. Haynes, RRT, RRT-NPS, Durham, NC
- Novel Endotracheal Tube for Monitoring Static Lung Compliance in Real-Time — Michael D. Davis, PhD, RRT, Richmond, VA
- A Randomized Controlled Trial Comparing the Effectiveness of Lung Expansion Therapy Following Upper Abdominal Surgery in Adult Human Subjects — Daniel D. Rowley, MSc, RRT, RRT-ACCS, FAARC, Charlottesville, VA
- Does Acetic Acid Solution Decrease Trach Stoma Site Infections Compared to Sterile Water When Used as a Daily Cleaning Task for Patients with Tracheostomy Tube Under One Year of Age? — Teresa G. Zustiak, CRT, CRT-NPS, Minneapolis, MN
- Sustained Effectiveness of Aerosolized Prostacyclin in Acute Respiratory Distress Syndrome — Gregory S. Burns, RRT, San Francisco, CA
- Characteristics of Unplanned Extubation Events in the Critical Care Setting — Travis J. Summers, RRT, San Francisco, CA
- Changes in Respiratory Parameters After Caffeine Administration in Mechanically Ventilated Premature Neonates — Danielle Lazarus Camacho, RRT, San Diego, CA
- Success of a Tobacco Cessation Program for Parents at a Children's Hospital — Leighann Sweeney, RRT, RRT-NPS, CTTS-M, Philadelphia, PA
- Impact of a Respiratory Therapist Home Visit Program Post Hospitalization to Decrease Readmission and ER Visits for COPD Patients in a Primary Care Network — Rebecca Kopelen, RRT, Falls Church, VA

The Open Forum was supported by an unrestricted educational grant from Monaghan. ■

Julie Essiam Named First ARCF VIP International Fellow

Her support has helped build an educational program for RTs in Ghana

by Debbie Bunch

The American Respiratory Care Foundation (ARCF) has been improving respiratory care in nations around the world for nearly three decades through its International Fellowship Program. Every year, health care professionals from other countries travel to our shores to learn from and share experiences with respiratory therapists in the United States. A new VIP International Fellowship to recognize leaders outside of health care who are in a position to make a significant impact on international respiratory care debuted in 2018, and the first VIP Fellowship was awarded to Julie Essiam for her efforts on behalf of the respiratory care program that has now opened at the University of Ghana in Accra, Ghana.

The bachelor's degree program is the first such program specifically for respiratory therapists in Africa. The RTs produced by this program are expected to add immense value to the health care system in Ghana, where the incidence of respiratory disease remains high and health professionals available to treat it are lacking.

> The International Fellowship Program isn't just for health professionals anymore.

Julie Essiam addressed the International Respiratory Care Council on Dec. 6.

Essiam was recognized for her contributions to international respiratory care at the Congress. She says she first became aware of the RT program at the University of Ghana in June 2017. Then the CEO of the Ecobank Foundation, Essiam was approached by Ecobank Ghana about lending financial support to the Korle-Bu Teaching Hospital as it worked with the university to launch the program as a part of the medical school. She saw it as an "amazing opportunity," not just for Ghana, but for Africa as a whole.

At an event held to announce the Ecobank Foundation's $30,000 commitment over five years to support scholarships for students in the program, Essiam, who has since left Ecobank to serve as CEO of Africans for Africa (A4A), said, "Lives will be saved and knowledge of respiratory therapy will be a national asset to be passed on to future generations."

Essiam believes a well-established respiratory therapy program will contribute significantly to the Africa Health Strategy (2016–2030) issued by the African Union Member States to establish viable health systems that will save lives, increase productivity, and end poverty. She envisions the respiratory care profession being rolled out across the continent and says she is committed to making that happen via the A4A health platform.

Steps have already been taken. Essiam met with the Rwandan minister of health to discuss the adoption of the respiratory care program in the Rwanda Medical School program late last year, and she is co-chairing the Joint African Meeting on Health under the leadership of the chair of the African Union, Rwandan President H.E. Paul Kagame, at the Africa Union Summit taking place this month.

"I will be using this platform to mobilize ministers of health across the continent on the adoption of respiratory care in their respective countries," says Essiam. Born

ARCF Chair Mike Amato presented the new VIP International Fellowship to Julie Essiam.

in Ghana, she has an undergraduate degree from Carnegie Mellon University in Pittsburgh, PA, and has worked for a range of multinational organizations across Europe, North America, and Africa, including Citigroup. In addition to serving as CEO of the Ecobank Foundation, she was the group executive for human resources and corporate affairs for the Ecobank Group, where she helped execute corporate strategy. As a founding partner and now CEO of A4A, she is focused on mobilizing all Africans, particularly those in the private sector, to own and lead the accelerated social development of the African continent.

Essiam says she believes that absolute ownership and the leadership of the private sector is the only way that the transformation of the continent can be realized in a sustainable manner.

The ARCF VIP Fellowship assisted Essiam in traveling to Las Vegas for AARC Congress, where she was able to get a closer look at all that the respiratory care profession has to offer, and she met with the profession's leaders from around the world. She also spent time touring the AARC Exhibit Hall, learning about respiratory care equipment and services. She visited the University of Kansas Medical Center campus, where RT educators supporting the Ghanaian respiratory care program are headquartered.

"My personal vision is to contribute to the accelerated transformation of the African continent to achieve the eventual prosperity of the continent," says Essiam. "In my opinion, the imperative path to a strong economy is social transformation, and the only path to social transformation is a transformed and strong health system, a competitive education system, and an inclusive economy."

AARC Executive Director Thomas Kallstrom, MBA, RRT, FAARC, believes her support of respiratory care in Africa will play an integral role in that process. "Julie Essiam is in a position to make a profound impact on respiratory care on an international basis," he says. "In fact, she already has. We hope to see more great things out of the continent of Africa in the coming years, and as an international organization ourselves, we at the AARC must and will be a resource for her."

The ARCF VIP International Fellowship will be available on an annual basis but will only be awarded when a deserving individual comes to the attention of the ARCF. ■

The International Respiratory Care Council held its annual meeting at the Congress.

Leaders of the International Respiratory Care Council congregated at a reception.

International Attendees Added a New Dimension

International attendance at the AARC Congress has continued to grow over the years, and 2018 was no exception. We welcomed a host of clinicians from other countries to the meeting, and their presence added immense value to the education and networking experiences we all took part in. The Open Forum alone saw participation from 38 clinicians who traveled from far and wide to share the results of their studies:

- Ching-Yi Liu, MSc, RRT, Douliu, Taiwan
- Hui-Ling Lin, MSc, RRT, RN, FAARC, Taoyuan, Taiwan
- Andrey Wirgues Sousa, São Paulo, Brazil
- Yi-Tang Tsai, Kaohsiung, Taiwan
- Yi-Hao Peng, MSc, Taichung, Taiwan
- Miki Nakanishi, MSc, RN, Nishinomiya, Japan
- Edward Banguera, Cali, Colombia
- Karel Roubik, PhD, Kladno, Czech Republic
- Saad M. AlRabeeah, PhD, RRT, RRT-SDS, Dammam, Saudi Arabia
- Chia-Chen Chu, PhD, RRT, FAARC, Taichung, Taiwan
- Yassin Taher Ismaiel, RRT, Riyadh, Saudi Arabia
- Tetsuo Miyagawa, PhD, RRT, Yokohama, Japan
- Saeed Mardy Alghamdi, MSc, Montréal, Canada

- Chung Jieh Wang, Taichung, Taiwan
- Ching-Hua Su, Taichung, Taiwan
- Abdullah A. GazwanI, MSc, Dammam, Saudi Arabia
- Tomomi Ichiba, PhD, Mitakashi, Japan
- Gajendra P. Choudhary, PhD, Indore, India
- KC Rajendra, Tasmania, Australia
- Hwei-Ling Chou, Kaohsiung City, Taiwan
- Ivan G. Lee, MSc, RRT, RRT-ACCS, RRT-NPS, RPSGT, Singapore, Singapore
- Thaynara L. Cagnini, Cascavel, Brazil
- Tetsuya Hasegawa, Yokosuka, Japan
- Chin-Jung Liu, MSc, RRT, Taichung City, Taiwan
- Szu-I Yu, Taichung, Taiwan
- Yu Jen Chang, Taichung City, Taiwan
- Satoshi Ishiyama, Yamagata, Japan
- Takamitsu Kubo, Sunto-gun Nagaizumi-cho, Japan
- Hui Sun Cho, MSc, Kaohsiung, Taiwan
- Yen-Huey Chen, PhD, Taoyuan City, Taiwan
- Li-Rong Chen, Taoyuan, Taiwan
- Akira Shobo, PhD, Fujimino, Japan
- Ping-Hui Liu, MSc, Kaohsiung, Taiwan
- Abdullah A. Ghazwani, MSc, Dammam, Saudi Arabia
- Yuenan Ni, Chengdu, China
- Chaisith Sivakorn, MD, Bangkok, Thailand
- Camilo Corbellini, PhD, Orbassano, Italy
- Juvel M. Taculod, MHA, RRT, RRT-NPS, Singapore

There were several international presenters in the Program as well. Sanja Stanojevic, PhD, Eddy Fan, MD, PhD, and Thomas Piraino, RRT, from Canada; and Martin Kneyber, MD, PhD, FCCM, from The Netherlands, all delivered great talks on the practice of respiratory care worldwide.

It goes without saying that our 2018 International Fellows expanded the horizons of us all. Everyone who got the chance to visit with these outstanding professionals walked away with a greater insight into how RTs here can work with RT professionals there to improve patient care. We thank Sangit Kasaju, Neelum Singh, Liang Xu, and the first-ever VIP Fellow Julie Essiam for traveling to the United States to attend AARC Congress.

International attendees gathered with AARC leaders and special guests at an International Reception, which featured the presentation of the 2018 Toshihiko Koga, MD International Medal. The 2018 medal recipient was Hassan Alorainy, governor for Saudi Arabia and executive director of the Saudi Arabia Thoracic Society. These sponsors have made the International Fellowship Program possible: Drager, Teleflex, the NBRC, the AARC, and the AARC House of Delegates. ■

Taking the Oath of Office

New AARC leaders were sworn in during the Annual Business Meeting. Karen Schell, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS, was installed as the AARC's 2019–2020 president. Sheri Tooley, BSRT, RRT,RRT-NPS,CPFT, AE-C, is our new vice president-external affairs. Our new vice president-internal affairs is Cheryl Hoerr, MBA, RRT, FAARC. The new secretary/treasurer is Lynda Goodfellow, EdD, MBA, RRT, AE-C.

Our new directors at large are Dana Evans, MHA, RRT-RRT-NPS, FAARC; Kari Woodruff, BSRC, RRT, RRT-NPS, FAARC; John Lindsey, MEd, RRT, RRT-NPS, FAARC; and Jacklyn Grimball, MA, RRT, FAARC.

Several specialty sections also installed new leaders: Adam Mullaly, BSRT, RRT AE-C, Post-Acute Care; Bradley Kuch, MHA, RRT, RRT-NPS, FAARC, Neonatal-Pediatrics; and Jessica Schweller, MS, RRT, RRT-SDS, APRN-CNP, Sleep.

New House of Delegates officers include: speaker, Teresa Miller, MEd, RRT, CPFT; speaker-elect, Joe Goss, MSJ, RRT, RRT-NPS, FAARC; secretary, Jodi Jaeger, BS, RRT, RRT-NPS; and treasurer, Jennifer Anderson, EdD, RRT, RRT-NPS. Keith Siegel, MBA, RRT, CPFT, is now the past speaker. ■

New AARC President Karen Schell

AARC Heads to New Orleans for Congress 2019!

AARC Congress 2018 delivered on everything RTs need to move their departments, their programs, and their own careers forward in 2019. We'll do it all again Nov. 9–12 in beautiful New Orleans, LA.

Known around the world for its rich history, laid-back atmosphere, warm hospitality, great music scene, and fabulous food, New Orleans offers visitors everything anyone could ever want in a convention destination. So put AARC Congress 2019 on your calendar now and get ready to "let the good times roll" next November. ■

Ed Salizar, Yvonne Gardner, Maddie Stewart, Shaylynn Uresk, and Kim Bennion joined moderator Patrick Dunne for the Congress Closing Ceremony on December 7.

The Tale of Two Patients

by Debbie Bunch

Closing Ceremony illustrates why RTs need to own patient safety

"My job today is to try to deliver a rather positive, upbeat message about patient safety — it's our time, it's our responsibility . . . ."

Thus began the Closing Ceremony at AARC Congress 2018, as Master of Ceremonies and former AARC President Patrick Dunne, MEd, RRT, FAARC, traced the history of the patient safety movement from the ancient decree to "first do no harm" through the publication of the landmark "To Err Is Human" report from the Institutes of Medicine in 1999 and subsequent efforts to improve the safety of care delivered by health care providers here in the United States and around the world.

RT Ed Salazar shared the story of how his son lost his life due to inadequate monitoring in the hospital following an auto accident.

Dunne emphasized the vital role of personal testimonies from patients and families in driving patient safety initiatives and then invited attendees to accompany him as he embarked on a journey through the tragic loss of two young men who had their whole lives ahead of them until they suffered the consequences of inadequate monitoring when they were in need of medical care.

Technology was at the bedside

The audience sat at rapt attention while Dunne played a video from the Patient Safety Movement outlining the case of Chris Salazar, the 27-year-old son of AARC member Ed Salazar, RRT, CPFT, RPSGT, who lost his life after an automobile accident in March 2009. As Salazar described during the video, Chris's injuries were severe, but he steadily improved throughout his ICU stay. In less than two weeks, he was weaned from the ventilator. He still had the tracheostomy tube in place but was breathing on his own. "We had every reason to believe he was going to survive this," said Salazar in the video.

But on the afternoon of April 9, Chris's mother Kathy noticed something was wrong with the airway. It just didn't sound right. She notified the respiratory therapist on duty, who said it had been that way all day. The RT looked at the monitor and saw Chris's heart rate was elevated and his saturations were low. Blood work showed a compensated respiratory acidosis, suggesting the problem has been present for at least 12 hours.

The RT tried to manually ventilate him, but no air would go in. When she tried a second time, he lurched forward and began turning blue. A code blue was called, but despite a resuscitation attempt that lasted about 30 minutes, Chris could not be saved. He was pronounced dead at 6:31 p.m.

"The technology that would have detected a problem was right there at bedside," said Salazar. That technology was capnography. Had the device been applied along with blood saturation, clinicians would have been alerted to the fact that Chris was not ventilating properly.

Said Salazar, "This should not have happened. A 27-year-old young man with a normal heart and lungs should not die of cardiopulmonary arrest in a trauma center intensive care unit."

A pointed question

Ed Salazar came to the stage following the video to share more about his son and his own mission to ensure other patients don't meet the same fate. "Christopher just loved life," said his dad. "He had a strong sense of adventure…he had a big heart, and he had a very generous nature." The young man had already overcome a lot in life. Salazar said his son spent the first 12 hours of his life on a ventilator due to fetal distress and suffered from dyslexia as a kid. Despite those trials, he was a standout in gymnastics and soccer, and he loved his family — especially his two little girls.

Salazar went on to talk about the accident and the ups and downs faced by the family — from being called to come into the hospital as soon as possible in case Chris didn't make it, to the hope they felt as he slowly but surely showed signs of progress. Two weeks into the hospital

stay, the family thought he was in the clear. "We were very, very encouraged things were going to work out well for us," he said.

Of course, as the video had shown, that was not to be the case. Something went wrong with Chris's airway, and the health care professionals on his case had missed it. Dunne asked the million dollar question: "What do you believe could have happened differently that perhaps would have saved Christopher's life?"

Salazar said, "Well, when you start seeing biomarkers that are out of line for someone with healthy heart and lungs, then if capnography would have been incorporated into their monitoring system, then it would have been very, very simple to just put the sensor back in line on the trach tube and they would have known that he was in respiratory failure. Why they didn't think to do it, it's beyond me."

Dunne closed out Chris's story by asking his dad to leave a few words of wisdom for the respiratory therapists in the audience. Said Salazar, "We're not just technicians. We don't just do vent checks and give aerosol treatments. Our obligation . . . is to take full responsibility for this patient. We are responsible for understanding how chemistries relate to what we do. We are responsible for knowing how diagnostics relate to what we do. And we should start training ourselves to become familiar with all these innovations that are coming down the road to prevent this from happening again."

Yvonne Gardner and Maddie Stewart told of Parker Stewart's passing due to inadequate monitoring during opioid use that was prescribed following routine surgery.

More than an accident

The second story featured in the Closing Ceremony began with a video that paid tribute to the life of Parker Stewart, just 21 years old when he died in his sleep after taking opioids for pain following a routine tonsillectomy. The touching photos that appeared on the screen documented the life of a much beloved son, grandson, brother, nephew, friend, and brand new husband to his bride, Maddie. Maddie and Parker's mom, Yvonne Gardner, then came to the stage to talk about Parker, what he meant to them and their whole family, and their devastation at his untimely death in December 2016.

Maddie told the story of that fatal day. Parker had been doing well following his surgery, she said, and by the evening of Dec. 3, the young couple set up their first Christmas tree and went to his parents' house for dinner. Dec. 4 dawned as a normal morning. "I woke up before him and he was snoring really loudly," recalled Maddie. A couple hours later, she went back into the bedroom to let him know it was time to get up for church. "I went around the bed and was on his side and turned to face him and he was still," she continued through tears. "And he had passed." She performed CPR and the EMTs came, but nothing could be done.

"I just never thought, three months after marrying the love of my life, he'd be taken so soon, with no warning, after pretty routine surgery," said Maddie.

Dunne then turned to Parker's mom, noting that when most people think of opioid overdoses, they think of the abusers and the illegal sellers. "But here was a prescription, properly prescribed, for a routine procedure, and he was taking it as prescribed. What happened?"

Yvonne said "drug overdose" was the first thing the first responders asked about when they arrived on the scene. "Not my son Parker," she said. "He rarely would even take Tylenol for a headache because he just didn't believe in that." She knew deep in her heart that an overdose was out of the question. In fact, Maddie had written down all his doses, how much he had taken, and what he had eaten with it. Nothing was amiss.

Health professionals tried to explain the death as a "firestorm" of circumstances. They said he could have had sleep apnea, which could have combined with his surgery and the opioids to lead to the outcome. But beginning at Parker's funeral, Yvonne began hearing stories from others about people they knew who had suffered the same fate after taking opioids for routine procedures — some as young as three years old — and she became convinced something else was happening.

When the medical examiner listed pneumonia as a cause of death, she became even more convinced. "It made absolutely no sense," she said, noting that she had seen Parker the night before and he had been fine. Fortunately, Parker's physician and the RTs at the hospital where he had been treated agreed, and they were ready to help her figure out only what had happened to Parker, but also to work with her to bring about a new law in Utah to help ensure it never happens to anyone else again.

Mom goes on the offensive

The mission was outlined in a video from Intermountain Health featuring the steps Gardner took to meet with Utah legislators to address the problem, beginning with State Representative Kevin T. Van Tassell. "She asked if she could come down and meet with me and wanted to talk a little about what had happened with her son and wanted to talk about some issues that she felt like needed attention," said Van Tassell. "And I said, well, it sounds like we ought to do something."

That got the ball rolling in the state legislature. At the same time, AARC member Shaylynn Uresk, BSRT, RRT, RRT-SDS, RPSGT, from Uintah Basin Medical Center in Roosevelt, UT, where Parker had his surgery, contacted fellow member Kim Bennion, MsHS, RRT, CHC, from Intermountain Health in Salt Lake City, to find out more about a project they had implemented to monitor inpatients on opioids for pain and how it might also help patients like Parker.

"She reached out to me, just creating a protocol with Dr. Michael Catten to see what they could do on the outpatient side," said Bennion. "And the very first patient that we had, Amanda Thompson, was saved." The young woman went into a full arrest at home but her mother heard the alarm and rushed to her daughter's side, waking her up in time. Bennion noted the monitor being used — the alarming continuous pulse oximeter — is something readily available in health care settings and is hardly a high-cost item.

Dr. Catten emphasized the need for this monitoring in everyday surgeries such as those that Parker and Amanda underwent. "When we talk about the opioids, a lot of us jump to the addiction, the abuse," he said, "and this is not what we are talking about." He stressed that these cases — Parker's and Amanda's — happened in people who were not drug users or abusers. They were simply surgical patients who were prescribed opioids for post-surgery pain.

"We're talking about innocents who many times have never seen the opioids before — outpatient surgeries, healthy people whom we send home and then die from the overdose of the opioid — even at prescribed doses," he continued. He stressed that these deaths don't have to happen. "We easily have the technology today, right now, to monitor them and save lives."

RTs play a role

Following the video, Shaylynn Uresk and Kim Bennion joined Yvonne, Maddie, and Patrick on the stage to explain how they worked with Dr. Catten to uncover the role that inadequate monitoring played in Parker's death. "Dr. Catten is a dear friend and colleague," said Uresk. "He had a series of patients pass away." When she stopped by his office one day to get some signatures, she found him upset, distraught, and angry. He had gotten the medical examiner's results on Parker, which showed pneumonia as the cause of death — the same cause listed in his other cases.

They reviewed his protocols to see if he had done anything wrong, and he hadn't. They went over the patients involved to see how they were doing prior to their surgeries. They were all healthy, without any comorbidities or risk factors that would have called for them to stay in the facility longer. In an attempt to do something, Dr. Catten decided to purchase some continuous alarming pulse oximeters to give to his patients to use at home. "He was trying to search for some type of answer," said Uresk. She said she'd get in touch with Kim Bennion for some help and advice.

"When Shaylynn reached out to me, we were in the midst of doing all the ground work, and rolling across our, at that time, 23 hospitals, to monitor with end-tidal CO_2 or acoustic monitoring to couple with pulse oximetry, which we know is a late indication of desaturation and problems," said Bennion. The two began collaborating, and before long they were also caught up, along with Dr. Catten, in Yvonne Gardner's legislative activities.

The resulting resolution — which has come to be known as Parker's Bill — was ultimately passed in Utah to address the crisis.

"Parker's Bill helps set the foundation to help prevent opioid-induced respiratory depression for post-surgical patients in Utah," said Uresk. It will help to foster a dialogue between physicians, patients, families,

respiratory therapists, and other health care providers who need to better understand the dangers inherent in opioid medications, and it will encourage physicians to order alarming pulse oximeters for their patients going home on these medications following surgery.

Bennion noted the critical importance of the latter and said Intermountain Health is also looking for ways to take its inpatient monitoring program into patients' homes. "Not only should we be replicating it — what we're monitoring on the inpatient side — we have to replicate it in the home setting as well." She said Intermountain Health is planning to conduct a study in surgical patients to see if the inpatient program can move into the home, and to determine which device — the end-tidal CO_2 monitor or alarming pulse oximeter — is better at identifying impending respiratory arrest.

No more unnecessary deaths

Parker's mom explained what drove her to fight for the legislation after she lost her son, noting that she did it in part for the many other patients she learned about who had also died or had a close call after taking opioids following routine surgeries. She wants such patients to have the same advantage Amanda Thompson had when she was prescribed opioids and sent home with a continuous pulse oximeter, and she believes Parker's Bill is the right first step. "We have the technology out there to prevent this, and it's such a simple thing. What parent — even if it cost you $1,500 — wouldn't pay that to save your child?" she asked.

Shaylynn Uresk and Kim Bennion took a few moments to address their peers in the audience about why they decided to go the extra mile for Parker's Bill as well. "It's all about connections," said Uresk. "We may think this world is big, but it is actually really small. Take every moment and every opportunity to get to know your patients and your peers. You never know when your associations will help you push issues forward and bring them to light in your service." She emphasized she and Bennion first met ten years ago at a Utah Society meeting, and she never fathomed that one day they'd work hand in hand on a project like this one. "Don't be afraid to reach out and seek help," she said. "We are stronger together, and we can accomplish anything as long as we're working together."

Bennion stressed the need for respiratory therapists to take the lead. "We need to be the ones who are identifying high-risk patients. We are the ones who need to be suggesting what monitoring needs to occur, both in the hospital and in the home, the skilled nursing facility — and then we need to be willing to stick our necks out there," she said.

Moving mountains

As the program drew to a close, Parker's mom and his young widow offered some heartfelt words about their mission to ensure no other patients go through what Parker did. "If I could explain it in one word, it's been nothing short of unreal," said Maddie. "I mean, no one could have ever warned me that three months after marrying him, he would have died in our bed…it's not something I want any other family to understand."

Yvonne emphasized the importance of telling stories about loved ones like hers and Ed Salazar's. "They might not be known by the world, but they are the most important to us. And we feel their loss. It leaves a hole in our family," she said. Then she recalled her grandmother, who always told her to be the person who does something when something needs to be done. "And I thought, if someone had done something before, then my son would still be here." She asked the RTs in attendance for their help. "You are very important in the lives of all of your patients," she said.

Patrick Dunne ended the session by reviewing patient safety concerns in areas ranging from influenza vaccinations to maternal mortality before challenging the audience to go back home, establish a culture of safety in their own departments, and then let their peers know about it. "I think we really need to start collaborating more," said Dunne. "You've heard here today how collaboration, not just with each other but with the patients and the families, can really make a mountain move." ■

After the Closing Ceremony, AARC leaders and staff members thanked attendees for coming to the AARC Congress in Las Vegas.

Be Our Guest!

If you provide respiratory care outside of the United States, and would like to share and expand your knowledge, please consider applying for our International Fellowship Program.

The International Fellowship Program is a sponsored activity of the American Respiratory Care Foundation (ARCF). Since 1990, health professionals from more than 63 countries have shared experiences, knowledge and developed lasting friendships through this exceptional program.

The three-week program takes each participant to two host cities in the United States and concludes with attendance and acknowledgement at the AARC's International Respiratory Congress.

APPLICATIONS ACCEPTED THROUGH JUNE 1

American Respiratory Care Foundation™

American Association for Respiratory Care

Be Our Host!

Show off your city and your hospitality skills to respiratory professionals from around the world through the International Fellowship Program. Hosts provide the visiting Fellows with a quality educational experience and give them the opportunity to observe respiratory care in a wide variety of settings. If you are located in a city or metropolitan area (an area within a 60-mile radius of a major city) apply to be a host today!

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RC Currents

IN THE NEWS

Respiratory Care Education Annual Call for Papers

The AARC will publish Volume 28 of the *Respiratory Care Education Annual* (ISSN 2372-0735) in the fall of 2019. This refereed journal is committed to providing a forum for research and theory in respiratory care education and is listed in the Cumulative Index to Nursing and Allied Health Literature and Ulrich's Periodical Database.

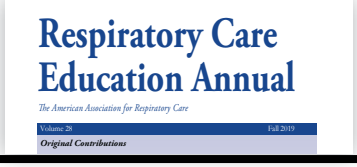
The AARC Education Section invites educators to submit papers for consideration. Preference will be given to papers that emphasize original research, applied research, or evaluation of an educational method. Other topics that may be considered include interpretive reviews of literature, educational case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

Papers should be approximately 6–10 pages in length and must follow the guidelines as established by Respiratory Care. Abstracts should not exceed 250 words. General guidelines for the manuscript as well as guidelines for preparing the manuscript, text formatting, and reference formatting may be found at http://rc.rcjournal.com/content/author-guidelines.

For more information, contact Dr. Kathy Myers Moss, editor, at mossk@health.missouri.edu or Dr. Shawna Strickland at (972) 243-2272 or strickland@aarc.org. Please send all manuscripts to the Editorial Board via the Respiratory Care Education Annual manuscript submission form, http://form.jotformpro.com/form/52365807894973.

The annual call for papers will also be published in the AARConnect Education Specialty Section community.

The 2019 submission deadline for the *Respiratory Care Education Annual* is February 28, 2019.



Contribute to the AARC "Transitions" Column

The AARC "Transitions" column is devoted to sharing news about the passing of AARC members. You can submit news about your colleagues' recent passing by going to http:c.AARC.org/transitions. Please provide any information about the member's recent death, such as an obituary, so that we can share it with our members and pay tribute.

Retirees: Tell Us the Story of Your Career

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

Scarlett and Her Crew Inspire Arkansas RTs To Walk for CF

AARC state society meetings fulfill a lot of roles — first and foremost, they provide continuing education, but they also offer networking opportunities and the chance for respiratory therapists in the state to get to know one another on a personal level, too.

A few years ago, Jessica Alphin, BS, RRT, decided it might be nice to add a community service component to the Arkansas Society for Respiratory Care (ASRC) annual meeting. She reached out to the ASRC board of directors and they were all for it. But what kind of activity should it be? Alphin took a look at what other conferences were doing along these lines to come up with some ideas. "I noticed golf tournaments, poker runs, and car shows, but I wanted ours to encompass respiratory care somehow," she says. "When I thought about the Cystic Fibrosis Foundation (CFF) and how little people actually know about the disease and those affected, I thought this would be a great opportunity."

The Arkansas Chapter of the CFF put her in touch with Samantha Smith, whose baby daughter Scarlett had recently been diagnosed with the disease, and that was the start of what has now become an annual event at the ASRC meeting. Every year for the past five years, the Smiths have come out to support a CF Awareness Walk that begins at the convention center in Hot Springs and takes participants down the historic Bath House Row.

Sheri Tooley, BSRT, RRT, RRT-NPS, CPFT, AE-C, FAARC, affixes a sunflower pin to Alphin's shirt in part to honor her efforts on behalf of the CF Awareness Walk.

Jessica Alphin, BS, RRT, decked out as "Treasure Troll" for the 2018 walk in Hot Springs, addresses those in attendance.

"Our meeting always has a very large student participation, so usually each school that attends participates with a team in the walk," says Alphin, a former ASRC president who serves as director of clinical education at Black River Technical College in Pocahontas. "Scarlett's Crew" — a group of Smith family members and friends — leads the way, and sometimes vendors exhibiting at the meeting will take part as well. Alphin says they've even had a couple of running groups in Hot Springs come out to walk. ASRC board members show up to help with registration, take donations, and even judge the friendly competitions associated with the event.

Alphin says the 2018 awareness walk raised more than $675 for the CFF. Over the past five years, well over $3,000 has gone to the foundation to benefit children and adults with the condition. "We treat very sick people every day, and it is such an honor to be able to bring awareness to a disease that affects so many children and now adults," she says. "I have known Scarlett and her family for five years now, and she is such a fighter. Knowing that the money we raise goes to help fund research that will cure CF someday is an amazing feeling."

Scarlett Smith and her mom and dad, bottom row, far right, pose with participants in last year's event.

Scarlett was pumped up for the 2018 ASRC CF Awareness Walk.

Hypertonic Saline May Benefit Infants with CF

According to German researchers publishing in a recent edition of the *American Journal of Respiratory and Critical Care Medicine*, infants with cystic fibrosis may benefit from inhaling hypertonic saline. They reached that conclusion after studying 40 infants with an average age of three months who were randomly assigned to either hypertonic saline or isotonic saline.

The infants were followed for 12 months. Results showed infants who received the hypertonic saline had a better lung clearance index at one year. They also gained significantly more weight and height. Pulmonary exacerbation rates and adverse events between the treatment groups were similar. "Treatment with hypertonic saline in infants with CF is safe from diagnosis onwards, and our results suggest this preventive therapy benefits lung function and improves thriving," concluded the authors.

Seeking Biomarkers for ALS

Michael Bereman is an assistant professor in biological sciences at North Carolina State University who also has amyotrophic lateral sclerosis (ALS). Noting that the time from symptom onset to diagnosis in most patients can be one to one and a half years, he and his colleagues decided to look for biomarkers in ALS patients that could both speed diagnosis and give clinicians a more complete look at disease progression.

The team obtained samples of cerebrospinal fluid (CSF) and blood plasma from 33 ALS patients and 30 healthy individuals, looking for differences in protein abundance between the two groups. More than 1,000 different proteins were identified, and two of them — chitinase-3 like1 and alpha-1-antichymotrypsin — looked promising for both diagnostic and prognostic applications. The proteins are associated with immune system activation in the brain and thus could also be used as an objective way to measure the effectiveness of current therapies directed at tempering this pathway.

"Our goal is to create a panel of protein targets that could give doctors a quicker path to diagnosis for ALS patients, as well as an objective way to measure disease progression, or to test the efficacy of new drugs," Bereman said. "Our next steps will be to look at changes in these proteins and their signaling pathways over time in fluids that have been longitudinally collected from ALS patients." The study appeared in *Scientific Reports*.

Bacteria Fighters

How does the airway protect itself from all the bacteria that is breathed in from the air every day? That question has eluded medical science — until now. Researchers from Massachusetts Eye and Ear have found that when bacteria are inhaled, tiny fluid-filled sacs called exosomes are immediately secreted from cells to directly attack the bacteria and shuttle protective antimicrobial proteins from the front of the nose to the back along the airway, protecting other cells against the bacteria before it gets too far into the body.

The investigators first tested the ability of exosomes to battle bacteria in mucus samples taken from patients, then confirmed their findings in live patients, showing that the stimulated exosomes were as effective as antibiotics at killing the bacteria. They also showed that the exosomes were rapidly taken up by other epithelial cells, where they were able to "donate" their antimicrobial molecules. The authors believe these findings may have implications for new methods of delivering drugs through the airway. For example, as natural transporters, exosomes could be used to transfer inhaled packets of therapeutics to cells along the upper airway, and possibly even into the lower airways and lungs.

The research appeared in a recent edition of the *Journal of Allergy and Clinical Immunology*.

Caregiver Education Pays Off

Poor caregiver knowledge of asthma can lead to longer hospital stays for children with the condition, report researchers presenting at the recent American College of Allergy, Asthma, and Immunology meeting in Seattle. In a study involving 72 children between the ages of two and 17 who were hospitalized with asthma, they found those whose caregivers demonstrated a knowledge deficit were four times more likely to be in the hospital for more than two days. Those with caregivers who did not demonstrate a knowledge deficit were more likely to be discharged in fewer than two days.

Caregivers in the study completed questionnaires aimed at assessing their knowledge of asthma at admission, at discharge, and then again four to six weeks later. All of the caregivers received education on asthma during the child's hospital stay, including demonstrations on correct inhaler technique. "After the education program, caregivers showed an increase in their general asthma knowledge from admission to four to six weeks after discharge," said study author Deepti Deshpande, MD, MPH. "Additionally, at four to six weeks after discharge, 90% of caregivers were able to correctly name their child's rescue medicine and 73% were correctly able to name the controller medicines."

Red Tide Alert!

People with chronic respiratory conditions who are getting ready to head out to the beach in Pinellas County, FL, now have a new way to tell whether red tide might be a problem. A new web site — habscope.gcoos.org/forecasts — is offering 24-hour Experimental Red Tide Respiratory Forecasts several days a week that zero in on potentially dangerous red-tide blooms on a beach-by-beach level.

While most people experience only minor irritation from breathing in red-tide toxins, those with COPD, asthma, and other conditions can have severe reactions. The forecasts may eventually be expanded to cover other coastal areas affected by red tide.

Bacterial Pneumonia Worse for the Heart

In a study conducted among nearly 5,000 patients, researchers from the Intermountain Heart Institute found that those diagnosed with bacterial pneumonia had a 60% greater risk of a heart attack, stroke, or death than patients who had been diagnosed with viral pneumonia. Why? The investigators believe bacterial pneumonia causes greater inflammation of the arteries than viral pneumonia.

Inflamed arteries can destabilize the layers of plaque that have built up over the years, causing it to break loose from the artery wall and cause a blockage that leads to a heart attack, stroke, or death. The researchers presented their findings at the American Heart Association Scientific Sessions in Chicago last fall.

Tethered Antibodies May Prevent Influenza

A new study out of Scripps Research suggests that tethering four antibodies together may neutralize all types of influenza virus known to infect humans. The idea of tethering antibodies isn't new, explain the investigators, but this is the first time four have been tied together.

The scientists tethered together two llama antibodies against influenza A and two against influenza B to create a "multidomain" antibody. They found that the antibody could target several vulnerable sites on influenza A and B, meaning the antibody was cross-reactive and may have the ability to protect against all circulating strains of the virus that affected humans, as well as new subtypes that could mutate to cause pandemics.

From there, the researchers used a viral vector that could deliver a specially engineered gene to instruct cells to start expressing a protein composed of fragments from all four llama antibodies. When it was administered into the nostrils of mice via a nasal spray, it offered protection against multiple strains of influenza, most often within a few days. The study was published in a recent edition of *Science*.

Studies Look at ICU Delirium, ABCDEF Bundle

For more than four decades, ICU patients have typically received antipsychotic medications aimed at treating delirium. A study funded by the National Institute on Aging (NIA) to determine the effectiveness of these drugs has found they come up short.

The Modifying the Incidence of Delirium study, or MIND USA, looked at how typical and atypical antipsychotics — haloperidol or ziprasidone — affected delirium, survival, length of stay, and safety. Researchers screened nearly 21,000 patients at 16 U.S. medical centers. Of the 1,183 patients on mechanical ventilation or in shock, 566 became delirious and were randomized into groups receiving either intravenous haloperidol, ziprasidone, or placebo (saline). No significant differences were seen in duration of delirium or coma among participants on haloperidol or ziprasidone compared to placebo. Nor were any significant differences noted among participants on either antipsychotic medication compared to placebo in 30-day and 90-day mortality, time on the ventilator, or length of stay in the ICU and hospital.

"Every day, there are many thousands of patients receiving unnecessary antipsychotics in the critical care setting that are bringing risk and cost without benefit with respect to the outcomes measured in this NIA-sponsored MIND-USA study," said Wesley Ely, MD, MPH, professor of medicine at Vanderbilt University School of Medicine.

In a companion study to the MIND-USA study, Dr. Ely and his colleagues outlined the benefits of using the ABCDEF bundle in the ICU and its role in reducing delirium. The study, dubbed the ICU Liberation Collaborative investigation, followed 15,000 patients at 70 medical centers, finding that higher performance of the ABCDEF bundle saved lives; reduced length of stay, delirium, coma, and hospital readmissions; and lowered the risk of patients requiring transfer to a nursing home.

"In the ICU Liberation Collaborative investigation, we used a safety bundle much like what your airplane pilots use to help you get safely to your destination," said Dr. Ely. "We try and provide the least amount of sedation to keep people safe and comfortable in the ICU while also managing their delirium, involving their families, getting them mobilized and walking around. ICU teams all over the world are working together to create a new culture of critical care for patients and families."

Both studies were published in *The New England Journal of Medicine*. Dr. Ely spoke on the ABCDEF bundle and the role of the respiratory therapist during the Donald F. Egan Scientific Memorial Lecture at AARC Congress 2018 in Las Vegas last December.

Video Monitoring of Patients Receiving Tuberculosis Therapy Works

Directly observed therapy (DOT) is often recommended for tuberculosis patients to ensure they are following through with their treatment regimen. New research suggests that video DOT (VDOT) can do the same thing at a significantly lower cost.

In the study, which took place in California, 274 patients used a smartphone and a HIPAA-compliant app to record the administration of each medication dose and send videos to their medical providers. Ninety-three percent of their medication doses were observed on schedule compared with 66% for those who used DOT. The participants used VDOT for a median period of 5.4 months. The research was published in *Emerging Infectious Diseases.*

Tobacco Use Linked to Cognitive Decline in Patients with Fibromyalgia

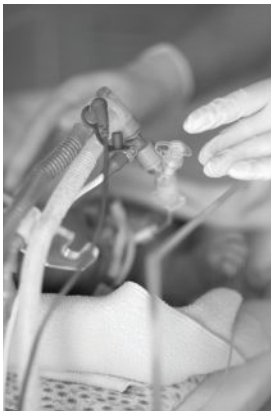
Mayo Clinic researchers presenting at the Annual Pain Medicine Meeting suggest that tobacco use is associated with cognitive decline in people with fibromyalgia. The study was conducted among 668 patients who were assessed for tobacco use and cognition in 2012–2013. Results showed worse overall cognitive function, language, verbal memory, visual-spatial memory, and concentration in tobacco users.

Tobacco use was also associated with increased fibromyalgia symptom severity, worse quality of life, worse sleep, and increased anxiety and depression.

Is Sitting *Really* the New Smoking?

An international team of investigators who looked at the medical evidence on the health effects of sitting and smoking say those who claim sitting is just as bad for your health as smoking don't know what they're talking about. While research can be found suggesting that sitting for more than eight hours a day can increase the risk of premature death and some chronic diseases by 10–20%, smoking more than doubles the risk of dying from cancer and cardiovascular disease and raises the risk of lung cancer by 1,000%.

"The simple fact is, smoking is one of the greatest public health disasters of the past century. Sitting is not, and you can't really compare the two," said study author Dr. Terry Boyle, from the University of South Australia. "Equating the risk of sitting with smoking is clearly unwarranted and misleading, and only serves to trivialize the risks associated with smoking." Dr. Boyle and his colleagues published their report in a recent edition of the *American Journal of Public Health*.



Genetic Pathways Linked to Severe Lung Disease in Preemies

In the largest study to date to perform whole-exome sequencing in extremely premature infants, researchers led by a group from Ann & Robert H. Lurie Children's Hospital of Chicago have uncovered genetic pathways associated with both severe lung disease and faster recovery from lung disease. One of the promising genetic pathways identified by the investigators relates to the gonadotropin-releasing hormone, which is involved in sex differences and reproductive functions. They found this pathway is overrepresented in babies with the most severe chronic lung disease.

"Our results lend further support to the theory that some chronic respiratory problems in premature babies have a genetic basis," lead author Aaron Hamvas, MD, said. "Ultimately, we hope that early genetic testing could help us identify infants at high risk for severe lung disease and reveal the precise genetic cause of their disease so that we can treat it most effectively." The study was published in *BMC Genetics*.

Sad Statistics for Pulmonary Rehabilitation

Pulmonary rehabilitation has been widely recognized as a beneficial treatment for people with COPD, and Medicare will typically pay for up to 36 sessions. But despite the fact that it works and Medicare covers it, hardly anyone actually gets it. That's the key finding from U.S. researchers publishing in the *Annals of the American Thoracic Society*. Their review of the records of 223,832 patients hospitalized for COPD in 2012 found:

- 4,225, or 1.9%, received pulmonary rehabilitation within six months of being discharged from the hospital.
- 6,111, or 2.7%, received pulmonary rehabilitation within one year of being discharged from the hospital.
- Whites, males, younger patients, and those on home oxygen were more likely to receive pulmonary rehabilitation.
- Smokers were less likely to receive pulmonary rehabilitation, as were those living more than 10 miles away from a pulmonary rehabilitation program, those belonging to lower socioeconomic groups, and those coping with additional chronic diseases and prior hospitalizations.
- Among those who started pulmonary rehabilitation, more than half completed at least 16 sessions.

The researchers weren't able to determine why more people don't attend pulmonary rehab — for example, is it because physicians don't recommend it, or because there are too many barriers keeping people from attending, or because people just don't want to do it — so more study is needed.

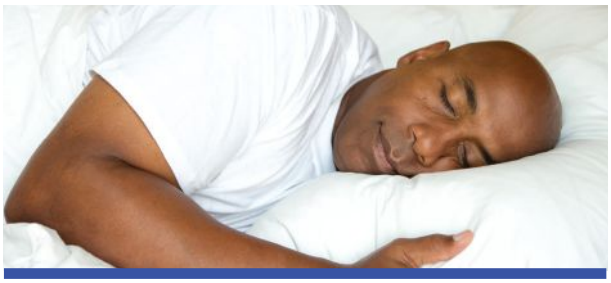
Duration of Apneas/Hypopneas More Important than Total Number

According to U.S. researchers who analyzed the records of 5,712 adults participating in the National Heart, Lung, and Blood Institute Sleep Heart Health Study, it's not how many times a person stops breathing during sleep that matters most. It's the length of time each episode lasts.

Their results showed participants with the shortest duration of breathing events were 31% more likely to die, and the association was strongest in participants with moderate sleep apnea as measured by the apnea/hypopnea index. In this group, participants with the shortest duration of breathing events had a 59% increased risk of dying.

"This result seems counter-intuitive because you might expect longer periods of not breathing to be more severe," said study author Matthew P. Butler, PhD, assistant professor in the Oregon Institute of Occupational Health Sciences at Oregon Health & Science University. "On the other hand, shorter periods of disturbed breathing indicate a low arousal threshold, which would associate with sleep fragmentation, elevated sympathetic tone, and greater risk for hypertension."

The study was published in the *American Journal of Respiratory and Critical Care Medicine*.



COPD More Prevalent in Rural Areas

COPD is about twice as prevalent in rural areas than in urban areas, find Johns Hopkins researchers publishing in a recent edition of the *American Journal of Respiratory and Critical Care Medicine* — 15.4% vs. 8.4%.

The study linked data from the 2012–2015 National Health Interview Survey to the Census Bureau's 2015 American Community Survey on more than 90,000 adults over the age of 40. Results were adjusted for a range of factors, including age, sex, race/ethnicity, smoking duration, occupation, markers of access to care, and socioeconomic status. The authors believe the higher prevalence seen in rural areas may be due to factors such as early-life infections, nutrition, and indoor and outdoor air pollution. However, they did not find an association between COPD prevalence and occupations that are more common in rural areas, such as mining, despite the fact that previous studies have linked mining and COPD.

High-Dose Flu Vaccines Pay Off

Two new studies have found that high-dose influenza vaccines may benefit people with chronic conditions. In the first study, researchers publishing in the *Clinical Journal of the American Society of Nephrology* found lower rates of hospitalization among dialysis patients who received the high-dose vs. the standard-dose flu vaccine in 2016–2017.

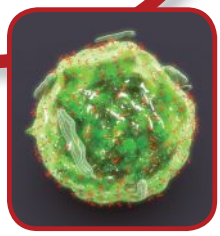
In the second study, the high-dose vaccine substantially improved the immune response to flu vaccination for seropositive rheumatoid arthritis (RA) patients compared to a standard dose. The RA study was presented at the ACR/ARHP Annual Meeting.

Are You a Storyteller?

Every therapist has a story to tell about a favorite or most memorable patient that would interest others in our profession. Maybe it was when you knew you had made the right professional decision for a patient. Maybe it was when you first realized how much difference you were making in the lives of the patient and family. Or maybe it was just something they said or did that made you laugh or cry or be inspired to be a better RT. Our "Storytellers" column is the place to share your experiences with patients. Send your story to *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org.

Strange but True . . .

There is a purpose:
Mast cells are known to play a role in allergies. So why do we have them? Researchers who studied these cells say they play an important role in helping the body survive prolonged fasting and intense exercise too — two things that were very important for our forbearers.



Wearable meds:
Swiss scientists are working on "self-care materials" that can be incorporated into clothing to deliver medications to patients. In some cases, the materials are built to work in response to a bodily condition, such as the altered pH value of a skin wound. In others, stimuli can be deliberately set from the outside to control the release of medication by the fibers.

Mother knows best:
Smoke inhalation is often the deadliest factor in any fire. Researchers who tested standard smoke alarms against alarms equipped with the sound of their mother's voice found kids awoke from sleep much faster when mom was talking. It took kids age 5–8 more than five minutes to awaken to the sound of a screeching alarm but just four seconds to be aroused when they heard their mothers' voices.

No worries:
Can your patients use an epinephrine auto injector (EAI) that was left outside or in the car during freezing weather? It's probably best to get a new one, but if they're in a pinch, the thawed out device may be better than nothing. Researchers who tested EAIs that had been frozen for 24 hours found that, once thawed, they injected the same volume of medication as EAIs that were not frozen. •

Industry Watch

AARC denounces FDA approval of Primatene Mist

The AARC joined other leading respiratory organizations, including the Allergy & Asthma Network; the American College of Allergy, Asthma, and Immunology; the American College of Chest Physicians; the American Lung Association; the American Thoracic Society; and the Association of Asthma Educators, in a press release expressing deep concerns over the FDA's decision to approve Primatene Mist as an over-the-counter treatment for mild, intermittent asthma. "Asthma is best managed when doctors and patients partner together to identify the most appropriate, long-term treatment plan," said Tonya Winders, president and CEO of the Allergy & Asthma Network. "Patients should never try to figure it out on their own."

Rutgers researcher receives lung cancer grant

Rutgers Cancer Institute of New Jersey researcher "Jessie" Yanxiang Guo, PhD, has received a $150,000 grant from the Lung Cancer Research Foundation to investigate the role of a cell-survival mechanism called autophagy in the development of lung cancers driven by mutations in tumor suppressors known as ***LKB1*** and oncogene ***KRAS***. The study will attempt to provide new therapeutic approaches to treating non-small cell lung cancer, a sub-type of lung cancer in which *KRAS* is active and the *LKB1* gene is deficient.

ATS, ALA offer new lung cancer screening website

The American Thoracic Society (ATS) and the American Lung Association's LUNG FORCE initiative have launched a new web site and online toolkit to help medical institutions implement and manage a lung cancer screening program. Available at LungCancerScreeningGuide.org, the site will cover everything from ATS policy statements and guidelines for lung cancer screening to clinical decision support tools and counseling for smoking cessation. Both the web site and the implementation guide provide tools for documentation and data collection within the electronic health record, sample forms, and patient outreach materials.

FDA approves new influenza drug

Xofluza (baloxavir marboxil) has been approved by the FDA for the treatment of acute uncomplicated influenza in patients 12 years of age and older who have been symptomatic for no more than 48 hours. The safety and efficacy of Xofluza, an antiviral drug taken as a single oral dose, was demonstrated in two randomized controlled clinical trials of 1,832 patients who were assigned to receive either Xofluza, a placebo, or another antiviral flu treatment within 48 hours of experiencing flu symptoms. In both trials, patients treated with Xofluza had a shorter time to alleviation of symptoms compared to patients who took the placebo. In the second trial, there was no difference in the time to alleviation of symptoms between subjects who received Xofluza and those who received the other flu treatment.

CF Foundation's new research initiative

The Cystic Fibrosis Foundation will commit at least $100 million over the next five years as part of a sweeping effort to address the chronic and intractable infections that are a hallmark of cystic fibrosis. The Infection Research Initiative is a comprehensive approach to improve outcomes associated with infections through enhanced detection, diagnosis, prevention, and treatment. It will seek to identify new ways to detect microorganisms and diagnose infections; to enhance understanding of CF microorganisms and how they are acquired; to support the development of safe and effective treatments, including antibiotics, antivirals, and antifungals; and to optimize current treatments to improve outcomes and minimize treatment burden.

Linde AG partners with CRiL

Cambridge Respiratory Innovations Limited (CRiL) has signed a collaboration agreement with Linde AG that covers clinical and commercial validation during the development of its N-Tidal B personal respiratory monitor. The agreement includes potential rights to commercialize the monitor, which is

capable of precise measurement of the tidal breathing CO_2 waveform shape, for specific indications as well. As part of the agreement, CRiL has established a commercial advisory board to seek the expertise of internationally respected leaders in cardiorespiratory health to refine and optimize the commercial road map for the N-Tidal technology.

Royal Philips launches new COPD campaign

Royal Philips launched a global initiative on World COPD Day last November to celebrate everyday wins by patients, providers, and caretakers regarding the management of COPD. The awareness and celebratory campaign is designed to help inspire COPD patients and caregivers to improve their overall quality of life. "While COPD is a chronic condition, it doesn't need to be a debilitating disease," said Dr. Teofilo Lee-Chiong, chief medical liaison at Philips. "Through a positive outlook, an active lifestyle, and adherence to therapy, patients with COPD can take back control of their lives."

NDA for YUPELRI announced

According to Theravance Biopharma, Inc., and Mylan N.V., the FDA has approved a New Drug Application (NDA) for YUPELRI™ (revefenacin), an inhalation solution for the maintenance treatment of patients with COPD. A long-acting muscarinic antagonist, YUPELRI is the first and only once-daily, nebulized bronchodilator approved for the treatment of COPD in the United States. In two replicate Phase 3 efficacy studies, YUPELRI demonstrated statistically significant and clinically meaningful improvements as compared to placebo in trough FEV_1 and in overall treatment effect on trough FEV_1 after 12 weeks of dosing.

Attenua begins Phase 2 trial of chronic cough medication

Attenua, Inc., a clinical-stage biopharmaceutical company focused on developing novel medicines to treat cough, has announced that the first patient has been treated with its lead compound bradanicline (formerly known as ATA-101) in a Phase 2 clinical trial in chronic cough. The randomized, double-blind, dose-escalation, crossover study is testing the efficacy and safety of bradanicline in up to 49 patients with refractory chronic cough. Patients will receive either escalating doses of the drug or a matching placebo on a daily basis for three weeks, followed by a 14-day washout period before crossing over to the opposite treatment for three weeks.

Mesa Biotech receives CE Mark for RVS test in Europe; FDA approval pending

Mesa Biotech, Inc., a privately held molecular diagnostic company that has developed an affordable and easy-to-operate polymerase chain reaction testing platform designed specifically for point-of-care, has obtained the CE Mark in the European Union for its Accula™ RSV Test. The Accula RSV Test is pending FDA clearance in the United States.

CHEST names new CEO

The American College of Chest Physicians (CHEST) has appointed Robert A. Musacchio, PhD, as its new executive vice president and CEO. Dr. Musacchio will lead its day-to-day operations and staff of more than 100 employees. He joined CHEST in 2015 as senior vice president of business development and chief operating officer of CHEST Enterprises, Inc., a wholly owned subsidiary of CHEST. Most recently, he served as CHEST's chief operating officer. He has led the launch of CHEST Analytics; expanded CHEST's global programs, products, and partnerships; updated the organization's financial systems and policies; and strengthened business relationships.

Hands-only CPR training via kiosk effective

A new American Heart Association study supported by the Anthem Foundation found that people who learned hands-only CPR using a five-minute, kiosk-based program performed CPR as well as those who attended a 30-minute, facilitator-led training session. The study is the first to evaluate the effectiveness of kiosk-based training for hands-only CPR compared to other hands-only CPR training methods. It was published in the *Annals of Emergency Medicine*. ■

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

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Industry Update

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EMMA™: Portable Real-time Capnography

Featuring $EtCO_2$ Measurement and Waveform

Measurements

EtCO2 — End-tidal Carbon Dioxide

RR — Respiration Rate

- Pocket-sized, self-contained mainstream capnograph
- Minimal warm-up time and requires no routine calibration[1]
- Used in multiple environments including pre-hospital, emergency department, operating room, and intensive care unit

EMMA can be used with a breathing circuit to provide CO_2 measurements

www.masimo.com

[1] For complete specifications, including measurements, see Operator's Manual.

Caution: Federal (USA) law restricts this device to sale by or on the order of a physician. See instructions for use for full prescribing information, including indications, contraindications, warnings, and precautions.

Masimo

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